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# THE FAR EASTERN REVIEW

遠東時報

Engineering

Finance ❀ Commerce

ol. XII., No. 8. ❀ SHANGHAI—MANILA ❀ January, 1916.

## End the Philippine Muddle

## Roads the Salvation of China

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## Restoration of Monarchy in China

PALACE HOTEL

## Peking Syndicate's Honan Mine

## Japan's Latest Insult to China

## The Industrial Exposition of Chosen

ABLE OF CONTENTS ON PAGE 307 INDEX OF ADVERTISERS FACING PAGE 332

# THE J·G·WHITE COMPANIES

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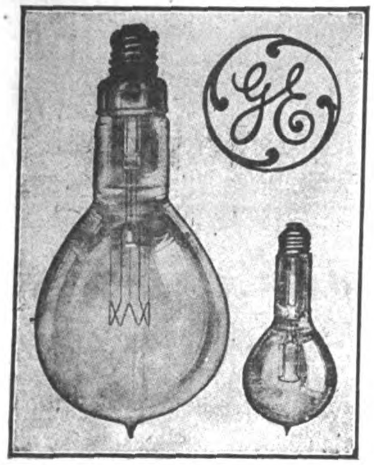

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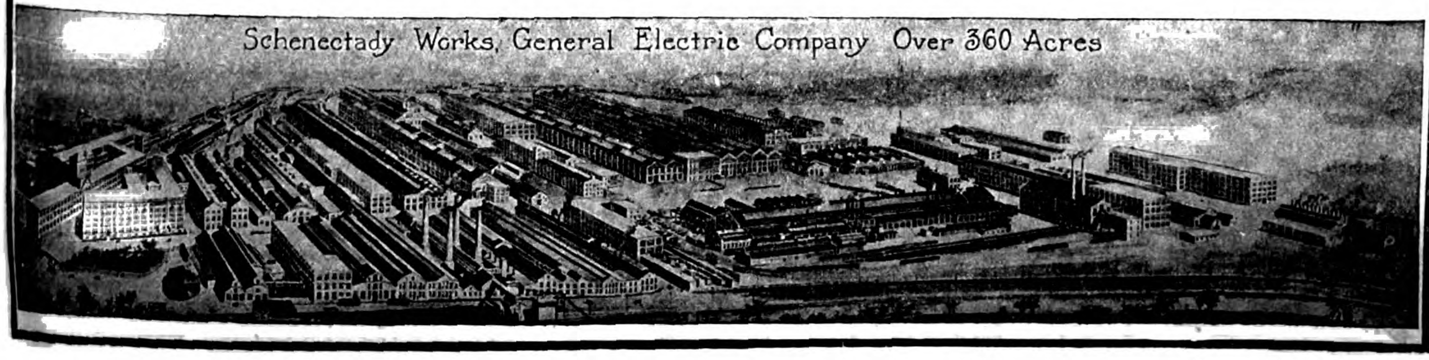

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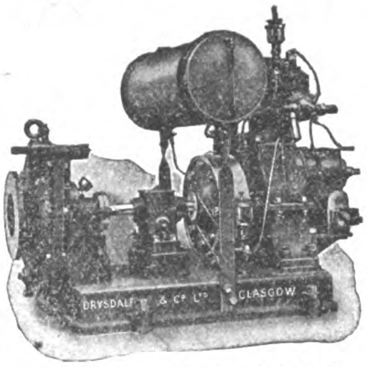

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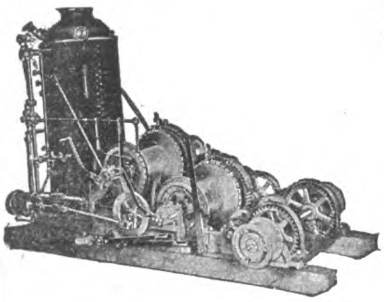

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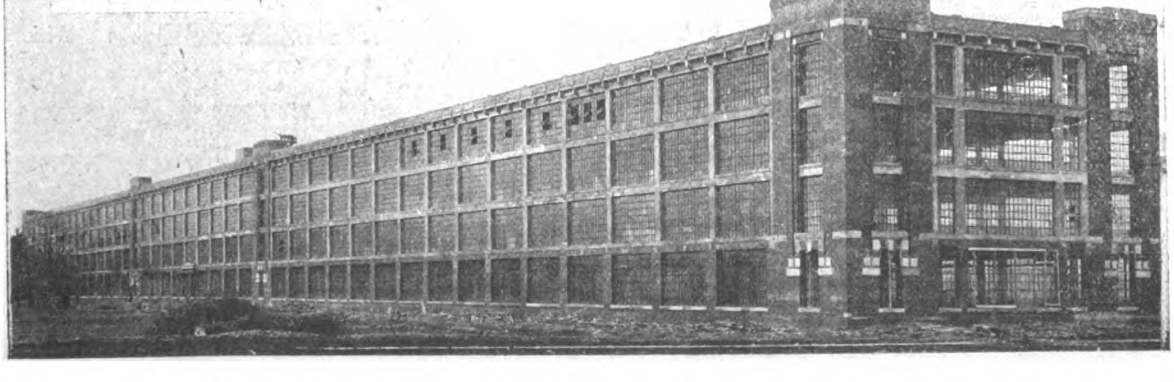

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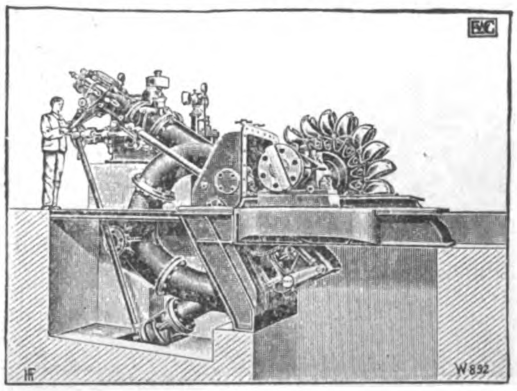

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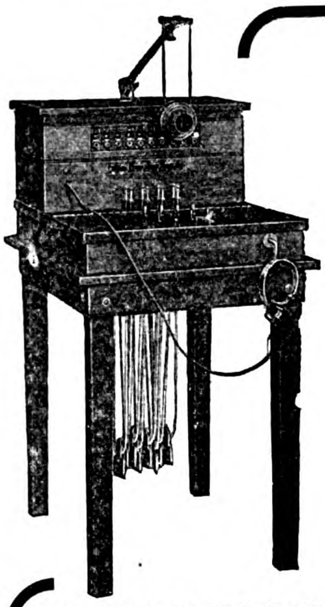

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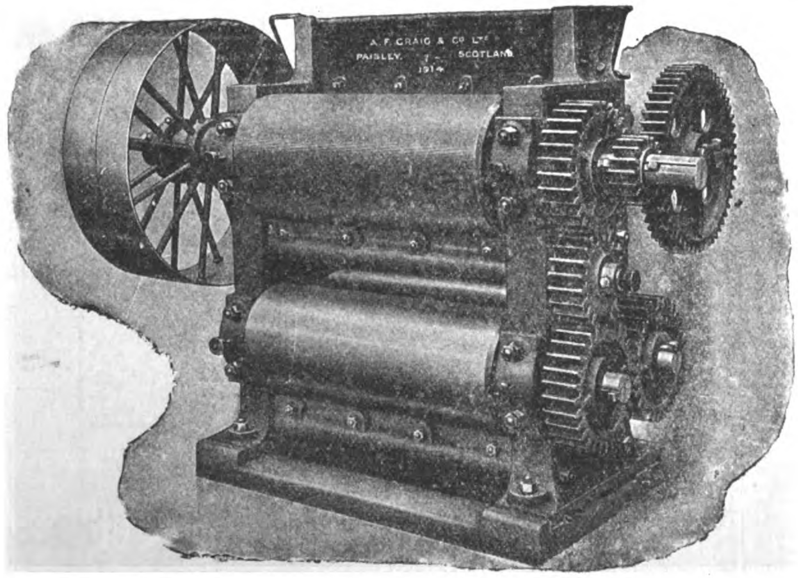


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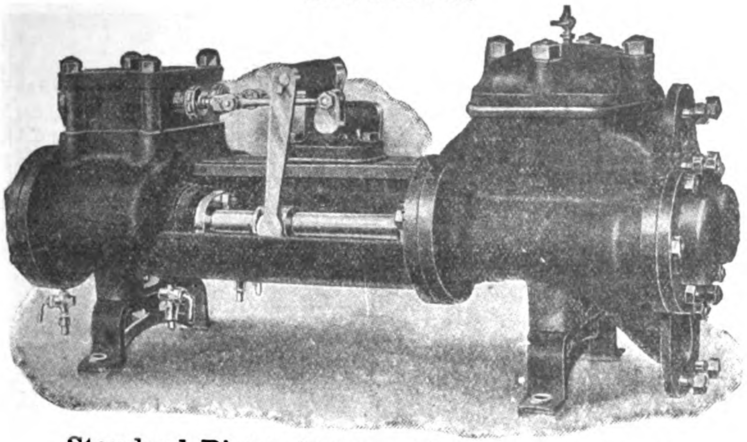

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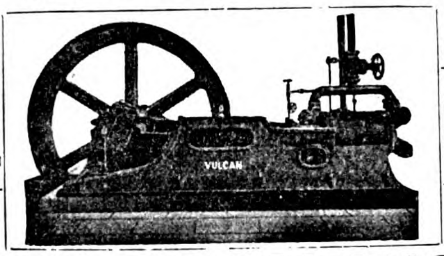
VUL  CAN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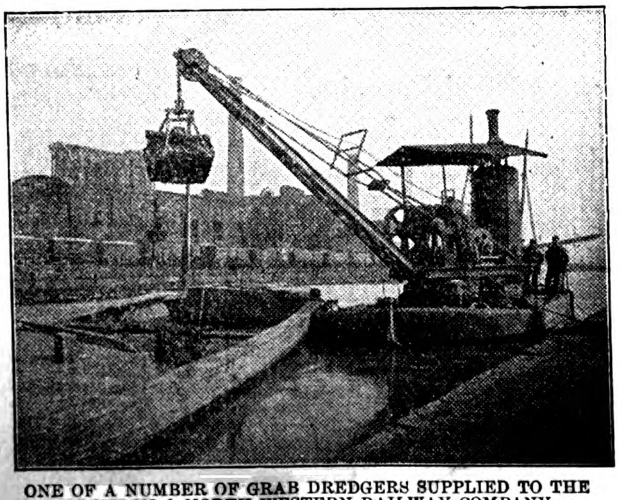

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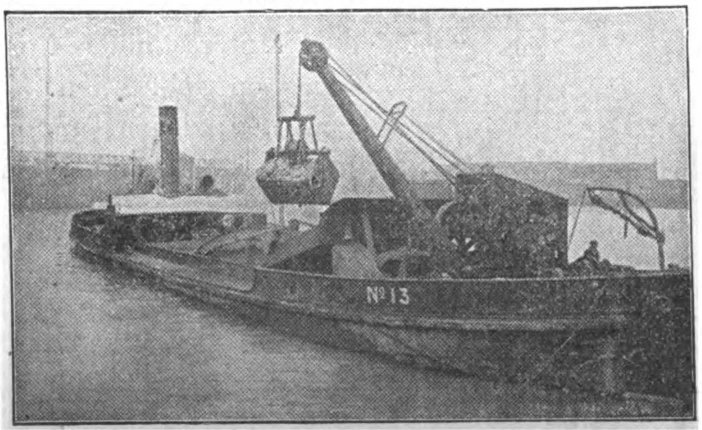


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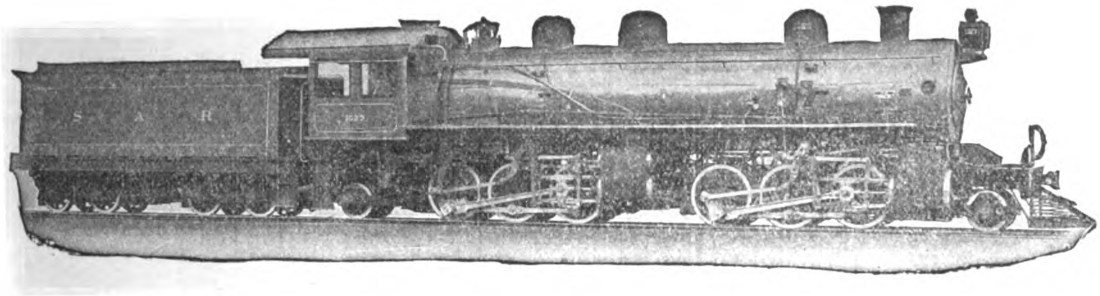


Total Weight of Engine, 230,000 pounds; Weight on Driving Wheels 196,000 pounds; Diameter of Driving Wheels 46" Boiler Pressure 200 pounds; Cylinders 18" and 28½"×26"; Tractive Power, 47,700 pounds.

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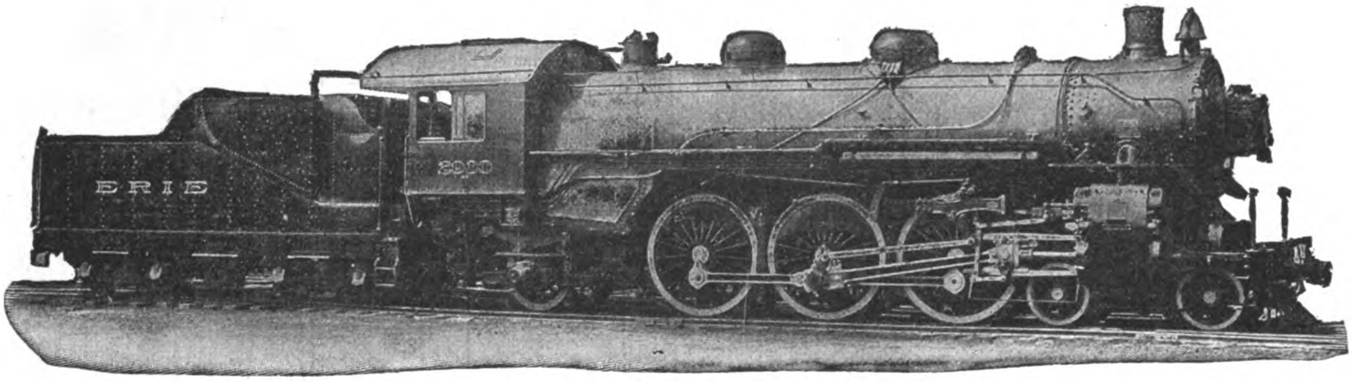
**Builders of all Classes of Motive Power. Capacity 720 to 1,000 per year**

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## LIMA HEAVY PACIFIC TYPE

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Built for the **ERIE RAILROAD** for heavy fast passenger service where maximum capacity was desired.

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|---|---|
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| Driving wheel base, 14 ft. | Total Weight, 287,000 lbs. |
| Total Wheel base, 36 ft. 2 inches | Tractive Power, 40,700 lbs. |
| Drivers, diameter 79 inches | Factor Adhesion, 4.24 |
| Boiler, straight locomotive type | Superheater, Schmidt |
| Boiler diameter 79 inches | Valve motion, Baker |

Our **PLANT** is equipped with the latest and most improved machinery, which enables us to build any type or size locomotive required.

Write our Agents for any information you desire and a copy of our catalogue.

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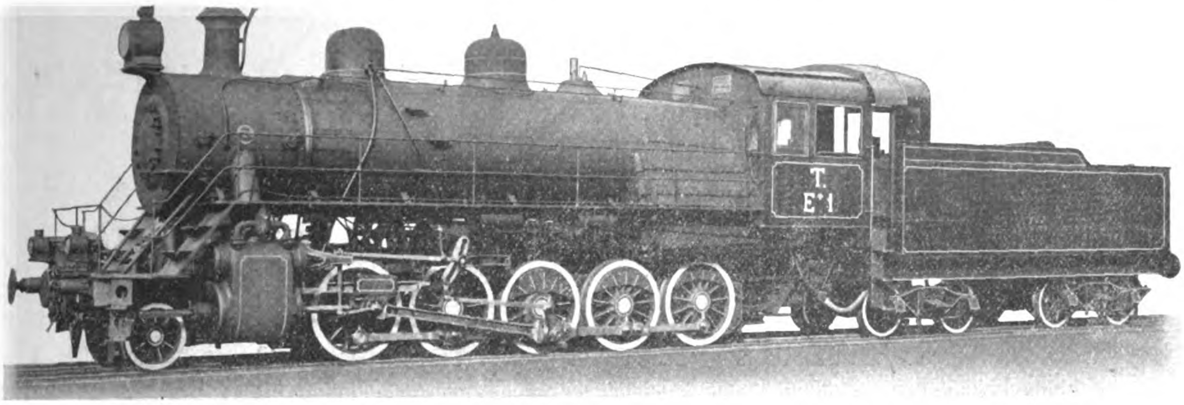
BRANCH OFFICE
50 CHURCH STREET, NEW YORK, N. Y.
CABLE ADDRESS
SHAYLOCO

AGENTS
SAMUEL, SAMUEL & CO.,
YOKOHAMA, TOKYO, KOBE, SHIMONOSEKI, JAPAN; TAIPEH, FORMOSA

# LOCOMOTIVES FOR RUSSIA




DECAPOD TYPE LOCOMOTIVE, RUSSIAN STATE RAILWAYS

Cylinders, 25"×28"
Driving-wheels, diameter 52"
Steam pressure, 180 lbs.
Grate area, 64.5 sq. ft.
Water heating surface, 2,601 sq. ft.
Superheating Surface, 563 sq. ft.
Weight on driving-wheels, est., 176,000 lbs.
Weight, total engine, est., 198,000 lbs.
Tractive force, 51,500 lbs.

The illustration shows one of 250 freight locomotives recently built by The Baldwin Locomotive Works for the Russian State Railways. These locomotives have a gauge of 5'-0", and were designed to haul 1,000 tons up a straight grade of 0.8 per cent. at a speed of 8 to 10 miles per hour. This they should be able to do easily, while working at a fairly economical cut-off. Plain tires, without flanges, are used on the middle pair of driving-wheels; and the front and rear wheels have sufficient side play to enable the locomotives to traverse curves of 350 feet radius.

These locomotives use an inferior grade of bituminous coal, which is burned on a wide grate placed above the rear pair of driving-wheels. The inside fire-box is of copper, and copper stays are used in the water-legs. The equipment includes a brick-arch supported on water-tubes; also a superheater of the Schmidt type. The fire-door and reverse gear are power-operated. Careful attention has been given to the design of the machinery and reciprocating parts, in order to reduce weight where possible.

In general design, these locomotives follow American practice closely, although much of the equipment conforms to Russian standards; and the cab fittings are so arranged that Russian enginemen can handle the locomotives without difficulty.

THE BALDWIN EXHIBIT AT THE PANAMA PACIFIC INTERNATIONAL EXPOSITION WAS AWARDED THE GRAND PRIZE.

## THE BALDWIN LOCOMOTIVE WORKS

Cable Address:—"BALDWIN, PHILADELPHIA" PHILADELPHIA, PA., U. S. A.

Agents for China:—ARNHOLD, KARBERG & Co., SHANGHAI, TIENTSIN, HONGKONG and HANKOW

Agents for Japan:—SALE & FRAZAR, Ltd., TOKYO.

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## Gas Suction and Producer Plants

The best and most efficient Coal on the market is the Pekin Syndicate's Honan Anthracite

## GAS ENGINE COAL

specially graded to any size required

Prices on application to:—

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吸 煤 氣 機　　發 煤 氣 機

福公司河南無煙煤最爲良美合用

煤 氣 氣 機 煤

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## 福 公 司

上海　天津　漢口　北京

# 27,000 PYLE-NATIONAL ELECTRIC HEADLIGHTS IN SERVICE

Actual Photograph taken on the Chicago, Rock Island and Pacific R.R., with no other light but the Pyle-National Electric Headlight. The station seen is half a mile from the engine.

A Pyle-National Electric Headlight gives a Great Beam of Clear, Strong, Penetrating Light that distinctly illuminates the Track for Half a Mile Ahead of the Locomotive, enabling the Engine Driver to maintain Schedules, verify Signals and avoid Accidents.

*Three Railroads are each operating more than 1,700 Pyle-National Headlights.*
*Four Railroads more than 1,000 each. Twelve Railroads more than 500 each.*

**PYLE-NATIONAL ELECTRIC HEADLIGHT COMPANY**

**900 So. Michigan Ave., Chicago, Ill., U.S.A.**

*Export Agents.* **Railway Materials Export Corporation.** 149 Broadway, New York, U.S.A.

# PURE WATER IN ABUNDANCE

A CLEAR AND SPARKLING SUPPLY AT SMALL COST

BY USING

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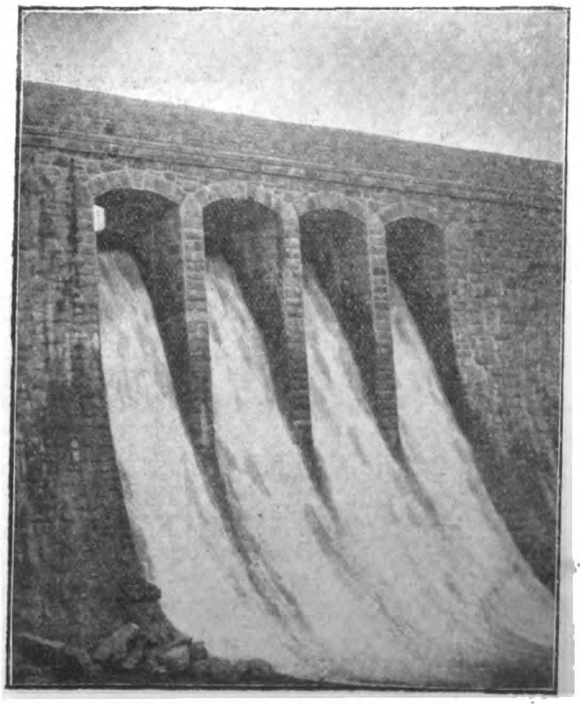
Our Expert Staff is at your service to design free of charge a plant to suit your conditions and upon which you can rely with certainty.

Our Patented Filters, Processes, and Apparatus, cover the whole field of water purification in all its branches.

**THE CANDY FILTER Coy. Ltd., WESTMINSTER, LONDON**



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SOCONY

REG. TRADE MARK

To Manufacturers :-: Mill Owners :-: Engineers.

SOCONY Lubricating Oils are manufactured by the most scientific processes.

Expert refiners prepare each and every grade so that it will give the highest possible amount of efficiency under working conditions

Every ounce of the whole load of your factory comes on the Cylinder and Valves and the best Lubrication you can give them, is not too good.

Idle engines earn no money, but are a constant source of expense. High engine efficiency is only obtained by perfect lubrication with Standard Lubricants.

Although a High Class Oil costs more initially, in the end it is far cheaper, its economical life is longer, its Lubricating qualities greater, and its consumption less.

Railway Lubrication has always been the cause of endless worry to the engineer. The best oils should be used, as exhaustive tests have proved that the cost of coal required to overcome the friction was 3 times the cost of a Cheap Lubricant, and the cost to renew the metal was 6 times the cost of a Cheap Lubricant.

# STANDARD OIL COMPANY OF NEW YORK

## Lubricating Oil Department

## Dealers and Branches all over China

# Kellogg System—the Standard Telephone Equipment

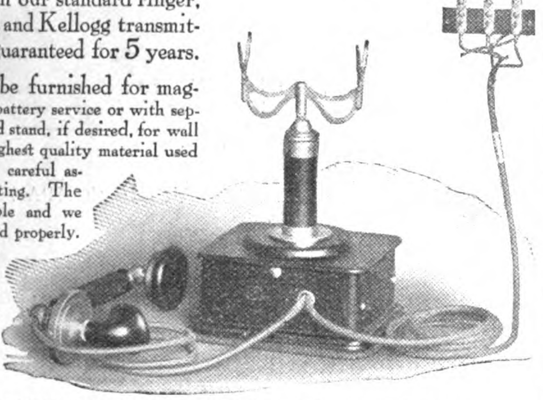
FOR all telephonic purposes—portable telephone service, intercommunication systems, local lines, small magneto exchanges, universal exchange, common battery systems—KELLOGG SYSTEM is the most efficient service in the world. The largest or smallest telephone unit supplied.

A popular type of Kellogg Telephone is illustrated. It is a compact and reliable model, and assures a service that avoids trouble and repair expense. The parts are easily accessible; the most convenient type of telephone to use for all conditions and purposes.

Equipped with our standard ringer, induction coil and Kellogg transmitter which is guaranteed for 5 years.

The set can be furnished for magneto or common battery service or with separate bell box and stand, if desired, for wall or table use. Highest quality material used throughout with careful assembling and testing. The price is reasonable and we ship promptly and properly. Built in our own extensive factory. *KELLOGG System is in universal use.*

*"USE is the TEST"*



*Write for the KELLOGG BULLETINS, "A fund of information as to the technical working of the telephone apparatus. Sent free on request.*

**Kellogg Switchboard and Supply Co.**

Chicago, U. S. A.

Frank L. Strong Machinery Co.
64-68 Calle Echague, MANILA

Andersen, Meyer & Co.
Yuen Ming Yuen Road, SHANGHAI

# GOULDS PUMPS
## FOR EVERY SERVICE

THE many years of experience which this company has had in furnishing pumps to the export trade has given us an intimate knowledge of the pump requirements in every civilized country.

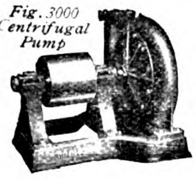


*Fig. 3000 Centrifugal Pump*

This experience has enabled us to develop and manufacture for export business, a line of pumps which is unequalled anywhere.

*Fig. 1454 Deep Well Working Head*

***This line consists of***
- Triplex Power Pumps
- Deep Well Power Pumps
- Centrifugal Pumps
- Hand and Power Pumps for Pneumatic and Gravity Water Supply Systems
- Spray Pumps
- Diaphragm Pumps
- Vacuum Pumps
- Rotary Pumps and many other types for standard and special services.

*Fig. 1604 'New Alert' Double Acting Air and Water Force Pump*

***Write for Catalogue which describes complete line.***

**The Goulds Manufacturing Co.**

Main Office and Works
Seneca Falls, New York, U. S. A.
Cable Address: "Glavis Seneca Falls"
A. B. C. Liebers, Western Union and Private Code

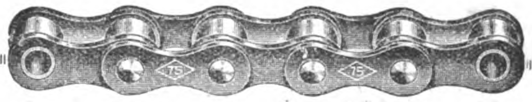
# *The AUSTIN Drainage Excavator*

digs, in one operation, a clean ditch, conforming to plan—true to line, grade and cross-section, with sloping banks, clean berms, and spoil embankments finished exactly as desired.

There are Austin Trenchers and Excavators in many sizes and styles for the construction of Open Ditches—for drainage or irrigation—and of Canalization Sys ems—for sewer, water and gas pipe mains.

*Writ for Compl te Catalogue "L.F."*
When writing describe proposed work, giving dimensions of ditches and character of soil.

**F. C. AUSTIN Drainage Excavator Company,**
Railway Exchanges, Chicago, U.S.A.
Cables: "EXCAVATOR, CHICAGO."
Codes: LIEBERS, A.B.C., Fifth Edition, and Western Union.



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for

**Cycles, Motorcycles, Automobiles, Motor Trucks and Power Transmission**

PRODUCED in the largest factory in the United States devoted exclusively to the manufacture of high-grade steel block and roller chains. For twenty-five years 'Diamond' Chains have been recognized as the American *Standard.*

We are prepared to serve the trade promptly with high-grade chains, which are strong, durable and accurately manufactured.

**Special care given to Export Shipments.**
**Correspondence solicited in any language.**
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**Indianapolis, Indiana**
**U. S. A.**

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**Cable Address — "Chain" Indianapolis**

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TRUSSED CONCRETE STEEL COMPANY,
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OTIS ELEVATOR COMPANY,
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YORK MANUFACTURING COMPANY,
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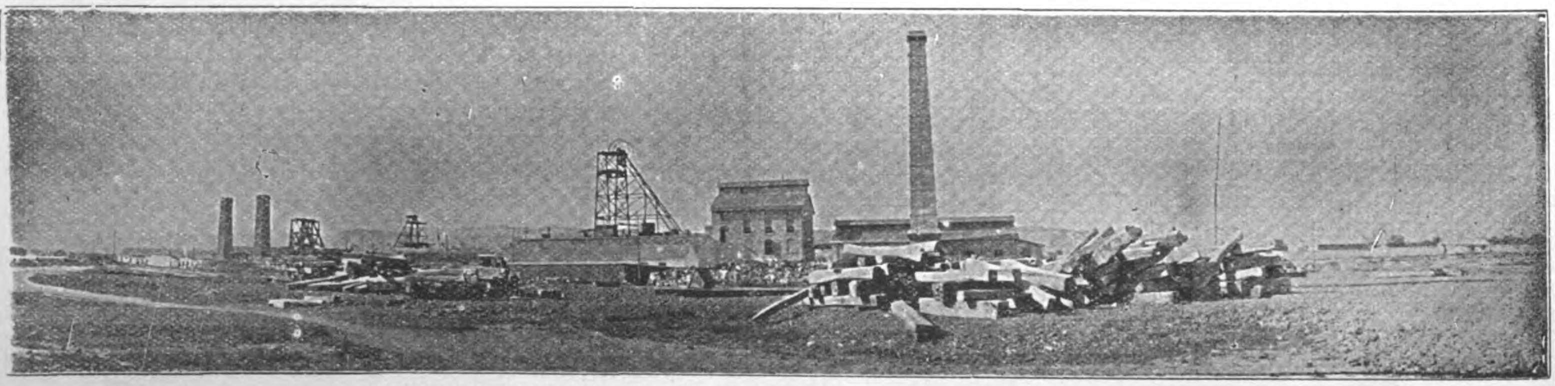
GARLOCK PACKING COMPANY

# CHINESE GOVERNMENT RAILWAYS

## THE TAO-CHING RAILWAY

### TAOKOU TO CHINGHUA

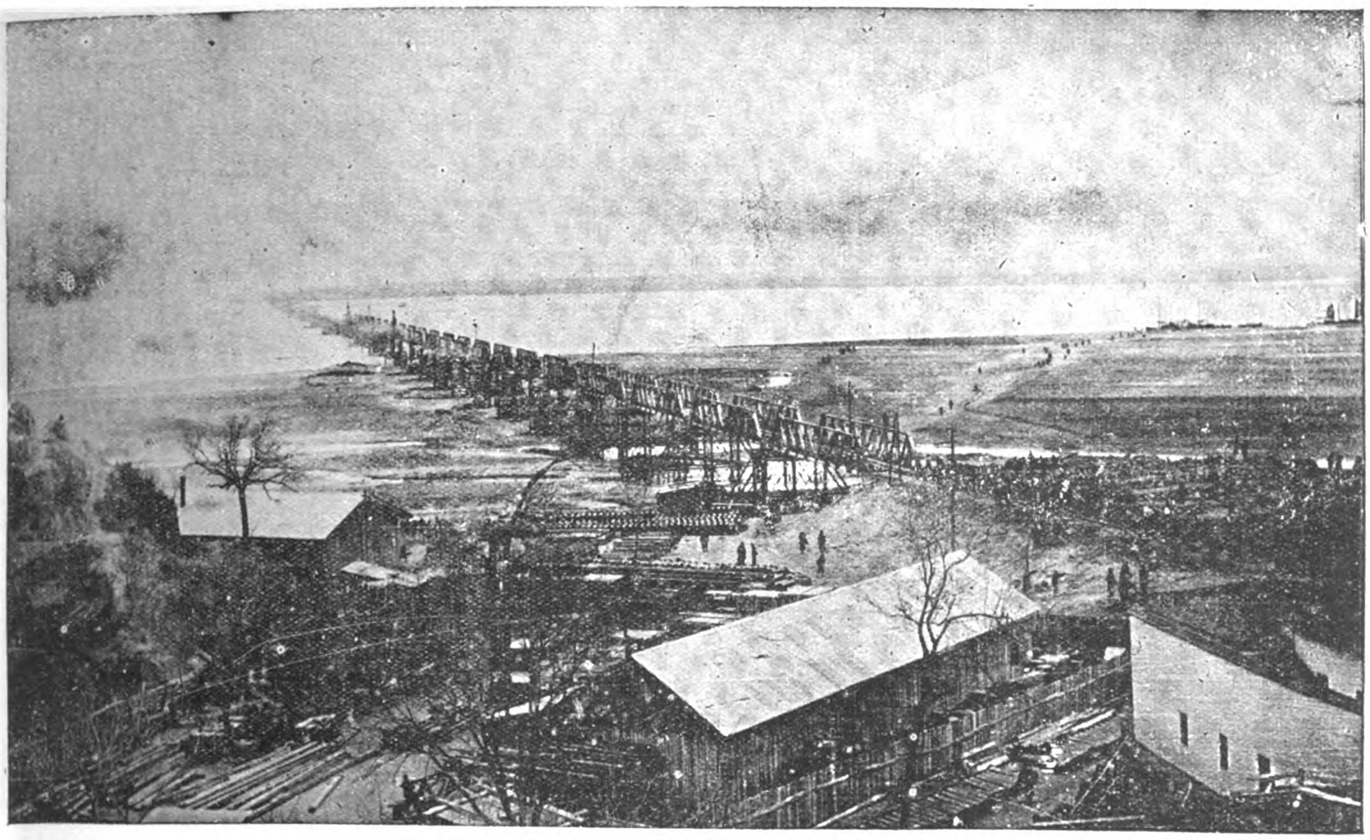
(CHINESE GOVERNMENT HONAN LINE)



GENERAL VIEW OF COAL MINES ON THE LINE OF THE TAO-CHING RAILWAY

## "China's Road of Anthracite"

THE TRAINS OF THIS LINE CONNECT AT SIN-SIANG-SIEN WITH THE THROUGH SERVICE OF THE PEKING-HANKOW RAILWAY. IT TAPS THE GREAT ANTHRACITE COAL DEPOSITS OF SHANSI, AND CONVEYS THE PRODUCTS OF THE MINES TO THE NEAREST NAVIGABLE RIVER.



THE YELLOW RIVER BRIDGE ON THE PEKING-HANKOW LINE

CHINESE GOVERNMENT RAILWAYS

# PEKING-HANKOW LINE

"THE ROAD THROUGH THE HEART OF CHINA"

Avoid the Cold and Rough Weather in the Sea Trip between Shanghai and the North by the more comfortable Route up the Yangtsze to Hankow, and from there via the Ching-Han Railway to Peking, where through connections for Europe are made with the Trains de Luxe of the Government Railways of North China.

This line passes through the Heart of the Country and enables the traveller to and from Europe to catch a glimpse of Old China. Ancient walled cities, temples and pagodas are seen from the comfortable seats of the weekly trains de luxe operated by this line. From Peking, the great capital of the oldest civilization in the world, the train departs from the famous Chien-Men and carries the traveller through the historical and legendary portions of the Country, to the modern industrial center at Hankow—the Chicago of China. Connections are made with the Cheng-Tai Railway at Chengtingfu, with the Tao-Ching Line at Sin Siang-sien, and at Chengchowfu with the Pienlo Line.

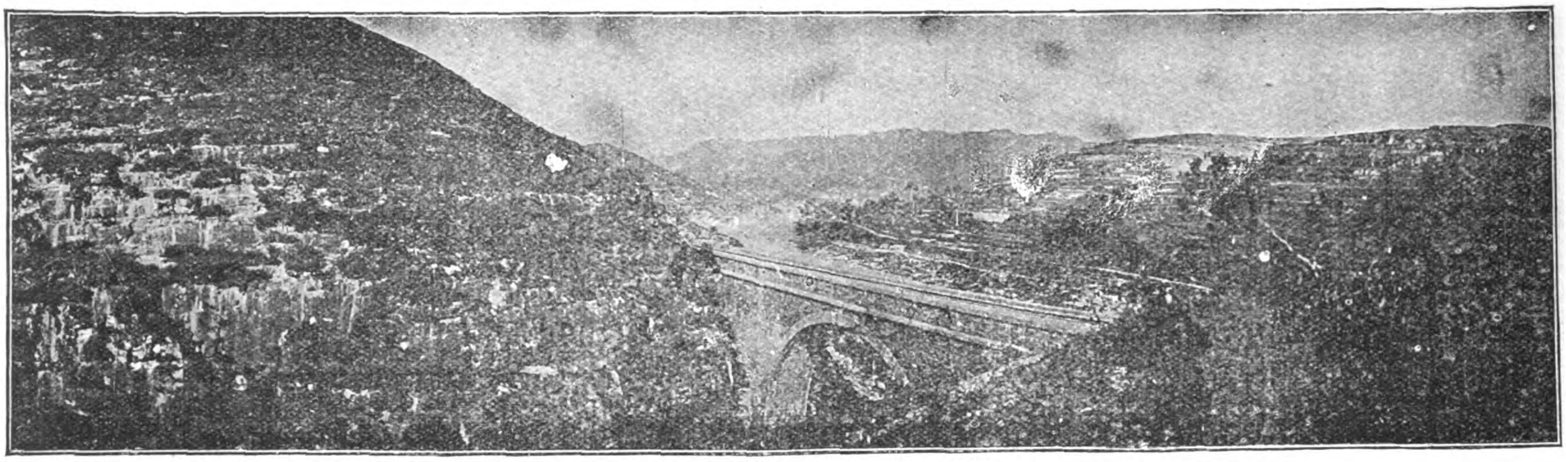
A weekly express train de luxe leaves Peking every Tuesday, and Hankow every Friday, making the trip of over 700 miles in less than thirty hours.

For information apply to any office of the International Sleeping Car Co. or Thos. Cook and Sons.

# Chinese Government Railways

## The Cheng-Tai Railway

*(CHINESE GOVERNMENT SHANSI LINE—CHENGTINGFU TO TAIYUANFU)*

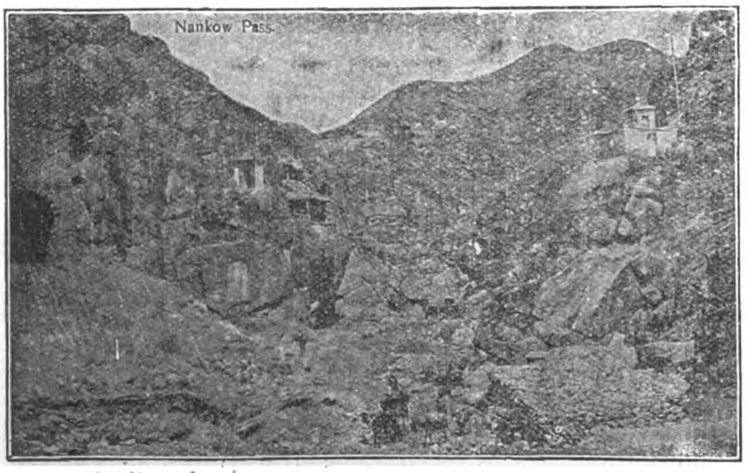


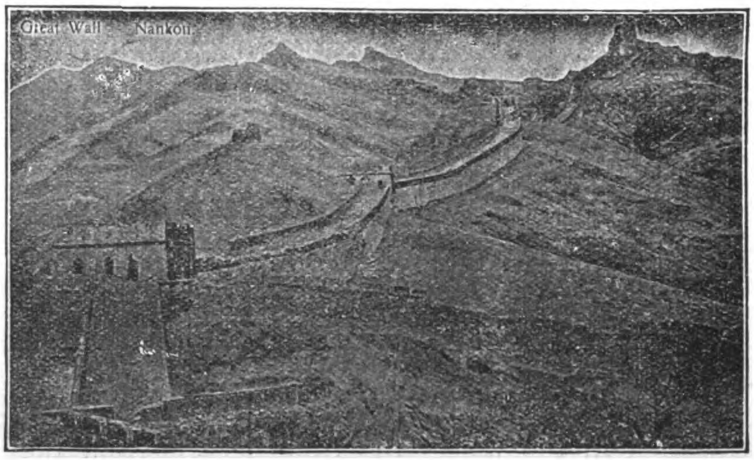
VIEWS ALONG ROUTE OF CHENG-TAI RAILWAY

The trains of this line connect with the through service of the Peking-Hankow Railway, affording Travellers the opportunity of seeing the most picturesque part of China. The line passes through a mountainous section of country, rich in Mineral Resources to the Provincial Capital of Shansi at Taiyuanfu. This interesting city is a great educational center, and famous for the fine quality of its artistic embroideries.

## The Peking-Kalgan Line

*"THE ROAD TO THE GREAT WALL"*



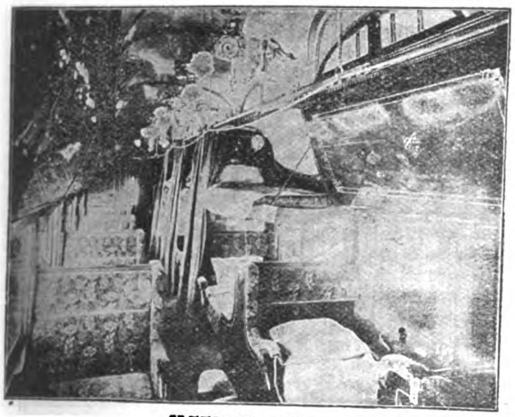

This line follows the ancient caravan route and military highway from Mongolia into China by the way of the historic Nankow Pass. This pass is the Key to Peking, and Kalgan is the gate of the Country. From here the great camel caravans set out on their long journeys across Mongolia to Siberia and Central Asia. This old frontier mart, retaining its time-honored characteristics, one of the most interesting sights of the Old World, is made accessible by the new railway. The line also carries the passenger in two hours from Peking to Nankow, when the Great Wall of China and the Ming Tombs may be seen. A foreign hotel is operated by the railway authorities at Nankow, where chairs and guides may be secured for the Tombs.

SHORTEST, QUICKEST, AND CHEAPEST ROUTE BETWEEN THE FAR EAST AND EUROPE

THE SOUTH MANCHURIA EXPRESS

| | | | |
|---|---|---|---|
| Shanghai | to London | in | 13½ days |
| Tokio | „ „ | „ | 13¼ „ |
| „ | „ Peking | „ | 3½ „ |
| Dairen | „ Moscow | „ | 8¾ „ |

# South Manchuria Railway



SLEEPING CAR

THRICE WEEKLY EXPRESS TRAINS.—Composed of excellently equipped SLEEPING, DINING, and 1st CLASS CARS. Operated between DAIREN and CHANGCHUN in connection with the TRANS-SIBERIAN ROUTE and SHANGHAI MAIL STEAMERS.

DINING CAR

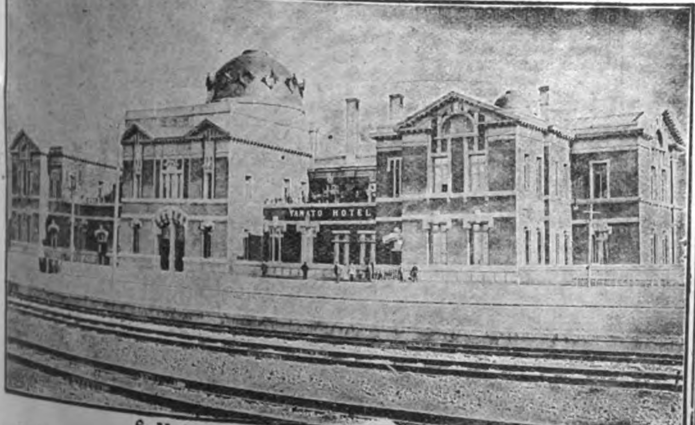
CONNECTIONS AT MUKDEN.—These Express Trains connect at MUKDEN with the PEKING-MUKDEN RAILWAY running via TIENTSIN and with the newly organized MANCHURIA-CHOSEN THRICE WEEKLY EXPRESS SERVICE between Changchun and Fusan; the MUKDEN-ANTUNG LINE (now running throughout on standard gauge) connecting with the KOREAN RAILWAY; by this route the journey between Europe and Japan is shortened by two days, and the sea voyage considerably reduced.

OTHER STEAMER CONNECTIONS AT DAIREN.—Regular Steamship Services are maintained from DAIREN to MOJI, KOBE, CHEMULPO, TIENTSIN, CHEFOO, TSINGTAU, and other ports in Japan and China.

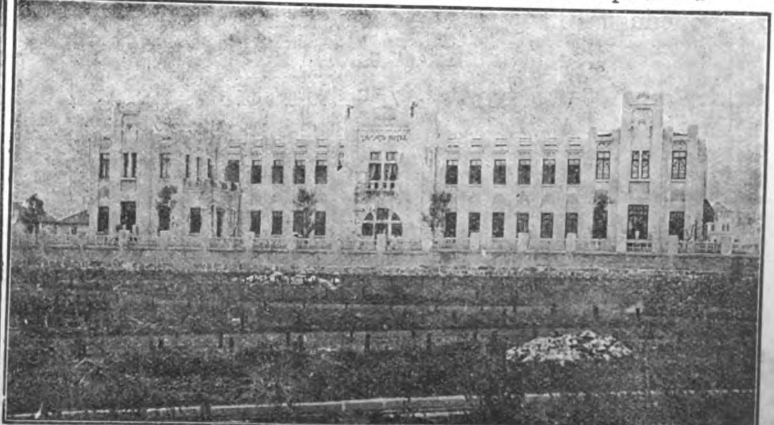
S. M. R. YAMATO HOTEL HOSHIGAURA (STAR BEACH)

RAILWAY HOTELS.—YAMATO HOTEL (Tel. Add.: "Yamato") at DAIREN, PORT ARTHUR, MUKDEN, CHANGCHUN, and HOSHIGAURA, all managed by the Company on European lines and providing comfortable accommodation. At Hoshigaura ("Star Beach"), the finest seaside resort in North China, 5 miles from Dairen, in addition to the hotel, there is a large number of bungalows (for hire at moderate terms), situated in a charming cliff garden and surrounded by beautiful scenery.

TICKET AGENTS IN EUROPE AND THE FAR EAST.—The INTERNATIONAL SLEEPING CAR & EXPRESS TRAINS CO.; The NIPPON YUSEN KAISHA, Shanghai; Messrs. THOS. COOK & SON; the REISEBUREAU DER HAMBURG-AMERIKA LINIE; and the NORDISK RESEBUREU. Time-tables, fares, literature, and any information can be obtained gratis upon application to the Traffic Department.



S. M. R. YAMATO HOTEL, MUKDEN



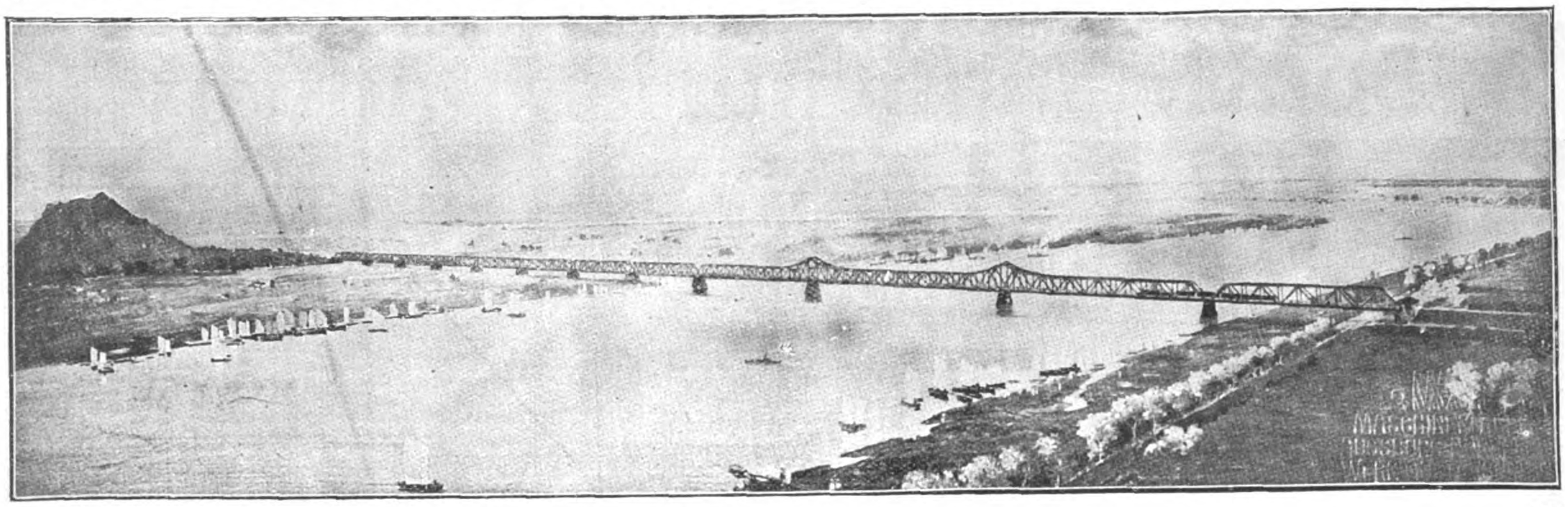
S. M. R. YAMATO HOTEL, CHANGCHUN

## SOUTH MANCHURIA RAILWAY COMPANY, DAIREN, MANCHURIA

Tel. Add.: "MANTETSU" -:- Codes: A. B. C. 5th Ed., A-1, and Lieber's

# CHINESE GOVERNMENT RAILWAYS

# TIENTSIN-PUKOW LINE



THE YELLOW RIVER BRIDGE

**Mukden-Peking-Kalgan-TIENTSIN-TSINANFU-HSUCHOWFU-PUKOW-Nanking-Shanghai.**

**all by rail only.**

Being the **quickest, surest and most convenient** connection between Shanghai on the one and Tientsin, Peking, Kalgan, Mukden and the **Siberian route on the other side,** this railway represents **a saving of many hours, of many troubles,** worries and inconveniences for the busy merchant, the home tripper on short furlough.

The tourist, the globe trotter travelling with more leisure and bent on seeing things, it takes right away from the stereotyped banality of the great ports, takes him through many provinces of the vast republic and shows him **something of the "real" China,** of its people, its history and its beauty.

Express trains equipped with sleeping and buffet cars run once a week each way between Pukow (Nanking) and Tientsin connecting with the through service of the South-Manchuria and Trans-Siberian Railways.

Through mail trains equipped with **buffet cars run daily each way** between the before mentioned termini.

The crossing over the Yangtsekiang between Nanking and Pukow is effected by means of a modern 100-tons twin-screw ferry boat.

Special facilities and **liberal allowances** for passengers' baggage.

Best of **meals and wines supplied** on the trains.

Sanitation under the personal supervision of a **qualified medical officer.**

For further particulars apply to The Traffic Manager, Head Office, Tientsin or to the Agencies of Messrs. Thomas Cook & Sons, The International Sleeping Car & Express Trains Co. or the Nordisk Resebureau.

Telegraphic Address: TSINPURY—Tientsin (Tsinanfu, Nanking, Shanghai).

Codes: A B C 5th Edition; Broomhalls' (with Suppl. No. 1).

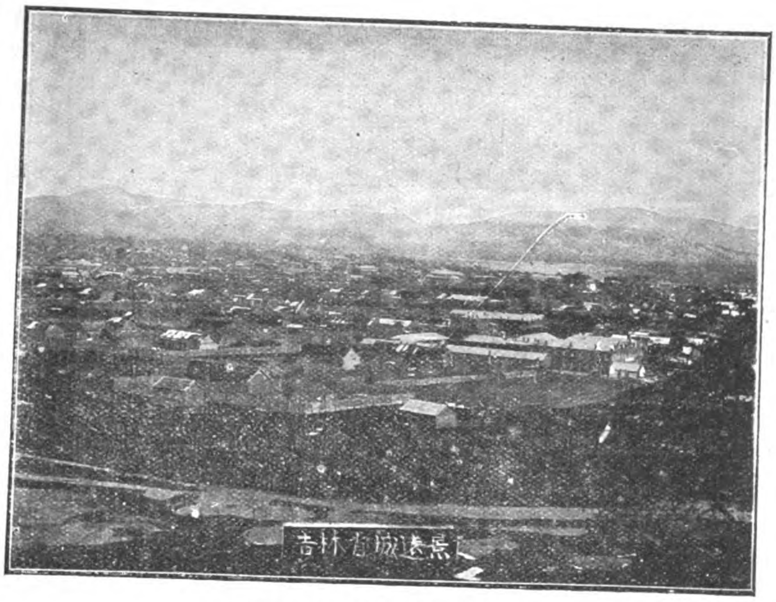
**Tientsin, May 1st, 1915.** **The Tientsin-Pukow Railway Administration.**

# 中華民國政府吉長鐵路行車時刻表

# CHINESE GOVERNMENT RAILWAYS KIRIN-CHANGCHUN LINE.

## TIME TABLE.

| DOWN TRAINS Daily Mixed | DOWN TRAINS Daily Mail | | STATIONS. | | UP TRAINS Daily Mail | UP TRAINS Daily Mixed |
|---|---|---|---|---|---|---|
| P.M. | A.M. | | | | P.M. | A.M. |
| 2.30 | 7.30 | dept. | TOUTAOKOU | arr. | 6.25 | 10.47 |
| 2.38 | 7.38 | arr. | CHANGCHUN | dept. | 6.15 | 10.37 |
| 2.43 | 7.41 | dept. | | arr. | 6.10 | 10.31 |
| 3.20 | 8.12 | arr. | KALUN | dept. | 5.40 | 9.57 |
| 3.25 | 8.14 | dept. | | arr. | 5.38 | 9.55 |
| 3.58 | 8.46 | arr. | YINMAHO | dept. | 5.06 | 9.22 |
| 4.02 | 8.48 | dept. | | arr. | 5.04 | 9.20 |
| 4.17 | 9.02 | arr. | HSIACHIUTAI | dept. | 4.50 | 9.05 |
| 4.22 | 9.04 | dept. | | arr. | 4.48 | 9.03 |
| 4.34 | 9.16 | arr. | YINGCHENGTZE | dept. | 4.36 | 8.50 |
| 4.38 | 9.18 | dept. | | arr. | 4.33 | 8.48 |
| 5.03 | 9.40 | arr. | TUMENLING | dept. | 4.12 | 8.24 |
| 5.13 | 9.50 | dept. | | arr. | 4.06 | 8.18 |
| | | arr. | CHAOCHIATIEN | dept. | 3.46 | 7.58 |
| 5.33 | 10.10 | dept. | | arr. | | |
| 5.57 | 10.31 | arr. | HUAPICHANG | dept. | 3.24 | 7.23 |
| 6.02 | 10.33 | dept. | | arr. | 3.22 | 7.20 |
| 6.18 | 10.46 | arr. | KUTIENTZE | dept. | 3.08 | 7.04 |
| 6.20 | 10.47 | dept. | | arr. | 3.07 | 7.03 |
| 6.38 | 11.03 | arr. | KIUCHAN | dept. | 2.52 | 6.45 |
| 6.43 | 11.05 | dept. | | arr. | 2.50 | 6.42 |
| 7.03 | 11.25 | arr. | KIRIN | dept. | 2.30 | 6.20 |



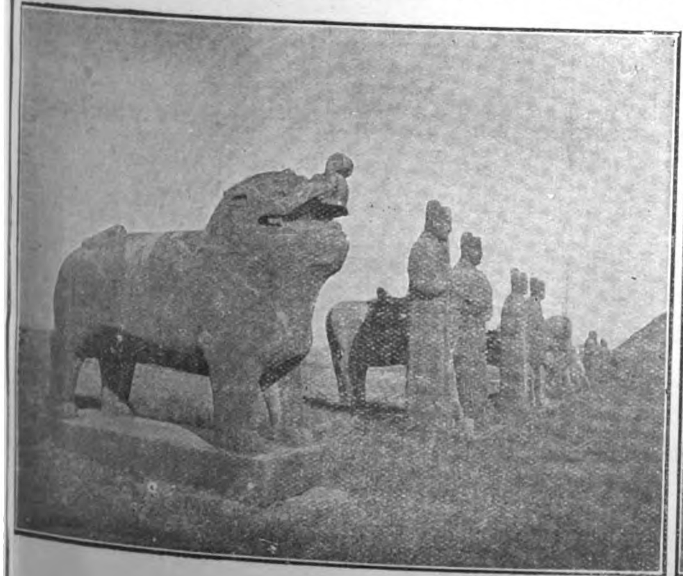

BIRD'S EYE VIEW OF KIRIN CITY

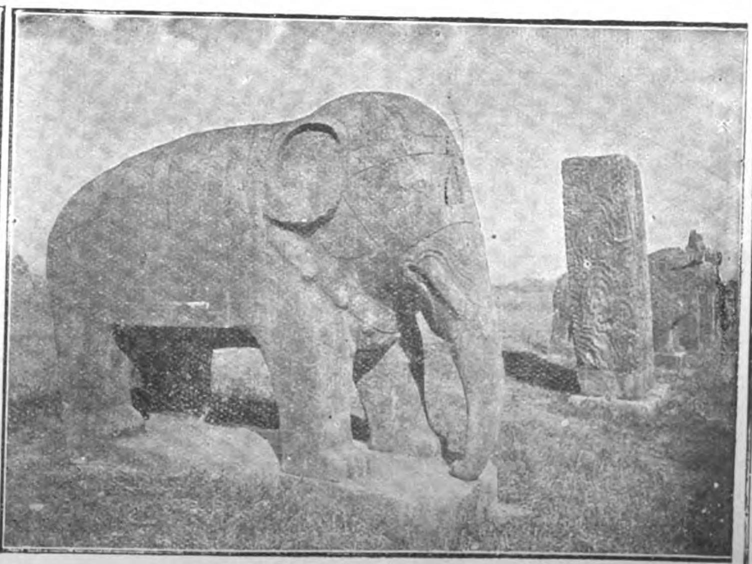
NOTICE:—"dept."=Departure. "arr."=Arrival.
1st May, 1915, and until further notice.

# THE PIENLO RAILWAY

## (KAIFENG-FU TO HONANFU)

## "THE FIRST SECTION OF THE PROJECTED CENTRAL TRUNKLINE"



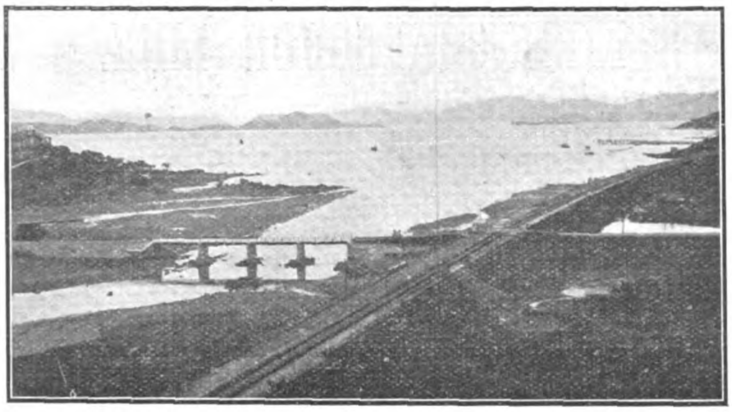


THE SUNG TOMBS NEAR KAIFENG-FU ON THE PIENLO RAILWAY.

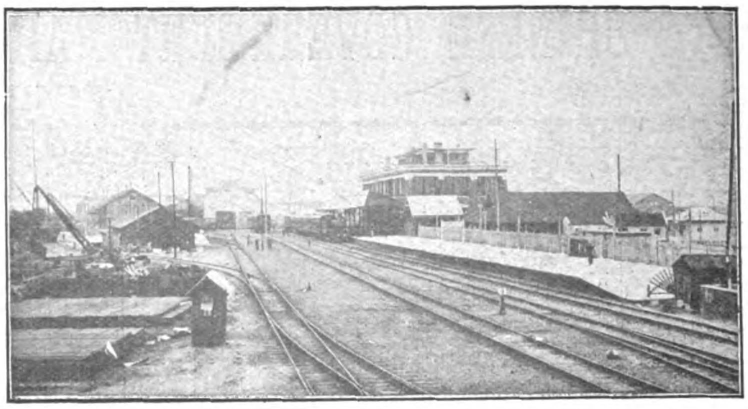
The line connects with the through service of the Peking-Hankow Railway at Tcheng Tchéou, enabling the traveller to visit Kaifengfu, the provincial capital of Honan, and the old capital of the Empire at Honanfu.

# CANTON-KOWLOON RAILWAY

**VIEWS ON THE BRITISH SECTION (22 MILES)** **VIEWS ON THE CHINESE SECTION, 89 MILES. (Chinese Government Railways)**



CANTON-KOWLOON RAILWAY—APPROACH TO KOWLOON



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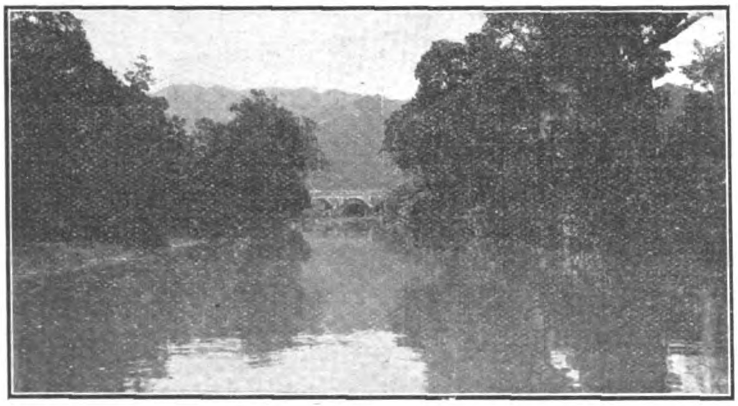
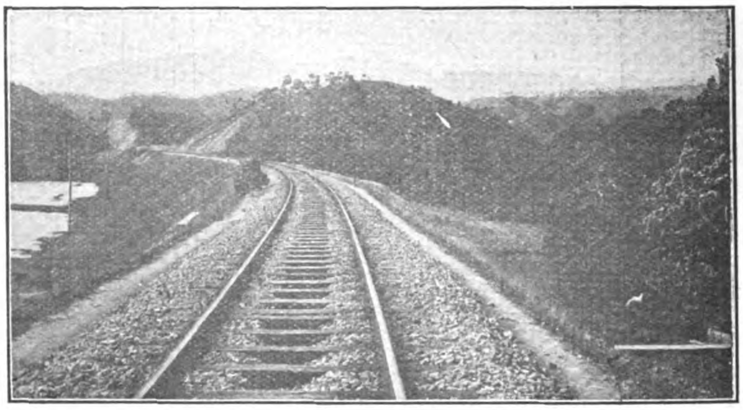


CANTON-KOWLOON RAILWAY—SCENE ALONG ROUTE



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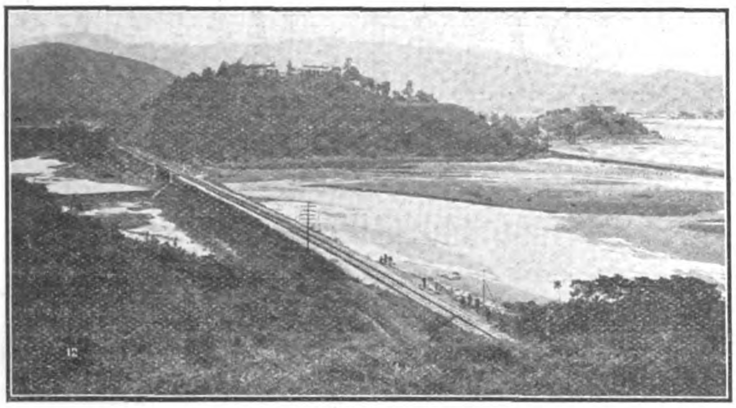
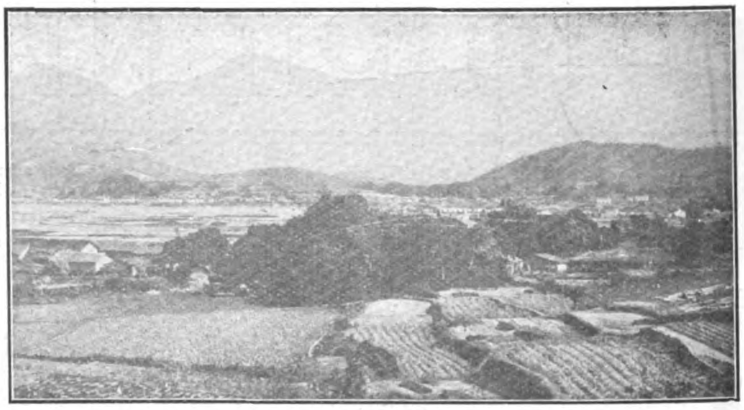


CANTON-KOWLOON RAILWAY—CROSSING TIDE FLATS



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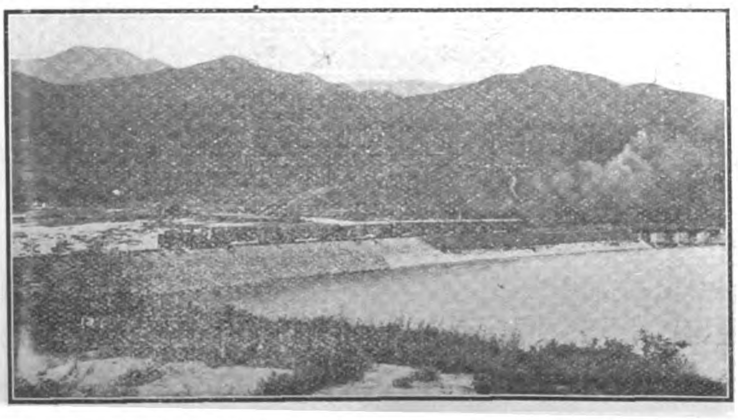
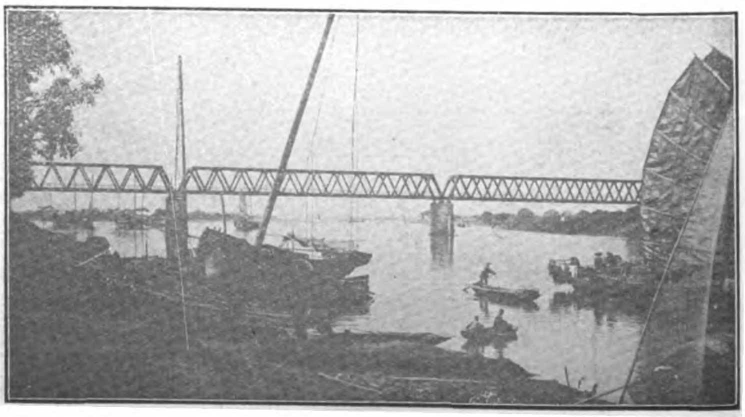


CANTON-KOWLOON RAILWAY—EMBANKMENT APPROACH TO BRIDGE



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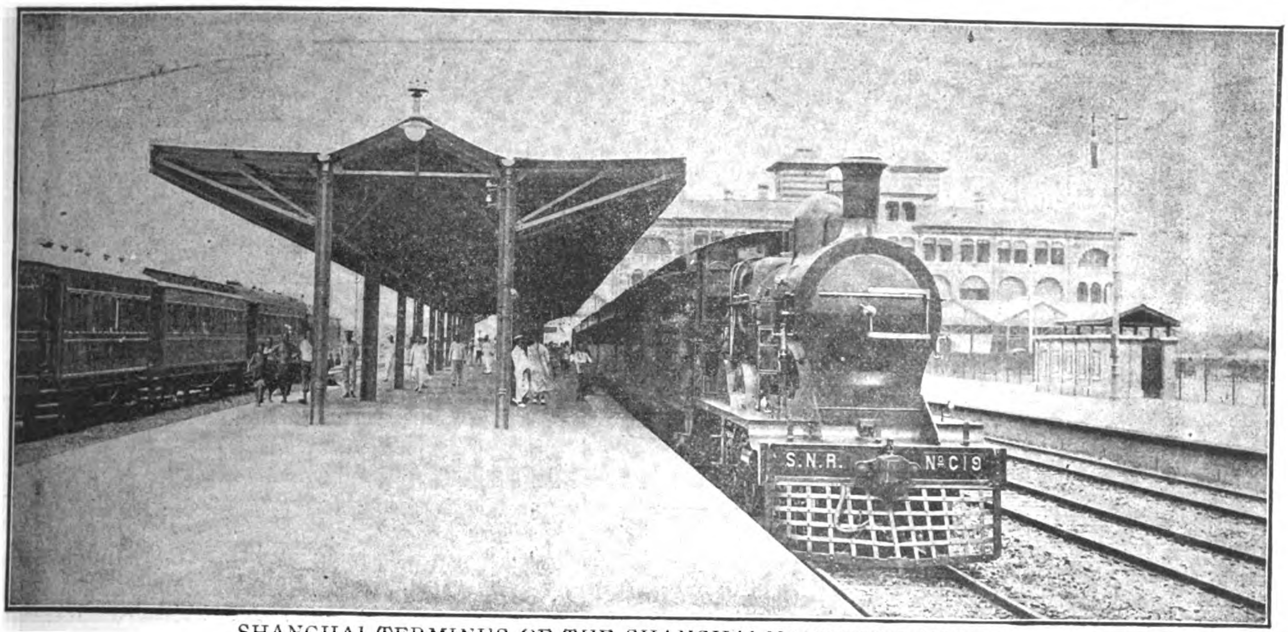


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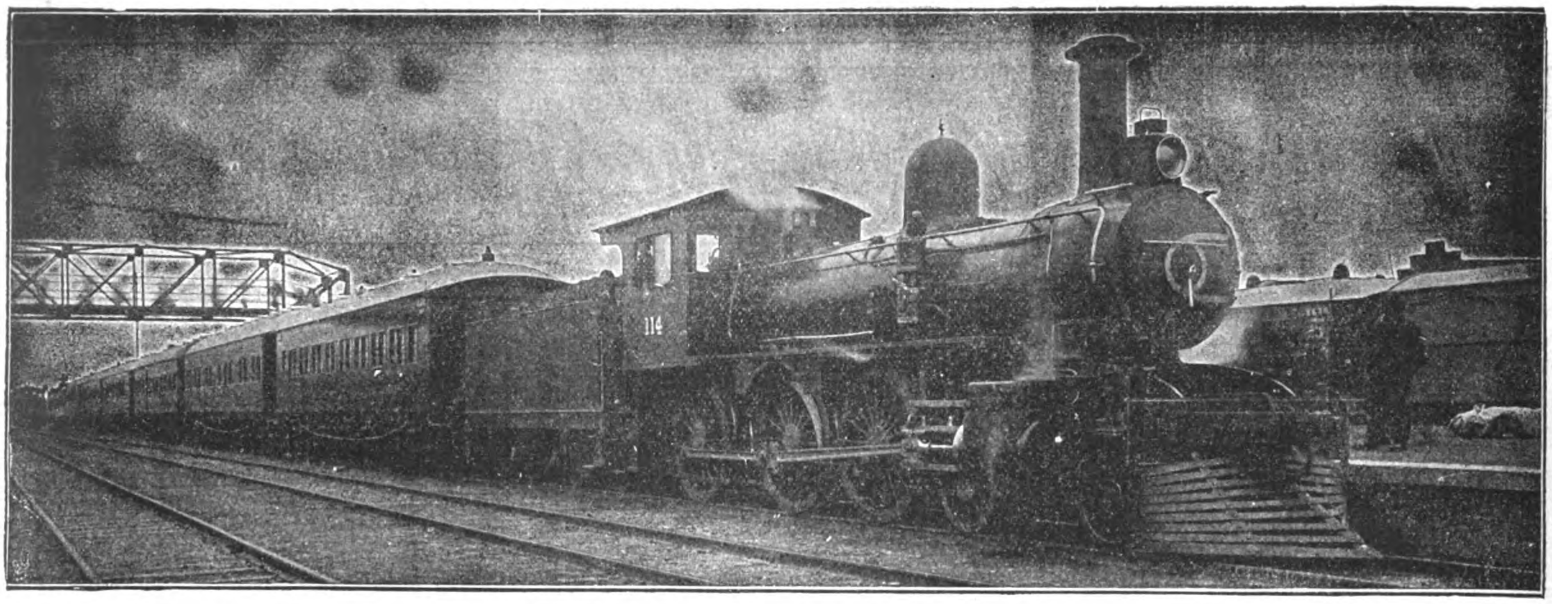

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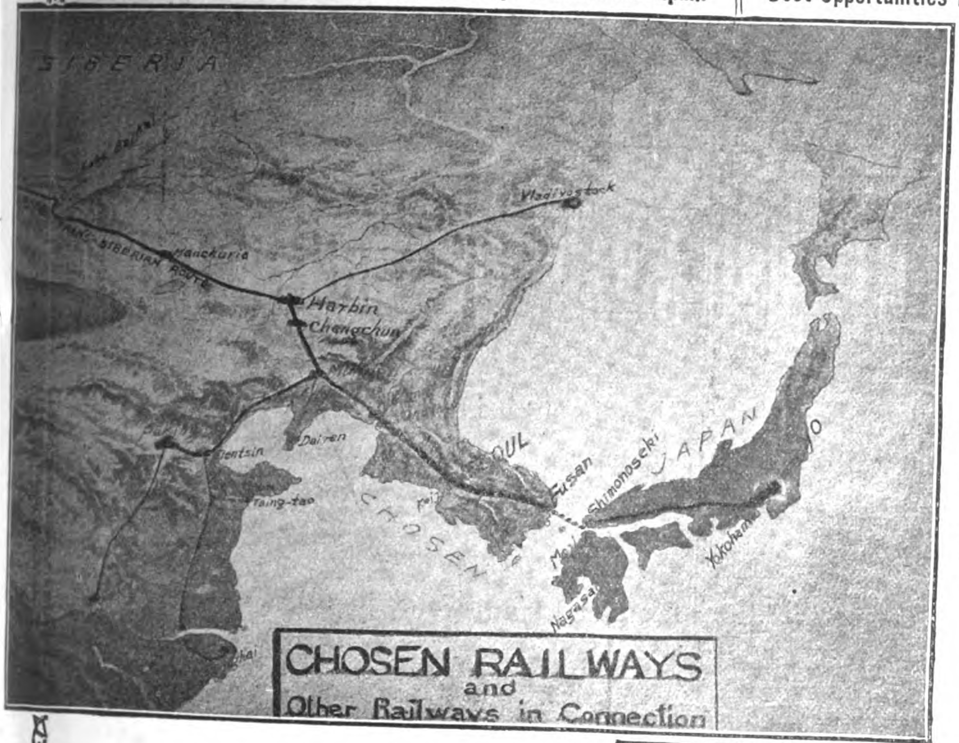


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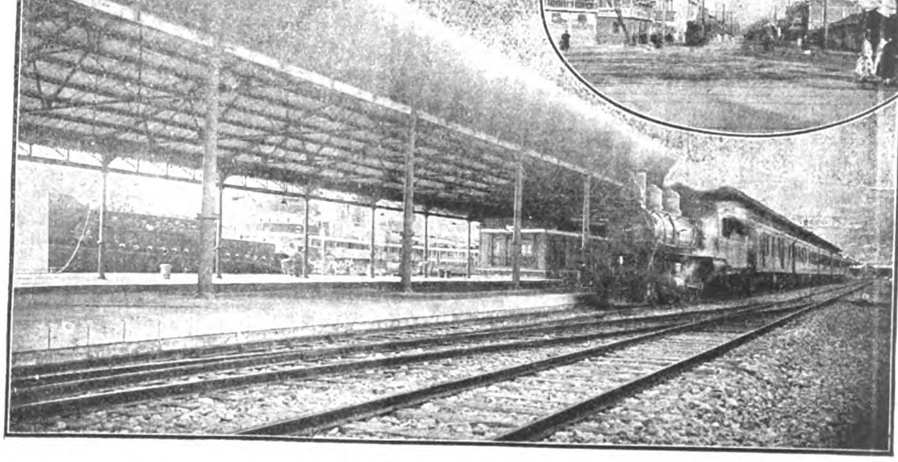

Fusan Pier

A scene in Keijyo (Seoul)

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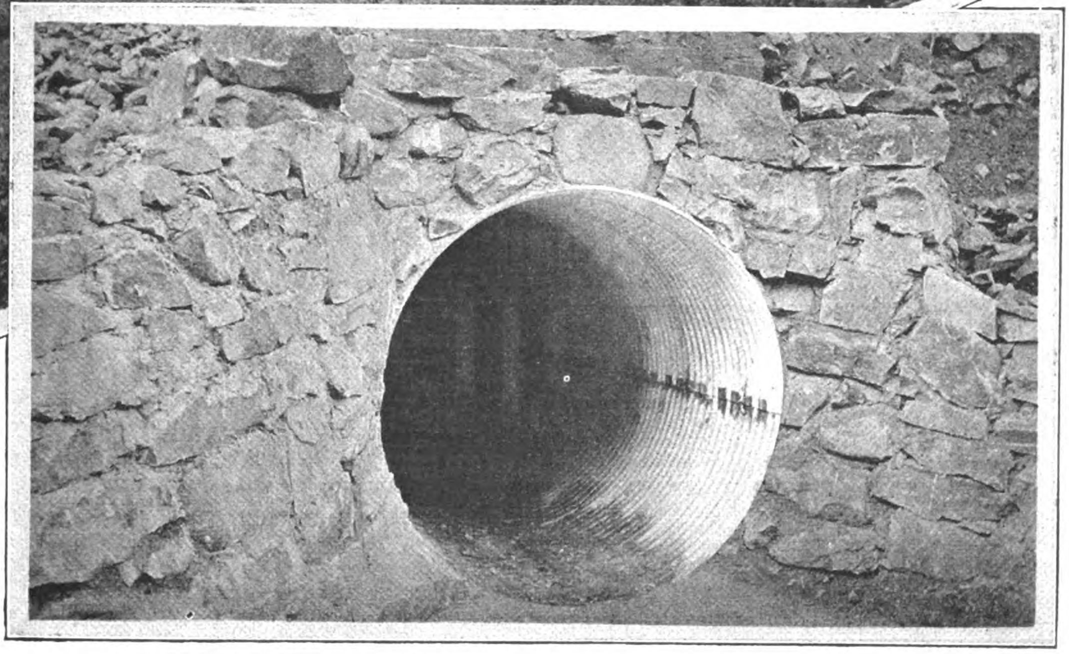

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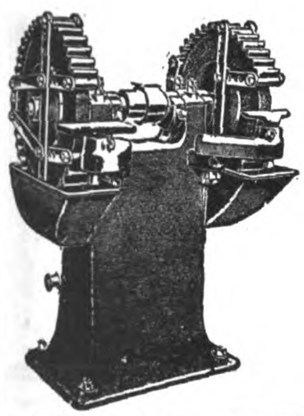

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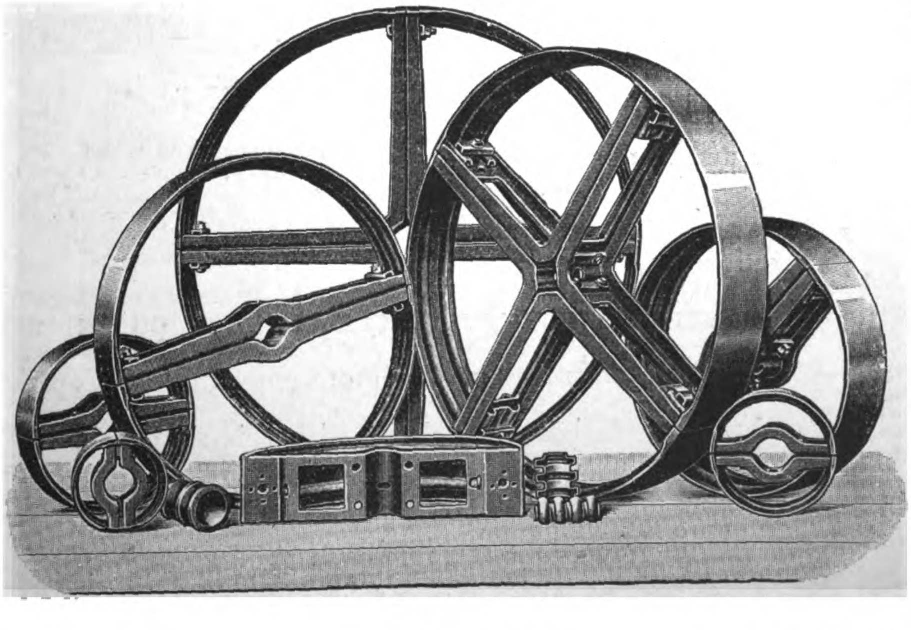

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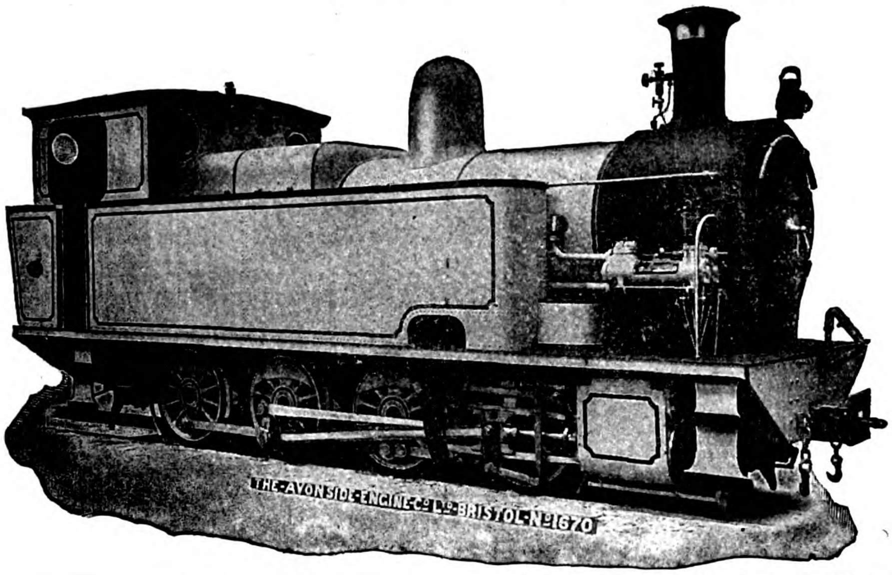


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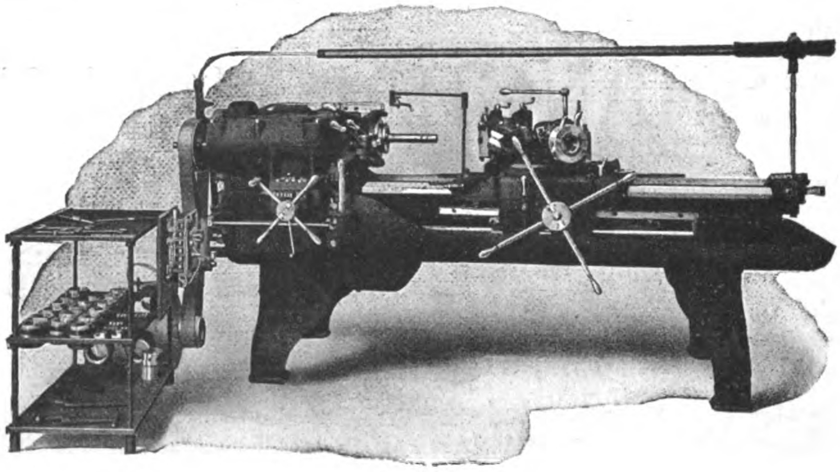

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# THE FAR EASTERN REVIEW

COMMERCE :-: ENGINEERING :-: FINANCE

VOL. XII. SHANGHAI, JANUARY, 1916 No. 8

# END THE PHILIPPINE MUDDLE!

## America is Bungling and Botching by Political Partizanship a National Task Which Can and Should Be Taken Out of Politics

[BY PATRICK GALLAGHER, EDITOR OF THE FAR EASTERN BUREAU; FOUNDER AND FIRST EDITOR OF THE PHILIPPINES FREE PRESS]

We Americans are making a sorry mess of our opportunities in the Philippines. A national task which cries out to us from across the Pacific is being bungled and botched because, instead of approaching it in a national spirit and applying to it the wisdom, the experience, the imagination, the courage, the capacity which we possess in abundance, we are discouraging and disgusting ourselves and disconcerting and disappointing our Filipino friends through blunders born and fostered by political partizanship. Unless we are willing to open our eyes to the truth, to see and to acknowledge our error, to recognize the one possible remedy and to adopt it, the ambitious undertaking which we shouldered—largely by accident and, perhaps, too light-heartedly —seventeen years ago, is doomed to dismal failure.

We have just witnessed the unpleasant spectacle of a distinguished and unquestionably sincere cabinet officer charging a former President with partizan bias, and the former President's plea in justification. Other less distinguished, less sincere political controversialists damn or deify the acts of our present administration in the Philippines; the bewildered American having no special means of information on the subject wonders which side is right, which side is telling the truth and which side is not? The question is very easily answered.

**Neither side is telling all the truth. In this matter of our present and past government of the Philippines both sides are fundamentally wrong.**

For seventeen years the party out of power, if not the one in control, has made a political issue of the Philippines. Possibly, at first, that could not be avoided. But it could, and should have been avoided in the framing or in the amending of the Philippine organic act. "It is never too late to mend." We can end our muddling, our blundering in the Philippines if American disgust over the present unsavory situation concentrates behind a demand that our national task in the Philippines be lifted out of the whirlpool of politics so that we may do the work that still remains to be done as thoroughly and as expeditiously as possible.

Mr. Taft speaks with honest pride, with commendable admission of his personal interest in our unfinished Philippine undertaking. He labored well for his country, for the Filipinos, at Manila as the first and only civil governor—the more imposing title, "Governor-General" he helped bestow upon his successors—all, without exception, honorable, able men. Mr. Taft, General Wright, Judge Ide, General Smith, Mr. Forbes—the nominees of three successive Republican administrations—I do believe gave the best that was in them to the performance of difficult, sometimes heart-breaking work at the Ayuntamiento and Malacanang, Manila. I am just as sure that Mr. Francis Burton Harrison is giving the best that is in him, now, as the Democratic nominee at Manila. They are all sincere, able, honorable men. But all, to my knowledge, have made mistakes.

Mr. Taft very properly blames Mr. Harrison for not heeding sufficiently the advice of experienced American officials, long on the ground, and for too summarily (in some cases) and most unfortunately (in others) displacing able and successful pioneer civil servants before actual experience of the Manila governmental atmosphere could come to the aid of his better judgment and assist him to avoid mistakes, injustice. Well, so, too, did Mr. Taft err when he first went to Manila, ultimately to build well and wisely, to win an international reputation which no patriotic American will begrudge him. General Arthur MacArthur had very strong views on this subject, and I am quite sure that Mr. Taft—honorable, manly to a fault—wiser through experience, will be among the first to admit that in at least some things MacArthur was right and he was wrong.

Mr. Taft blames Mr. Harrison for adopting too readily the views of Messrs. Quezon and Osmena, while (very fairly and frankly) he commends one of Mr. Harrison's acts in direct opposition to the will of his Filipino associates. Before Messrs. Quezon and Osmena (as a lineal and inevitable result of Mr. Taft's own policy in the Philippines as civil governor and, later, at Washington as secretary of war and President, and by right of their popularity and the polled votes of the Filipino people) became political powers in the islands, the late Benito Legarda and T. H. Pardo de Tavera were utilized by Mr. Taft and his successors in much the same way. I have a vivid recollection of incidents of importance where good and honest American advice was over-ruled or ignored to placate the self-constituted representatives of the Federal Party—men whose title to Filipino leadership was so dubious that the first political typhoon blew them into oblivion. At least, Mr. Harrison's Filipino associates have the merit of being representative, according to our American standards; while in justice to Mr. Taft it must be said that he had to make the most of the most tractable, available material.

All these charges and counter-charges are susceptible of analysis which leads inevitably to the conclusion that much can be said upon both sides. Our government of the Philippines has not been ideal: we have flopped, blandly, from one blunder to another. We are doomed to go on blundering, muddling, "building and spoiling, spoiling to build again," until that day when the American people will surely force Congress to take the Philippines out of politics. This is as certain to happen as anything in this most uncertain world.

The utter ignorance of the average Congressman as to vital Philippine facts is amazing. Republicans, Democrats, alike with eye and ear trained to domestic political possibilities, stop off at Manila, Cebu, Iloilo and Zamboanga, "inspect conditions," absorb mountains of misinformation—usually aided by disgruntled, discharged officials—and return to Congress and their constituencies to belch forth lava which loses nothing that partizan heat can bestow. A plague upon both their houses! Many years residence in the islands, free from interested, partizan surroundings, taught me to regard these "expert" outpourings as not merely valueless but positively dangerous.

It is high time to stop theorizing, wrangling over the Philippines. While we are wasting valuable time in Congress and in the islands, coddling the Filipinos one moment, curbing and cussing them the next, our real opportunities out there are lying fallow, Philippine bonds which should be booming are as drugs in the market—vastly alluring world monopolies are crying in vain for capital. Capital will not flow into the Philippines, trade cannot thrive, until the government of the islands is put upon a businesslike, instead of upon an unstable, partizan footing. With all respect to Mr. Taft, whose breadth of vision I admire, our government of the Philippines has been at no time free from the partizan taint, however otherwise may have been intended, and despite the very laudable association of able men who were avowed, if not very pronounced, Democrats.

Here is the one possible cure for our present Philippine muddle:

Let us admit to ourselves and frankly tell the Filipinos that, while sensible of the binding character of the promises already given to concede complete Filipino independence when the Filipinos are able to sustain and defend themselves as an independent nation, **if, then, they elect to pass from under our flag**; with honor to ourselves, in view of the responsibilities which, wisely or unwisely, we have undertaken, in their own interest much more than in our interest, **we cannot—even if we desired to do so (which we do not)—name that future, possible, day of severance.** They must trust us to be just and fair, while we are bound in honor to give them a real chance to become self-governing, as we have been doing, as undoubtedly we will continue to do.

If we had advanced more rapidly and, prior to August, 1914, set up an independent Filipino commonwealth (as was advocated) under an international guarantee of neutralization, what flag would now be flying over the Philippines? The FAR EASTERN REVIEW asked this question shortly after the outbreak of the **Great Folly.** Is it not morally certain that the resultant complications would have plunged the United States into the war? This **Great Folly** has vitally affected the Philippine problem. The Filipinos, with whose aspirations I am in hearty sympathy, should step guardedly, cautiously, now, lest they make an irremediable blunder.

Let us re-organize our government of the Philippines, remembering that we have set out to do something that has never been even attempted in the previous history of the world—to nationalize (with all that means) an alien people, whose history and traditions have nothing in common with our own. Let us realize the solemn truth that we can only succeed by bending all our own national energies to the job and that, for our own credit, **we must not fail.**

Let us write into a new Philippine Bill a provision which will make the Governor-General at Manila absolute master of the situation, free from baneful partizan influence, subject to removal only for cause and after impeachment and trial, giving him an ample term—ten years or thereabouts from his accession to the governorship. Assure to the vice-governor, appointed by succeeding Washington administrations, succession to the governorship, unless removed for cause after trial and impeachment. Stabilize the Philippine service, in the interest alike of American and Filipino officials, by according fixity of tenure and retirement on pension after faithful service. If wisdom and foresight exist at Washington and Manila these things can and will be done.

Spain failed in the Philippines because she tried to govern the island from Toledo and Madrid. The intrigues, the wrangles of court and Cortes are being duplicated by us on the backstairs of the White House, in Congress, in the Press. Are we living up to our reputation for shrewdness, for capacity in government, while now we tread in the self-same blunder-blotched footsteps of Spain?

# ROADS—THE SALVATION OF CHINA

[BY ARTHUR J. MOORE-BENNETT, C.E., F.R.G.S.]

From the earliest times rulers of all countries have found it expedient and necessary to build roads, and such roads built in the Roman Empire by men who lived more than two thousand years ago are to-day found acting as the foundations of the roads on which countless thousands of men, stores, and guns are being conveyed by motor traction in the area of the armies in Northern Europe. The coming of the locomotive for some years diverted men's minds from a true appreciation of national highways, but the advent of the light steam tractor and the motor engine again focussed engineers' attention upon the adaptation of the new invention for transportation purposes. The result has been that in every continent new national highways, and roads with surfaces calculated to stand the stress of modern conditions, have been laid down. Even in such densely populated and highly developed lands as Britain and France much freight, which ten years ago was wholly handled by railways, is now being carried by motor transport with a greatly decreased ton mile cost, while in the newer countries, such as India, Canada and the United States, tractor and motor roads have been the means of opening up and developing industries which could not have been aided in any other way, and thousands of miles of these roads now exist in America alone.

Of all the great countries in the world, China is easily the worst provided with efficient means of communication, and the purpose of this article is to show how China, profiting by the lessons learnt by others—could build all the roads necessary for her interior development without borrowing from foreign countries and without enhancing her external obligations in any way.

At this time when the Western Provinces are threatening anarchy, it would be the salvation of China if she had efficient means of communication between Peking and the outlying provinces. At any time, however, it is imperative that there should be direct means of communication with the Frontier provinces both East and West in order to allow the Central Government to exercise its authority over the distant and often unruly Provincial Governments. It will be seen that while political trouble in the central Provinces can only affect the Chinese, the same trouble in those provinces which border on foreign countries may possibly jeopardize the whole country, and while its takes fifteen days or more to reach the Western Frontiers via the sea route—which involves using two foreign countries en route and which is impracticable for troops—or facing a fifty days' journey overland from the nearest Chinese port, direct com-

munication could be obtained which would bring the Western frontier within one week of Peking at less than one-fifteenth of the cost of any railway which has yet been suggested or surveyed.

Many of the Provinces which make up China are as strangers to each other for want of efficient communication, and while the ties between them and the Federal Government must of necessity be elastic a real lack of control exists in many cases merely because the people are so shut off from outside communication that they become intensely localized and have all the traits of character and feeling common to communities whose geographical position precludes social and commercial intercourse with their fellow subjects in neighboring provinces.

Again, most of the internal industries of China suffer from lack of free communication. Many industries, indeed, are impossible owing to the fact that no means of communication exist. Mining in many provinces does not pay for the same reason, and mule and camel hauls of four and five hundred miles are by no means uncommon, while certain trade routes of upwards of a thousand miles are kept open only by animal traffic over the worst trails imaginable.

The Chinese officials fail to recognize that the lack of roads has far reaching political and commercial effects, and that much of the political unrest of the last few years would not have existed had free communication between the different Provinces been opened. The Government also fails to recognize that a poverty of roads means a poverty of taxation as it does a general state of disruption and lack of work, while good roads mean development both political and commercial; and the free interchanging of ideas, resulting from communication, means a general state of well-being both for the people and the government.

In many districts of a mountainous nature—and it should be noted that fully three-fifths of the country comes under this heading—the farmers in the valleys cannot get sufficient for their cereal crops to pay the cost of growing, while their neighbours on the mountains but a few miles away cannot afford to buy sufficient rice and wheat to keep them in health, a condition of affairs resulting from an absence of roads and the cost of transport. If decent roads existed both farmers and mountain people would be better off, and both could afford to pay more taxation than is to-day possible. In certain of the mining centers this is very noticeable. For instance, in Kochiu, in Yunnan, food of every description, coal, charcoal, etc., has to be carried on mules over rough mountain tracks from twenty up to two hundred miles, and the resulting cost of bare necessities is so high that although the miners are actually well paid yet they are probably the poorest class and community in the country. This is also true of the copper areas, notably Tungchuan, where supplies of all kinds have to be carried in on mules, and the resulting copper has to be carried out 130 miles to the nearest port, over ranges of more than nine thousand feet in altitude.

Tractor or motor roads have been built in India and Canada by white and native labour at a cost of from five hundred to seven hundred and fifty pounds sterling per mile average run on long distances, and here in China such roads could be entirely built by employing criminals. For many generations China has beheaded countless prisoners for various offences, and if, instead of wasting this potential labour, she were to change the sentence to one of life long imprisonment and labour on the roads, the prisoners would be just as surely punished as by being executed and the up-keep cost need not exceed that of a picul of rice and a catty of salt per man per month, or, put in money terms, let us say two dollars fifty per month per man. Soldiers could be used as warders, and as these have to be maintained in any case the cost would not be raised on this account, and every criminal of any kind could be sentenced to labour on the road as a punishment for all offences of whatsoever kind.

Old and disabled men could be used for breaking road metal, for cooking and for cleaning quarters, and no labour of any kind need be wasted while existing prison staffs could be utilized in the work. Women offenders could be utilized making suits, etc., for working prisoners, and the whole work could be planned to give light and severe punishment as was considered necessary.

The number of offenders in a certain province in 1912 was given to the writer in confidence as being about 7,112 for the year, of which over 600 were executed, and while this does not probably represent a fair average still there must be at all times within the empire at least fifteen thousand criminals who might be used to profit by the community on road work.

The bulk of work to be done is purely manual in character, and would not require either the employment of expensive foreign aid or tools, although it would probably pay the government to get the work organized and started by some very competent organizer and engineer who knew both the country and people; and while there might not be sufficient skilled bridge builders, masons and carpenters among the criminals employed and at the disposal of the authorities such men could probably be hired at a very much lower cost than has been found possible in foreign lands.

The actual cost per mile would, of course, vary enormously with the varying conditions met with, but for a twenty foot macadamized tractor road, with bridges and culverts to take a limit of five ton axle loads and a surface to stand speeds of five ton loaded tractors at six miles per hour, or light cars at fifteen miles per hour, the cost of labour and tools for average miles could probably be kept down to less than three thousand dollars, although bridge work might increase the cost in certain sections.

It should be borne in mind that efficient roads are now in operation in Western Canada and Burma having grades of one in eleven, and such grades permit of lines being chosen which would be utterly impossible for any other form of mechanical traction, and whilst such steep grades are not to be recommended for all the year transport, grades of one in fifteen or sixteen have been found to give excellent results in countries having as great an annual rainfall as any part of China.

It would, of course, be necessary to guard such roads from being used by the narrow tyred native cart, which is calculated to ruin any road surface in the world, and it would be essential for the government to have the right to take any land sites necessary for right of way which its engineers declared necessary, otherwise the costs would be prohibitive. Inasmuch as the passage of such a road would enhance the value of the surrounding property the hardship would not be great while the good conferred on the community would be immeasurable.

In well surveyed main trunk highways it would not be necessary or desirable to follow the present plan of making the road twist and turn in order to touch every small village enroute, but the easiest and shortest line would be taken between the terminii, and short feeder roads would be built to the main road from such towns, cities, and villages as desired direct communication, while mining centers and industrial works of all kinds could construct branch roads to their works.

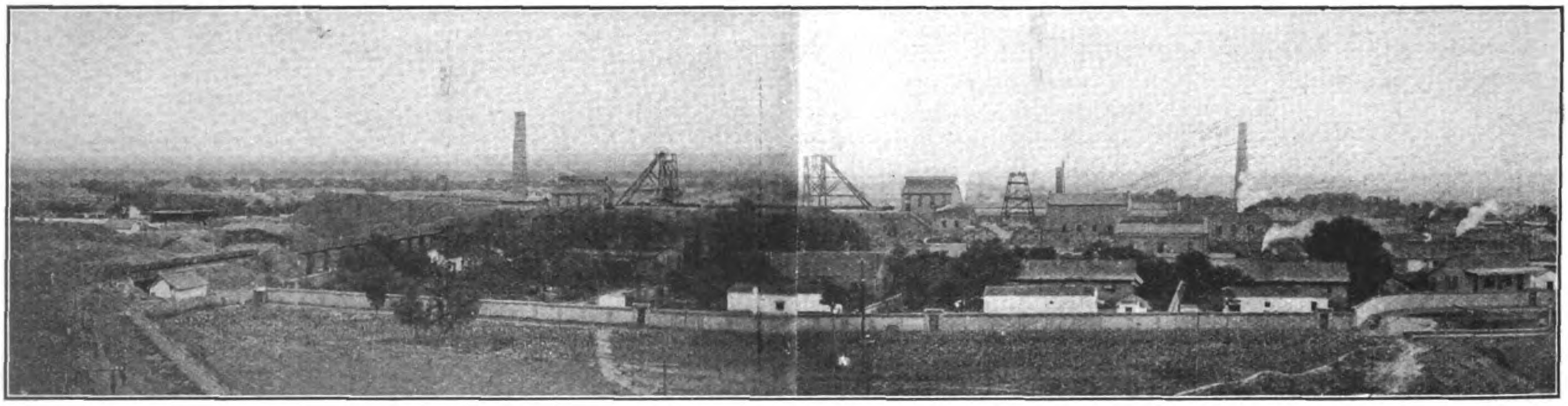
The cost of such roads should be borne partly by the Federal government, which would derive direct political aid from them, partly by the provincial governments, through which they passed as these governments would derive direct taxation gains owing to the developments the roads would make possible, and partly by the prefectural districts actually served, as these would benefit by enhanced land values. And every government, both federal and provincial, as well as municipal, should be ordered to make grants-in-aid for the annual up-keep of such roads, or, if this is not considered possible in China, then toll charges should be made, or every vehicle be licensed, and these taxes used for up-keep. Such a road built from Hankow or Wuchang, going via Yochow, Shenchowfu, Chenyuan, Kweiyang, to Yunnanfu or Talifu would make it possible for fast light cars to do the distance in less than a week, while troops could be transported in regulation pattern three ton lorries at the rate of two hundred miles per day as against less than thirty miles per day by forced marches, and the whole cost of such a road need not exceed £300,000, including costs of the necessary rock crushing plant and road rollers.

Direct West or South-west of Peking into Shansi, Shensi and Szechuan the country is eminently adapted for such roads, and the whole country only needs such communications to enable it to develop as other countries far less gifted with natural resources have done.

Motor tractors and lorries are not expensive either in first cost or up-keep, and if these are objected to, then steam tractors of similar pattern to those which are doing such good service in Europe to-day can be had at relatively low cost and be capable of long life. Coal and coke being plentiful in most provinces of China their fuel and up-keep costs would probably be even lower than motor lorries. In France and Britain to-day goods can be transported by road cheaper than by train, and government loads up to eighty-five tons per piece have been handled on ordinary British roads during the last year by steam tractors. If this war has proved nothing else it has proven that the road lorry and tractor as now constructed can go over practically any surface, can extricate itself from almost any shell crater and ditch, and generally can be handled under the most trying conditions possible at a minimum of cost, and after the war Europe at least will owe more probably to this, the newest form of transport, than to any one other invention of recent years.

China built the great wall, and if this has to some extent outlived its usefulness still it proved itself a bulwark against the wild northern tribes for many a generation, and if China can build a work which is one of the seven wonders of the world then surely China to save herself from foreign aggression, to help her people to develop and to increase her richness can at this time, with two thousand years more education and experience than her predecessors of Chin-shih Hwang-ti's time, build the roads which are as necessary for her good government as they are for her commercial development.

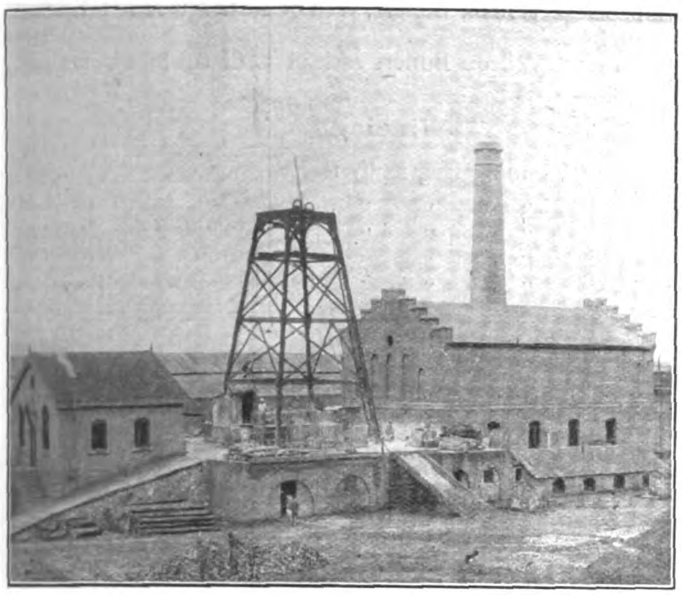
Different men see China's needs in various aspects, but the writer believes that many of this country's problems could be solved if good roads were given the people, and commercial, political, and social intercourse were secured between the many races and tribes that go to form this conglomeration of States. Certainly much distrust and suspicion of motives that now exists could be swept away, and many industries which have starved for lack of roads could be resuscitated, while the central government could assume a far more direct control over far off territory than would be possible by any other means. China is not capable of building a vast system of costly railways, and pledging her money to build them and so mortgaging her executive freedom to foreign nations is not truly helping her to develop in her own interests, but showing her how to adapt foreign inventions to her necessities and conditions will do far more both to aid her in developing and ruling the country and also in appreciating the use of foreign advice and experience.



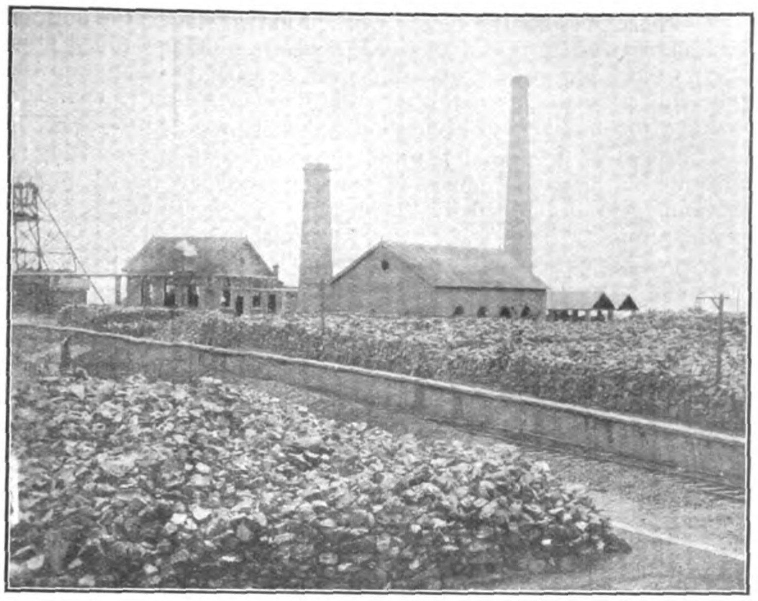
General view looking from North, showing No. 2 pit on left, No. 3 and No. 1 pits on right

# PEKIN SYNDICATE'S HONAN MINE

The Pekin Syndicate Limited was formed in March, 1897, for the purpose of obtaining and developing Concessions for Mining, Railway, and other undertakings in China. A contract was signed at Peking on 21st June, 1898, in connection with operations of coal mining on an extensive scale in North Honan. After the usual preliminaries a permit was granted by the Chinese Government to commence mining operations at a place selected by the Syndicate in the District of Hsiu Wu Hsien in the Prefecture of Huai King. Principally owing to the Boxer Rising in 1900 little work was done until May, 1902, when the preliminary survey was made. Sinking operations were commenced at the end of 1902 but had not proceeded very far before water difficulties were encountered. The sinking of a second shaft was commenced in the early part of 1903. Water was also encountered in such quantities that it was found necessary to abandon all further sinking pending the arrival of additional boiler and pumping plant. On resuming operations further quantities of water were met with and no less than 150,000 gallons of water were flowing into the mines per hour. In 1907, what are at present known as Nos. 4 and 5 Shafts were commenced and successfully carried down to the coal, which was reached in August of that year. Subsequently operations were recommenced at the shafts which had been temporarily abandoned, and in 1911 a total output of about 1,000 tons per day was obtained. The output gradually increased to 2,000 tons per day when in September, 1912, No. 4 Pit, which was then producing 875 tons per day, was flooded: the water rising some considerable distance up the shaft. The estimated amount of water at the time of the in-burst was 250,000 gallons per hour, but the flow gradually decreased. This disaster was followed by another inburst of water in April, 1913, this time in No. 2 Pit which was then producing 700 tons per day. Both these Pits had, therefore, to be temporarily abandoned, which left only one producing Pit, No 6, the output of which was under 500 tons per day. Steps were immediately taken to increase the output of No. 6 Pit, and at the same time work was commenced in connection with a new shaft (Machien Pit), about one mile distant West of the other shafts. No. 4 Shaft was recovered in October, 1913, and is now producing 500-600 tons per day. Machien shaft is also producing coal, and the mines are now capable of producing 3000-4000 tons per day. Water continues to flow into the Mines, but this is now comfortably dealt with by the large Hathorn Davey, and other pumps. The Syndicate's coal is sold by the Fu Chung Corporation which was brought into active operation on the 1st June, 1915, for the purpose of handling the sales and combining the interests of the local native mining concerns. The coal is sold in large quantities in the Provinces of Honan and Chili. There is also a ready market for the lump and cobbles in the various Treaty Ports in China. The Tao-Ching Railway built by Messrs. S. Pearson & Sons for the Syndicate connects the mines with the Pekin-Hankow Railway, and also with the Wei River at the Eastern terminus. Coal is shipped in large quantities along the Wei River and Grand Canal, and the Fu Chung Corporation maintain a fleet of Chinese shallow-draft boats running between Taokou and Tientsin, carrying coal to the latter port and returning with machinery, plant, stores, etc., for the mines and the Tao-Ching Railway.



No. 3 Pit Main Pumping Station



No. 4 Pit and Loading Wharf

## Geological Conditions of the Honan Coalfield

The coalfield of Honan is situated at the base of the Tai-Hang Mountain Range, which rises abruptly from the Honan Plains forming the plateau of Shansi. The succession of strata in the district is briefly as follows:—

1. A recent deposit of alluvium yellow and red clays with conglomerate beds up to a thickness of 250 feet. The conglomerate beds near the base are mostly water bearing.
2. Yellowish arenaceous clay shales with beds of yellow and brown vertically cleaved sandstones. The uebercarbons of Richtofen which in Shansi are of a thickness of 1,000 feet are in the case of Honan 90 feet.
3. *Coal Measures.*

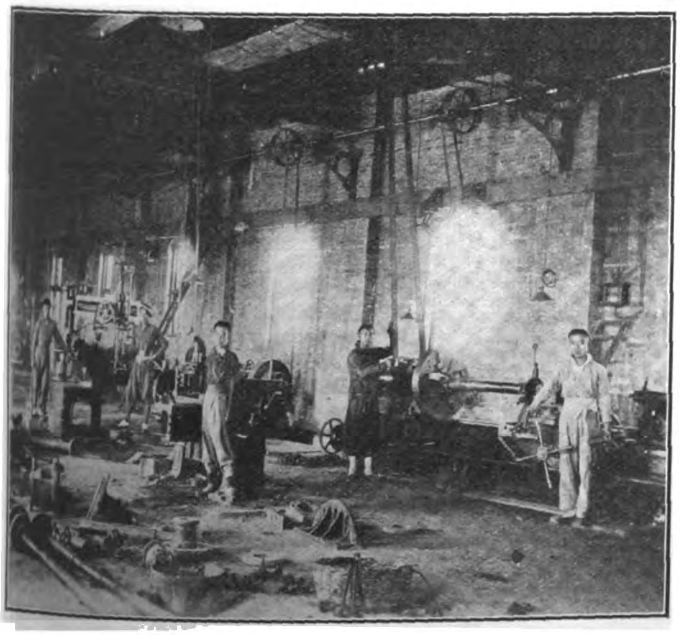
| | feet |
|---|---|
| *Upper Series* | |
| Brown and Green Sandstone .. .. .. .. | 60 |
| Grey and Blue Shales .. .. .. .. .. | 20 |
| *Middle Series* | |
| Brown, Blue, and Grey Sandstones .. .. .. | 60 |
| Black clay, Shales, and Sandstones .. .. .. | 40 |
| Chao-Mei. (Coal Seam is generally present) varying thickness up to .. .. .. .. .. .. | 1 |
| *Lower Series* | |
| Black and Grey Sandstones .. .. .. .. | 60 |
| Black Shales, and Sandstone bands .. .. .. | 10 |
| Coal measures strata above the main seam about | 251 ft. |

4. Main seam of coal, thickness varies from 6 ft. to 30 ft., average, say .. .. .. .. 18 Feet
5 Clay Shales, and Sandstones: the Shales being Carbonaceous near the top.. .. .. .. 250 Feet
6. Flint Limestone, massive dark blue or grey Limestone, contains nodules of black flints .. 30 Feet
7. Vertically cleaved variegated sandstones with brownish clay shales, and at the base white clay shales with bands of iron ore .. .. .. 80 Feet
8. Carbonaceous Limestone: grey and blue with purple bands at 1,000 feet down in the series .. 2,000 Feet

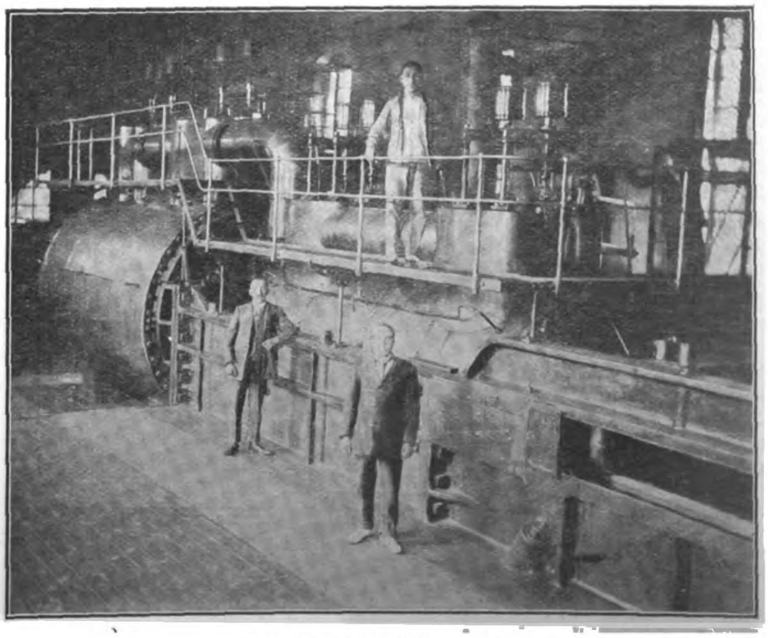
## Method of Working

The workings have been laid out on the "Pillar" system. All working places are secured by timber sets, the legs being notched into the end of the bars, and the feet sunk into the floor.

In coal where the top part is hard and the bottom soft, the bottom portion of the seam is worked first, undercutting being done in the soft coal which forms a good "pricking."



Section of Machine Shop



Hawthorn Davey Pumps

Where possible the face is worked in two stages, the bottom part being worked up to 20 feet in advance of the top. This allows the top coal to give, and makes it easier to wedge down. The fullest advantage is taken of the cleavages in the coal for cutting in, "nicking" or giving loose sides to wedge off.

Wherever it is possible to obtain round coal, undercutting is adopted by the native miner, who is fully aware of the pecuniary advantage to be gained by the production of "Lump" coal as compared to "Mixed."

Where the seam is soft throughout or where the hard coal lies at the bottom, or the seam is a mixture of thin hard bands with intervening layers of friable coal, the roads are driven in the upper part next the roof, followed up by a "Canch" out in the roof to make height.

### Plant

Owing to the large amount of water to be dealt with, a large proportion of the Plant comprises pumps of various types. At the main Pumping Station a large Cornish Pump by Messrs. Hathorn Davey & Co. has been installed. The main features of this Pump are as follows:—

Diameter of H. P. Piston—7 feet.
„ „ L. P. Piston—9 feet 2 inches.
Stroke—10 feet.
Speed—Average 7 Strokes per minute.
Capacity—440 gallons per stroke or 184,800 gallons per hour.
Steam pressure—75 lbs. per sq. inch.
Diameter of Delivery Pipe—21½ inches.

The Engine is worked on the drop valve system governed by the Davey Patent Differential Gear and has a Davey Trip Gear which automatically stops the Engine should the stroke exceed the designed length. The Piston Rod is connected by means of compression rods to the Quadrants, which give the spears a lifting motion. The Spear Rods are 20 inches square, and are coupled to rams by means of iron shoes. The Rams are bronze cased having a diameter of 26 inches. The Ram cases are 11 feet by 3 ft 8 in. with brass neck bushes and brass glands and stand on cast iron foot steps 5 ft 5 in. by 4 inches. There are 52 Single Drop Valves, each valve having a diameter of 9 3-4 inches. The Suction Pipe is 16 feet long, and the nozzle is 4 ft. by 3 feet. A Surface Condenser has been installed in connection with this pump. In addition to the Hathorn Davey Pump the following Pumps are in use or standing as spare:—

8 Evans Horizontal Ram Pumps, capacity 30,000 gallons each per hour.
2 Worthington Jet Condensing Pumps, capacity 45,000 gallons each per hour.
4 Evans Differential Sinking Pumps, capacity 20,000 gallons each per hour.
8 Evans Cornish Sinking Pumps, capacity 1,000 gallons each per hour.
2 Weirs Boiler Feed Pumps, capacity 2,700 gallons each per hour.
2 Weirs Boiler Feed Pumps, capacity 6,670 gallons each per hour.
2 Worthington Duplex Pumps.
2 Worthington Horizontal Pumps.
1 Tangye Pump.

In addition to the above the Syndicate have installed the following Electrical Pumping Plant:—

4 Three stage Turbine Pumps by Weise & Monski, each capable of dealing with 75,000 gallons of water per hour against a total head of 700 feet. These Pumps are direct coupled to Siemens Protected Type Slip Ring Induction Motors, each with an output of 400 B.H.P. at 1485 Revs. per. min. 3,000 Volts, 50 Cycles.

### Boilers

The main Boiler Plant consists of:—

4 Lancashire Boilers, each of 1,000 square feet Heating Surface.
12 Babcock & Wilcox Boilers, each of 1,797 square feet Heating Surface.
2 Babcock & Wilcox Boilers, each of 2,852 square feet Heating Surface.
2 Babcock & Wilcox Boilers each of 5,764 square feet Heating Surface.

### Winding Engines

1 Winding Engine by R. Daglish & Co.
1 „ „ „ London Bros.
1 „ „ „ Barclay, Son & Co.
1 „ „ „ Cowlishaw, Walker & Co.
1 „ „ „ Allis Chalmers & Co.

also

1 Steam Winch.
2 Crab Winches by Evans & Co.

### Electrical Plant

The Electric Lighting Plant comprises 3 D. Generators each 40 K. W. 450 Volts by Siemen Bros. Dynamo Works, Ltd., direct coupled to 3 Vertical High Speed Engines by Ransomes, Simms & Jeffries.

The Electric Power Plant consists of 3 Generating Sets, 3,000 Volts, 125/147 K. W. by Mather and Platt, direct coupled to 3 Vertical Engines. One Main Switchboard with all necessary control gear.

In addition to the above the Syndicate have installed the following additional Power Plant:—

3 Siemens Three Phase Base Type. Alternators each with Shunt wound Exciter. Output 350 K.W. each at 3,000 Volts direct coupled to Browett-Lindley two crank compound, forced lubrication, enclosed vertical double acting Steam Engines, each with steam separator and steam trap.

3 20 B.H.P. Slip Ring Three Phase, protected type Induction Motors, each provided with protected Rotor starters, and switches. These Motors are wound for 500 Volts. Transformers are provided for reducing the voltage from 3,000 to 500.

3 Ejector Condensers by Ledward & Beckett, each to deal with 10,000 lbs. exhaust steam per hour, and maintain 26" Vacum with Barometer at 30" and cooling water at 750 F. 60,000 Gallons of cooling water required per hour, each. Each Condenser complete with Centrifugal Pump designed for total head of 30 feet.

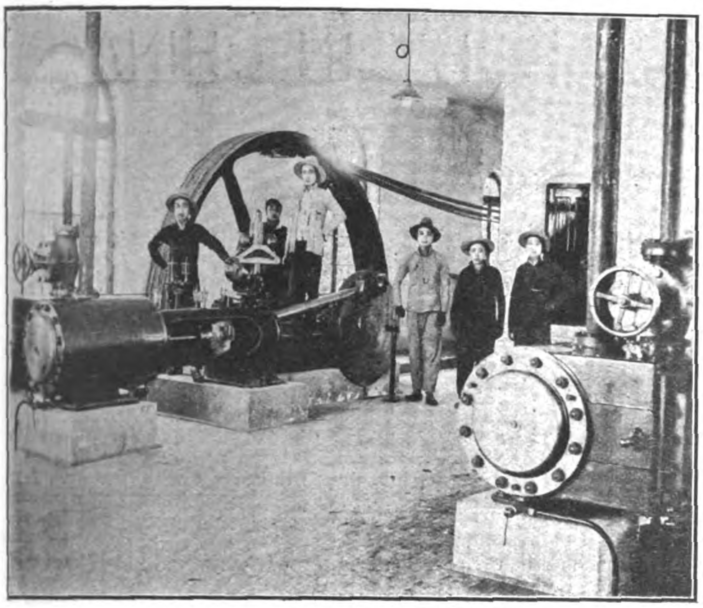
### Brickworks

In connection with the mines the Syndicate have installed an up to date brick making plant capable of producing 1,000 wire cut bricks per day. The plant comprises 1 Brickmaking Machine, Pan, etc.

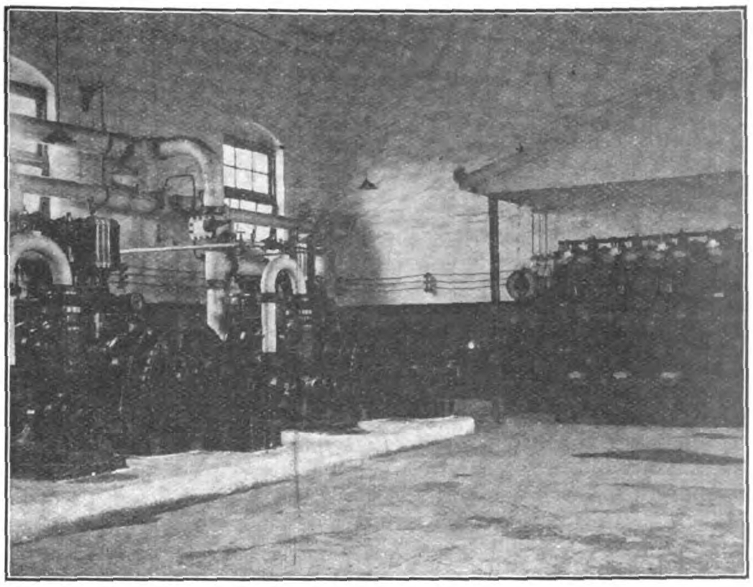
2 Drying Sheds, and 1 four-department tunnel dryer.
4 Down Draught Kilns.
7 Chinese Kilns.
1 Kiln for Fire Clay Goods.
2 Lime Kilns.

The coal produced by the Syndicate is a semi-anthracite, and being practically smokeless is very suitable for industrial and marine purposes, but in this connection the best results are obtained when used in Boilers provided with suitable draught. The following is a result of a test recently made on a small battery consisting of 4 Babcock and Wilcox Boilers working together:—

| | |
|---|---|
| Start of the Test | 10 a.m. |
| End of the Test | 4 p.m. |
| Duration | 6 hours. |
| Kind of fuel used | No. 2 Cobbles. |
| Average observed pressure | 100 lbs. p. sq. inch. |
| Temperature of Feed Water | 78 F. |
| Temperature of Air outside | 55 F. |
| Temperature of Air entering the boilers | 62 F. |
| System of draught | Natural. |
| Force of draught in inch water | 0.5 |
| Average height of water level at starting | 4" |
| Average height of water level at ending. | 4" |
| Total quantity of Coal fired | 12600 lbs. |
| Quantity of Coal fired per hour | 2100 lbs. |



FAN ENGINE, No. 5 PIT



SECTION OF POWER HOUSE

| | |
|---|---|
| Quantity of coal fired per hour and per boiler | 525 lbs. |
| Grate area of each boiler. .. .. .. .. | 49 sq. feet. |
| Quantity of coal fired per hour and per sq. f. of grate in each boiler .. .. | 10. 7 lbs. |
| Heating surface of each boiler .. .. | 1797 sq. f. |
| Weight of coal burned per sq. f. of heating surface per hour in each boiler .. .. | 0.29 lbs. |
| Total weight of ashes in the 4 ashpans .. | 819 lbs. |
| Percentage of ashes .. .. .. .. | 6.5 % |
| Total water evaporated in the 4 boilers .. | 120,637 lbs. |
| Water evaporated per boiler .. .. .. | 30,159 lbs. |
| Water evaporated per boiler per hour .. | 5,026 lbs. |
| Water evaporated per sq. f. of heating surface and per hour in each boiler. .. .. | 2.79 lbs. |
| Water evaporated per lb. of coal .. .. | 9.57 lbs. |
| Water evaporated per lb. of coal reduced from and at 212 F. under atmospheric pressure .. .. .. .. .. | 11.26 lbs. |

(Factor of evaporation 1.177).

The coal is also very suitable for Locomotives as will be seen from the following Test:—

Particulars of the Locomotive:—

| | |
|---|---|
| Type .. .. .. .. .. .. | 2-6-0 Mogul. |
| Weight of the Locomotive and Tender in working order .. .. .. .. | 94 t. 171. |
| Heating Surface. Tubes 1294,2 Fire box 137,2 .. .. Total .. .. | 1431,4 sq. f. |
| Grate Area .. .. .. .. .. | 34 sq. f. |
| Capacity of Tank of Tender .. .. .. | 3650 gallons. |

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| | |
|---|---|
| Total distance of Test .. .. .. .. | 166 Miles. |
| Time occupied for Trial .. .. .. | 11 h. 30 minutes (30) |
| Weight of Coal burned .. .. .. | 5,820 lbs. |
| Kind of Coal fired .. .. .. .. | No. 2 Cobbles. |
| Weight of water evaporated .. .. .. | 39.367,4 lbs. |
| Weight of ashes from ashpan.. .. .. | 918 lbs. |
| Weight of cinders from smoke box .. .. | 84 lbs. |
| Percentage of ashes to coal burned .. .. (included in the weight of ashes is about 5% of small coal under 1/2". owing to the shakes of the Locomotive working.) | 15, 7% |
| Average pressure during the travel .. .. | 145 lbs per sq." |
| Average temperature in smoke box .. .. | 565 F. |
| Average draught in smoke box in inch water | 0,4 |

| | |
|---|---|
| Average Temperature of Feed water in Tender Tank .. .. .. .. | 57,75 F. |
| Average Temperature of Feed Water in Injector .. .. .. .. .. | 157 F. |
| Total water evaporated .. .. .. .. | 39.367 lbs. |
| Weight of Coal burned per hour .. .. | 506 lbs. |
| Weight of Coal burned per sq. f. of grate and per hour .. .. .. .. .. | 14.8 lbs. |
| Weight of Coal burned p. sq. i. of heating Surface p.h... .. .. .. .. | 0.35 lb. |
| Water evaporated per hour .. .. .. | 3423 lbs. |
| Water evaporated per hour and per sq. i. of heating Surface .. .. .. .. | 2,39 lbs. |
| Water evaporated per lb. Coal .. .. .. | 6.76 lbs. |
| Factor of evaporation .. .. .. .. | 1,207 |
| Water evaporated per lb. Coal, reduced from and at 212 F. under atmospheric pressure | 8,159 lbs. |

The Syndicate have recently started an Exploitation Dept. and undertake contracts for Boring operations in connection with prospective Collieries. They possess a complete equipment of the latest Diamond Drilling Plant.

## General

Labour is plentiful during the winter months, but in the summer difficulty is occasionally experienced in obtaining the necessary unskilled labour owing to the demand for labour in connection with the harvest.

From October to the end of April the climate in Honan is ideal. It is very dry and particularly healthy. The temperature is lower than that of England. The heat is rather intense in the months of July, August, and September.

The Syndicate employ a large Staff of Europeans at the Mines. They are all provided with foreign style bungalows, and facilities are afforded for recreation, such as cricket, foot-ball, tennis, golf, etc. A club building has been erected by the Syndicate for the use of the European Staff. The club is equipped with 2 Billiard Tables. There is also a Reading Room with Library. A well equipped Hospital is maintained by the Syndicate and a fully qualified Foreign Medical Officer resides at the Mines.

The Syndicate also have Offices and Depots in Tientsin, Peking, Shanghai, and Hankow.

In Tientsin the Syndicate have installed a small up-to-date Briquetting Plant for the purpose of making Ovoid Briquettes out of Anthracite Dust.

# RESTORATION OF MONARCHY IN CHINA

## The Revolt of Yunnan Province

Though no disorder of any kind had attended the elections and balloting on the monarchy question in China, reports, particularly from Japan, showed that it was certain that the Republicans would endeavour to galvanize into life a movement against the Government. Rumours began to circulate towards the end of December about the intentions of General Tsai Ao, formerly chief of the Land Measurement Bureau, who had been one of the most zealous supporters of the monarchical movement, and others. Before relating the subsequent proceedings of General Tsai Ao and his associates, it should be recorded that, following upon the bestowal upon the Vice-President of a princedom with the title Prince Wu Yi, a number of other honours were conferred. Hsu Shih-chang, Chao Erh-shun, Li Ching-hsi and Chang Chien were appointed Privy Councillors; military Governors Lung Chi-kuang, Chang Hsun, Feng Kuo-chang and Chiang Kuei-ti were created Dukes, while the military Governors of other provinces (including Tang Chi-yao, of Yunnan) were given marquisates. A number of Counts, Viscounts and Barons were also created. As Hsu Shih-chang (Secretary of State) had become a Privy Councillor, Lu Cheng-hsiang (Minister of Foreign Affairs) was appointed Secretary of State while continuing to act as Minister of Foreign Affairs.

Returning to General Tsai Ao, the first intimation that rebellion was brewing was given by a report that the Military Governors of two of the south-western provinces had telegraphed to Peking asking that the monarchy should be cancelled and that the promoters of the movement should be decapitated. It was soon learned that the provinces in question were Yunnan and Kweichow. The reports were at first disbelieved as Tang Chi-yao, the military Governor of Yunnan, had been most emphatic in urging the change in the form of government and had given earnest assurances that the people and troops of Yunnan were strongly in favour of the restoration of monarchy. It was not until December 28 that it became definitely known that a state of rebellion actually existed in Yunnan. On December 23 telegrams were received in Peking purporting to be signed by Tang Chi-yao and Civil Governor Jen Ko-cheng. As these documents are of historical interest we reproduce them, availing ourselves of the translations which appeared in the *Peking Gazette*, to which we are also indebted for translations of other documents which are given later.—

### Republicans' First Telegram to Yuan Shih-kai

*To the Great President:* Since the question of *Kuo-ti* was raised consternation has seized the public mind; and on account of the interference of various Powers the spirit of the people has been more aroused. They have asked the question, "Who has invited the disaster, and brought upon us such great disgrace?" Some one must be responsible for the alien insults heaped on us.

We have learned that each day is given to rapid preparations for the Grand Ceremony; and it is now true that, internally, public opinion has been slighted, and externally occasions have been offered to foreigners to encroach on our rights. Our blood runs cold when we face the dangers at the door. Not once but twice hath the President taken the oath to observe and obey the Constitution and protect and maintain the Republic. The oath was sworn before Heaven and Earth; and it is on record in the hearts of millions of people and the words thereof still echo in the ears of the people of all nations. In the Classics it is said that "in dealing with the people of the country, faith is of the essence of great rule." Again it is written that "without faith a people cannot endure as a nation." How then can one rule the people when he "eats" his own words and tears his own oath? Principle has now been cast to the winds and the *Kuo-ti* has been changed. We know not how the country can be administered.

Since the suspension of the National Assembly and the revision of the Constitution, the powers of Government have been centred in one person, with the added freedom to do whatever seems meet without let or hindrance. If the Government were to use this power in order to reform the administration and consolidate the foundation of the Nation, there would be no fear of failure. For the whole country would submit to the measures of the Central Government. Thus there is not the least necessity to commit treason by changing the *Kuo-ti*.

Although the late decision of the Citizens' Representatives in favour of a monarchy and the request of the high local officials and the President's accession to the Throne have been represented as inspired by the unanimous will of the people, it is well known that the same have been the work of ignoble men whose bribery and intimidation have been sanctioned by the Authorities. Although inept efforts have been made to disguise the deceit, the same is unhidden to the eyes of the world.

Fortunately it is said that the President has from the very beginning maintained a calm attitude, speaking not his mind on the subject. It is now as easy to turn the tide as the reversing of the palm. It may be objected that if the "face" of the nation is not preserved in view of the interference of Foreign Powers, there will be great danger in future. But it must be observed that official declarations can only be made in accordance with the will of the people, the tendency of which can easily be ascertained by searching for the facts. If the will of the people that the country should be the common property of the Nation be obeyed and the idea of the President that a Dynasty is as cheap as a worn-out shoe is heeded, the latter has it in his power to loosen the string that suspends the bell just as much as the person who has hung it. If the wrong path is not forsaken, it is feared that as soon as the heart of the people is gone, the country will be broken to pieces and the dismemberment of the Nation will take place when alien pressure is applied against us. We who have hitherto received favours from the President and have received high appointment from him hereby offer our faithful advice in the spirit of men who are sailing in common in a boat that is in danger or of those who love sincerity and cherish the unbroken word. We hope that the President will, with courage, refuse to listen to the speech of evil-counsellors and heed the voice of conscience and of honour. We further hope that he will renew his promise to protect the Republic and openly swear that a monarchical system will never again appear.

Thus the heart of the people will be settled and the foundation of the Nation will be consolidated. Then by enlisting the services of sagacious colleagues in order to surmount the difficulties of the time and sweeping away all corruptions and beginning anew with the people, it may be that the welfare and interest of the Nation will be furthered. In sending this telegram our eyes are wet with tears knowing not what more to say. We respectfully await the order of the President with our troops under arms. (*Signed*) Tang Chi-yao and Jen Ko-cheng.

### The Second Telegram

*For the Perusal of the Great President:*—In our humble opinion the reason why the people—Chinese and foreign—cannot excuse the President is because the movement for the change of Kuo-ti has been inspired and originated in Peking, and that the ring-leaders of the plot against the Min Kuo are all "bosom-men" of the President. The Chou An Hui, organised by Yang Tu and five other men, set the fire ablaze and the circular telegram sent by Chu Chi-chien and six other persons precipitated the destruction of the Republican structure. The President knew the bad deed was being done and yet he did nothing to arrest the same and to punish the evil-doers. The people, therefore, are suspicious. A mandate was issued on the 24th of the 11th month of the 3rd year in which it is affirmed: "Democracy and republicanism are laid down in the Constitutional Compact; and there is also a law relating to the punishment of those who spread sedition in order to disturb the minds of the people. If any one shall hereafter dare to advance strange doctrines and misconstrue the meaning of the Constitution, he will be punished severely in accordance with the law of sedition."

Yang Tu for having publicly organised the said Society and Chu Chi-chien for having secretly plotted by telegram are all principal offenders in the present flagrant case of sedition. As their crimes are obvious and the subject of abundant proof, we hereby ask the President to carry out at once the terms of the said mandate and publicly execute Yang Tu, Sun Yu-yun, Yen Fu, Liu Shih-pei, Li Hsieh-ho, Hu Ying, Chu Chi-chien, Tuan Chih-kuei, Chow Tze-chi, Liang Shih-yi, Chang Cheng-fang and Yuan Nai-kuan to the end that the whole nation may be pacified. Then, and not till then, will the world believe in the sincerity of the President, in his love for the country and his intention to abide by the law. All the troops and people here are in anger; and unless a substantial proof from the Central Authorities is forthcoming, guaranteeing the maintenance of the Republic, it will be impossible to suppress or pacify them. We await a reply within twenty-four hours. (*Signed*) Tang Chi-yao, Jen Ko-cheng, etc.

### Telegrams of Remonstrance from the Government

Steps were immediately taken by the Government after the receipt of these telegrams to ascertain whether they were genuine and if so to impress upon the senders the utter inconsistency of their conduct. The State Department and Army General Headquarters dispatched a telegram in the following terms to Tang Chi-yao and Jen Ko-cheng.—

The question whether the telegrams dated the 23rd from Yunnan are genuine documents or not has still to be ascertained. But in order to avoid misunderstanding we wish to reply to the principal points raised as follows:—

(1) The fact that Japan has, together with Great Britain, France, Russia and another Government, tendered advice in a friendly spirit to China, requesting the postponement of the monarchical movement for fear that a hurried change might cause internal disturbance which would damage the commerce, life and property of their nationals—but with the distinct assurance that they have had no wish to interfere with our internal affairs— is not without precedent in the history of diplomacy. This, together with their declaration of "watchful waiting" may be regarded as in the nature of approval; and recognition is in a fair way of being accorded. There is, therefore, no question of interference or disgrace at issue. How can any one fasten any blame on the Government on such a pretext, seeing that the advice was a friendly act of the friendly Powers? On the other hand the responsibility must fall on those who consider such a friendly act as an act of intervention and thus cast an insult on the country.

(2) The Mandate issued on the 11th inst. contains the following passage: "Keeping faith is of primary importance in connexion with the administration and protection of a country. When the Republic was first established I, the Great President, first took an oath before the Senate, promising to do my utmost to glorify the Republic. If I should set up an imperial system for myself I shall be violating my own oath, an accusation which I shall not be able to explain. I, therefore, request that another person be designated as the Emperor."

The Tsan Cheng Yuan, in the capacity of the principal representatives, then replied that the taking of the oath was simply a formal undertaking by the Chief Executive of the Republic, registered strictly in his capacity as such Chief Executive, which office is itself based on the choice of the whole body of the people. The Chief Executive should follow the dictates of the people. If the people are for the Republic then the oath is valid, but if the people are for a constitutional monarchy then the validity is changed thereby. Now the people are tired of the Republic and desire to have a monarchy. With the change of the form of State the position of Chief Executive no longer exists; hence the oath becomes null and void. All these things have been done by the free choice of the people and therefore have nothing to do with the Chief Executive, etc. This explanation has been approved by lawyers both Chinese and foreign. How then can this fact be manipulated in order to assign blame arbitrarily?

(3) The change of Kuo-ti recently carried out was made by the unanimous decision of the officials and people according to legal methods. The unanimity of the will of the people can be seen through the fact that there was not a single dissenting voice. Even up till this day telegrams from military and civil persons urging [the President] to ascend the Throne reach Peking by the score every day. The shouts of joy and congratulations are as irresistible as the force of the incoming tide. How could such manifestations take place unless the change has been made by the free choice of the people themselves? Could any attempt at inducement or coercion have been so universally successful? Even Chiang Chun Tang and Governor Jen have twice sent telegrams urging the accession to the Throne. Can it be said that the Chiang Chun and Governor were induced or coerced into doing so? Can it be said that all the representatives of the province of Yunnan were induced or coerced by the said Chiang Chun and Governor? Yet false accusations are invented at your sweet will to cast a slur on the whole body of officials and people of the country. It is, however, impossible to close the eyes and ears of the world by the unreasonable and deliberately distorted views of a small number of people.

### The Question of Punishment

(4) The change of the form of State was first raised by the majority of the people and merchants as well as by the military officers. The movement, though carried by an under-current, was pushed to the utmost because of the object lesson to be learned from the history of Mexico. It is the natural duty of every one to work for peace; and unless he be an enemy to the country who would oppose such an undertaking? All the first advocates were prompted by one and the same mind. Even Chiang Chun, Tsai Sung-po [General Tsai Ao] signed with his own hand the document which called for the formation of a constitutional monarchy on the 25th of the 8th month, together with other high military authorities. Is this military officer to be punished as his own handwriting can be produced even now?

(5) The sovereign rights of the Republic were reposed in the citizens. When the officials requested the Chief Executive to change the form of State the latter was firm and declined; but when the question was settled legally by the representatives of the citizens, even the Chief Executive, although his position was one of high dignity, could do nothing to oppose it, still less to cancel it. Yet this small number of people wish to cancel the decision of the whole body of the representatives. Never in history has such an illegal action been taken in any of the countries of the world. To play with the affairs of State like this is only to make themselves a laughing-stock.

In short at this time of trouble when danger lurks in every corner round our country and when all our attention and energy are needed to cope with internal and external affairs, all patriots at heart should discard all personal feelings or prejudice and devote their whole body and soul for the strengthening of the country. If any does not agree with the policy of others, he has plenty of ground to discuss matters in a sober way. If any one should only follow his own personal views and resort to dangerous actions without due consideration, he will be inviting intervention, when there is no need for intervention, and causing foreign derision when there is no occasion for derision, and bringing humiliation when there is no reason to suffer humiliation. What shall the world and future generations say about one who should overturn the country and act the catspaw of the waiting tiger?

What surprises us is the demand for an answer within a time-limit and the statement that you are waiting for it with troops under you in readiness. Such contempt for superior authority and disregard for law is simply destructive of all obedience. If all the troops and people of Yunnan should follow suit how would the superior officers control their men; danger would perhaps spring up at your very elbows. Should a wise man never think of this? Messrs. Tang and Jen are requested to give the names of the senders of the said telegrams. We have said all we wish to say and leave it to you gentlemen to decide.

### Republicans' Inconsistency Exposed

A second telegram was sent by the State Department personally addressed to Tang Chi-yao and Jen Ko-cheng to the following effect.—

Both of the telegrams previously despatched from your place in connexion with the monarchical change were for the Great President's early accession to the Throne and couched in earnest terms, stating that "all the military and civil officials as well as the gentry and merchants were unanimously happy and jubilant over the matter." The other telegram reads: "The general assembly of the representatives of the citizens are unanimously for a constitutional monarchy, and the Great President has been designated as the new Emperor of the Empire of Chung Hua; a fact which shows the united hearts of the people in every part of the country. Yet the Great President has officially issued a mandate refusing modestly to assume the high title. So far as the Great President is concerned it becomes him to make manifest his modesty but when the people are earnestly longing for an efficient administration, small details of formality should not be strictly adhered to. This is why Chi-yao and others have repeatedly petitioned in earnest tone. Ever since the establishment of the Republic the desperadoes have been meddling with the administration and the people have been cast into sufferings as hot as fire and as deep as water. Had it not been for our Great President, who courageously bore the burden of the dangerous situation, no one could tell into what a state of dismemberment this country would have fallen. Although by the divine valour of the Great President danger has been turned into peace, yet it is only a temporary achievement and not a measure for permanent peace. If a sovereign ruler be not selected at this time so that the inheritance may go on for myriads of years, not only the earnest desire of the small people may thereby be disappointed but those who are unduly ambitious may have chances to disturb the prevailing peace which of course is not the wish of the Great President, whose intention is to save the people. Some may say that the change for the monarchy may give rise to excuses for the rebels to raise trouble or for foreigners to take advantage of the situation. It must be remembered, however, that the rebels are always for rebellion. If they wish to rebel, the absence of a monarchical change will not rob them of an excuse. What is necessary is that the provinces should take strict precautions. As to the change of the form of State to suit the conditions of the country and the habits of the people, the same is a matter of internal reform and has therefore nothing to do with foreign countries. Besides, all the foreign Powers are on friendly terms with China and it is not likely that they will withhold recognition.

"Now with peace and order maintained in every part of the country, and the life and property of Chinese and foreign subjects under safe protection, no chance can be better than this when Heaven gives and the people submit. We humbly hope that the Throne will soon be ascended and the popular wish of the people satisfied with a view to bring unbounded blessings to the State and give satisfaction to the mass of longing people."

Another telegram despatched from Yunnan on the 12th of the 10th Month to the Headquarters of the Generalissimo said: "Ever since the question of the change of Kuo-ti was first raised the people, military and civil inside and outside of Peking, have been eagerly looking for the day of fulfilment, hoping that thereby permanent peace may be secured. The troops of Yunnan have been all along unquestionably obedient, and with regard to this question of Kuo-ti no trouble may be feared as they fully understand the situation. The political, educational, mercantile and other classes are all longing for the early settlement of the great policy. Only newspapers are making some criticisms but as they express the views of a few ignorant people, they are not sufficient to represent public opinion or to cause any obstruction. We therefore earnestly beg that you, on our behalf, lay the matter before the Master, asking him to yield the wish of the people, to take the step without hesitation and to put the change into effect so that the expectation of the military and civil people of the whole country may thus be realised. Undesirable developments may occur if the matter is delayed any longer and the fundamental policy of the State may thus be inconvenienced. This is certainly not the original intention of the Chief Executive who desires to maintain the general situation. At this time when everything hangs by a hair we cannot remain silent so long as we are aware of the facts. We respectfully request that the Master be secretly informed of these, etc."

On the 18th and 21st of the 12th month Chiang Chun Tang sent two more telegrams to the Headquarters of the Generalissimo to the following effect:

"During the last ten days the rebels have been placing agents in the Annam part of the Yunnan province and energetically working for a

rebellion. Fortunately Chi-yao has taken careful precautions and the troops are all quiet. No disturbance need be feared."

The other message says: "The grace which has been received by Chi-yao has permeated his flesh and bones, and he has always looked upon himself as the defender of the territory and the bosom man of the Chief Executive. As Yunnan is his motherland it is his natural duty to maintain order therein. He has therefore been very strict in taking the necessary precautions against the rebels. Judging by the present situation there can certainly be no rebellion."

The telegram to the General Staff was to the following effect: "All the military officers of the middle and low ranks are all well under control. As they have always been on cordial terms with their commander they are certainly not to be influenced by the rebels. As to the officers of higher rank they all understand the righteous principles as Chi-yao himself; they can be safely relied upon to strengthen the hands of the State with one heart and soul. Taking the general situation in view, all the reliable troops, with the exception of the two battalions which have been sent to the borders to capture robbers and assist in the uprooting of the opium plants, are all concentrated in the capital as a garrison. Chi-yao is determined to carry out his policy and is taking all the necessary precautions. So long as his own life is not endangered, he does not fear any untoward developments."

In conclusion, the Cheng Shih T'ang wires:—Yet in spite of all these assurances the text of the latest telegram is very curious in nature. Only an interval of three days and the turn has taken the opposite direction with a difference of a thousand li. This State Department therefore cannot believe that your office can be capable of sending a telegram so utterly contrary in sentiment. It is therefore presumed that it was forged by some one else. We cannot take on ourselves the responsibility of submitting such a telegram. Send another telegram, the original copy of which should bear your seal and personal signature, immediately to Peking so that we may submit the same [to the Ta Huang Ti.]

Military preparations were made immediately the telegrams were received, and strong forces of northern troops were hurried southward. On December 28 a meeting of the Tsan Chen Yuan was held at which Mr. Liang Shih-yi brought up the question of the situation in Yunnan. It had been decided to ask the Foreign Office for an explicit statement in regard to the advice given by the five Entente Powers and Mr. Tsao Ju-lin, Vice-Minister of Foreign Affairs, attended for this purpose. He described the terms in which the advice was given and the reply made in which Mr. Lu Cheng-hsiang explained that the change in the form of state was being carried out in strict accordance with the Constitutional Compact in which sovereignty was vested in the people. As the change was first requested by the people the Government could do nothing but yield to their wishes. On November 11 a more formal reply was sent to each of the Ministers of the advising Powers reiterating that the movement was a popular one and that the Government had abstained from supporting or checking it. Messages had been received from each of the provinces in reply to a specific inquiry stating that the authorities could guarantee that there would be no disturbance or unrest. The provincial authorities urged the Government to restore the monarchical system. On December 15 the Ministers of the five Powers repeated their advice and the Minister of Foreign Affairs had replied that although the monarchical form of government had not yet been formally restored, the balloting had been unanimously in favour of the change being made. It was the hope of the Government that the Powers would respect the sovereignty of China by accepting the declaration made by the Government in response to the previous advice. The Ministers assured Mr. Lu that there was no desire on their part to interfere with the internal affairs of China. After Mr. Tsao had made the foregoing statement it was decided to send a circular telegram to the provinces informing them of the real facts of the case and explaining that the Powers that had given advice had explicitly disclaimed any desire to interfere with China's domestic affairs.

A Memorial was drawn up for submission to the Emperor-elect. This document, which is too long to quote textually, charged Tang Chi-yao and Jen Ko-cheng with three grave crimes: (1) Arousing ill-feeling between Chinese and foreigners; (2) Acting in opposition to the will of the people; (3) Insulting the Executive Chief of the country. They had stated that the spirit of the people was aroused because of the "interference" of foreign Powers, and had suggested that these Powers were promised special privileges in return for a promise of recognition. Both statements were shown to be entirely untrue, the foreign Powers disclaimed any wish to interfere, and the Chinese Government had promised no concessions in return for recognition. The circulation of such reports was calculated to cause diplomatic friction with the foreign Powers. In regard to the second count against these men the Memorial said that they alleged that the decision to change the form of government was effected either by monetary inducements or the pressure of influence. But both these men had themselves reported that the voting was the expression of the sincere wish of the people of Yunnan. No confidence could be placed in the statements of men who so flatly contradicted themselves. As a fact the elections were conducted fairly and no compulsion was exercised, and the people voted unanimously for a constitutional monarchy. Consequently Tang and Jen were opposing the will of the people. In the third place in their circular telegram Tang and Jen had used disrespectful expressions in referring to the Chief Executive, and accused him of violating his oath. In reality the oath taken as President was to submit to the will of the people. The restoration of monarchy was the will of the people and owing to their decision the Chief Executive was keeping his oath. The Memorial concluded: "As Tang Chi-yao and Jen Ko-cheng are guilty of the above three great crimes, the same should, therefore, be publicly proclaimed, and punitive expeditions should immediately be despatched to annihilate the violent and obstinate so that foundations of the Empire may be consolidated."

In response a Mandate was issued which quoted the Memorial in full and continued:—

In addition to the foregoing Memorial of the acting Li Fa Yuan, various telegrams of the Chiang Chun, Military Inspectors, Governors, Lieutenant-Generals and Defence Commissioners of the provinces and the great Commanders of the troops of various localities also urge that punishment should be meted out to Tang Chi-yao, Jen Ko-cheng and Tsai Ao, who sent circular telegrams everywhere to agitate for rebellion, etc. Tang Chi-yao and Jen Ko-chen twice sent us in earnest terms petitions urging us to ascend the Throne quickly, and several telegrams were received from them before the 21st day, assuring us that although there were secret intrigues and agitations of rebels in their province no trouble was expected because strict precautions were adopted, etc. But lo, before a few days have elapsed, they have changed their original intentions.

When the Kuo-ti problem was raised Tsai Ao gathered together high military officials in Peking and put his signature before others on a petition craving the introduction of a Constitutional Monarchy. Later on he obtained leave of absence to proceed to a foreign country to receive medical treatment. He has, however, secretly proceeded to Yunnan to start an agitation there. Indeed we never imagined that he would become so faithless. As Tang Chi-yao and Jen Ko-cheng are responsible for the defence of their province, they must be blamed for the failure to maintain the situation of the province of Yunnan, no matter whether the telegram was circulated under the pressure of the influence of others or by forgery of others.

Tang Chi-yao, the Kaiwu Chiang Chun, and Jen Ko-cheng, the Governor, are hereby deprived of their offices, ranks, titles of nobility, and decorations, pending investigation and punishment.

As Tsai Ao has kept secret his whereabouts and has not been careful to avoid suspicions, he is hereby deprived of his office, rank, Grand Order of Merit and Decoration; and the local officials of the said province are hereby ordered to compel him to come to Peking to await investigation and punishment.

It is interesting to record that more was known of the movements of General Tsai Ao than he probably guessed. As has been already stated he was amongst those who were most enthusiastically in favour of the reversion to monarchy. It is supposed, however, that later he came under the influence of some Republicans, and was credulous enough to believe their statements that the Chinese Government had promised special concessions to the Powers which had advised a postponement of the change in the system of government. He went to Japan and was there informed by a Republican fugitive that it was true that these special privileges had been promised. Apparently convinced of the truth of the fabrication Tsai Ao went to Yunnan and stirred up the troops who were formerly under his command to revolt. Tsai Ao headed the revolution in Yunnan in 1911 and has considerable influence in the province. It is supposed that he coerced Tang Chi-yao, who is described as a man of weak character, into associating himself with the rebellion.

As was inevitable all kinds of rumours were current in regard to the support that the rebels were to receive. For example the loyalty of Generals Chang Hsun and Feng Ko-chang was said to be doubtful, but they both immediately issued proclamations denouncing the rebels in the severest terms. The report of Kweichow having joined Yunnan was shown to be incorrect. Kwantung and Kwangsi remained quiet, and none

of the other provinces evinced any disposition to join the rebellion.

The leaders in Yunnan deemed it necessary to explain their action and they consequently issued the following manifesto.

### Republican Leaders' Manifesto

A historical retrospect takes us back to the last days of the Tsing dynasty, when abuse of the administrative power thrust our country into a precarious state. Realising the necessity of fighting for national existence, our people raised the Banner of Righteousness under which the Republic was established. For the sake of national unity, Yuan was elected President; and during the first year of Min Kuo, the whole country was so eager for peace and progress that patriots sacrificed everything in order to assist Yuan. Was it because they were so attached to him that they had chosen so to act? Nay, it was because they wished—through him—to save the imperilled country. Yet in spite of the sacred trust reposed in him, he has failed to do aught that is great and abiding during the past four years. For the purpose of seizing power and strengthening his position, he has unceasingly played with political parties in his "soft-handed" manner, crushed the National Assembly, banished by mean methods those who were opposed to him, prostituted public opinion either by coercion or inducement, and employed and directed ignoble men whom he has encouraged with rewards and privileges.

Since the day he was placed in his position of trust, he has contracted upwards of 200,000,000 dollars in foreign loans and yet not a single item of expenditure he dares truly to disclose to the public. On the outbreak of the war in Europe, the resource of foreign loans was cut off. He then devoted his attention to gathering in all he could within the borders of China. Unreasonable taxes have been levied, people have been forced to subscribe to Domestic Loans, and excessive fiscal burdens have been imposed on the country. In addition, he has encouraged the extortion of the tax-gatherers who are offered high rewards in their work of impoverishing the people. His disregard of the sufferings of the people is shown by the fact that he has been "fishing them up by drying up the lakes." Thus, the people within the Confines of the Four Seas have become so financially desperate that they are pressed by poverty. Where has the money, thus "scraped up." gone to? It has been spent for "capturing the minds of scholars and officials" and guarding against "indoor thieves." As far as the real affairs of the State are concerned, nothing has been done for the people. We have never heard of Yuan doing anything to strengthen the national defence or making any attempt at preparing for the international struggle of finance. What he has actually done is to invite the derision of Friendly Powers by the exercise of short-sighted cunning and vain tricks. No wonder that we have been defeated at every turn in matters diplomatic. Internally, he has never paid any respect to the welfare of the provinces and local centres or sympathised with the sufferings of the people. Robbers have been over-running the country, yet he has failed to suppress them. People have been unlawfully harassed, yet he has failed to deliver them. Education has been neglected, while the restoration of old institutions has been advocated. All the money-making industries have been monopolised by the officials and turned into official enterprises. The policy of the Ch'in dynasty to "keep the people in ignorance" has been followed and the doctrine of Hung-yang, who affirmed that the people should be made to pay all expenses of the sovereign no matter what the conditions be, has been obeyed to the letter. Laws and regulations are as numerous as the hair on the back of a cow; but an order given in the morning is often changed in the evening. If the law-maker himself can break the law as often as he likes, how can the people have any definite principle to follow?

The spirit of law, therefore, has been destroyed. In the employment of men, those are accepted who are unscrupulous and cunning. Patriots have been shunned and capable men have been placed under suspicion. If one is as pliable as a weak concubine, he may expect a speedy rise to high position; but one risks his life, if he shows that he is "stubborn in the right." Thus manly spirit has been smothered and the sense of self-respect abased to the dust. The vitality of the nation has thus been drained. These things are known and seen by myriads of eyes; and, verily, they are worse than the evil deeds of the Tsing dynasty. We, citizens, holding that it was not well to attack the administration and excusing Yuan in the belief that it was not an easy task to establish an efficient Government, drank the bitterness and bore the pain without a murmur, hoping that a day might yield us good results.

For several years we have, therefore, hoped uninfluenced by prejudice. We were beginning to believe that as internal disturbances had been suppressed and power had been centred in a single hand and pressure from foreign countries was relaxing Yuan would fulfil his repeated avowals of faithfulness to the nation and, by eating bitterness and living a life of real action, save our people. Who could have imagined that he would so disregard all else except to seize the Imperial Vessels and indulge in the pleasure of bearing an Imperial title? Who could have imagined that he would have broken the oath uttered by his own lips and violated the Constitutional Compact which he made with the people? Internally he has deceived the people; and externally he has been false to the Foreign Powers. He gave inspiration to his "hunting dogs and eagle" and spread his "teeth and paws" [conspirators] throughout the land to the end of coercing the people and compelling them to obey his orders. To the heart-to-heart advice of good men he has shut his ears, refusing to listen. And any expression of real public opinion is taken as proof of sedition. Consequently the fires of hatred have been fanned, while the general public are all in a state of unrest. Farmers have forsaken their fields and merchants have ceased to trade. Travellers are deprived of their privilege of freedom of movement, while scholars are compelled to satisfy themselves by sitting in the "wilderness." Officials, who have regard for morality, have left the Government one after the other, while crouching desperadoes and ambitious military men have been watching for a chance to rise.

Matters have gone so far that the Foreign Powers have been interfering with our internal affairs and three times they have given us "advice." Besides making the declaration that they would maintain strict vigilance, it is also said that they are making preparations "for free action" in the matter. To confess that the situation has necessitated the interference of the Foreign Powers in our internal affairs is indeed a humiliation, great and grievous. Who then is responsible for our being in such a position? Yet he that is responsible still pursues his iniquities and is working to realise his insatiable ambition. If he should happen to have so much self-respect to refrain from offering a portion of the land to another country and styling himself as the latter's adopted son as in the case of Shih Chin, he will follow, be assured, in the footsteps of the Tsing dynasty and encourage people like the Boxers to drive out foreigners. If he should adopt any one of these alternative courses, China would be thrown into the bottomless abyss—without hope of deliverance.

Has not the ancient Sage said that "a traitor is a criminal punishable by any one?" How then can we let pass the high treason committed by one who has been placed in the position of Chief Executive by the citizens? China may be said to be dead and buried, if nothing is done to punish such an one, whose crimes are plain and whose secret transaction in high treason is about to be disclosed. Behold, can we hope to live if we suffer our country to perish? Then, is it an easy matter to stand as an independent-nation in this world? Even a country whose people are united in their efforts to improve their administration may be in danger of becoming a prey of other countries if their progress should be delayed for a moment; how much more dangerous then is a country which endeavours to sail up the stream in a mediaeval ship with a pilot of Asiatic cunning who has no other aim but to usurp power and position? Any man of common wisdom must know it to be a hopeless task to expect the consolidation of the country under the direction of such a man.

Since Yuan has shown himself to be entirely false to his own duties and ignorant of the general tendency of the world, and since a period of several years' experiment has resulted in a mass of criminal evils, blackening our history, we can no more be tolerant towards him. Even if he had in him sufficient regard for the mere name of Republic to lead him to abide by the existing form of State, there would be no way by which his methods could now be controlled; since he has seized power to do as he pleases. The consequence of his continuance in power would be that the vitality of the country would be sapped until a great disturbance breaks out and the country disappears in the night of history. Is there any hope of one who in these hours of imminent peril seeks to satisfy his unholy desire for Imperialism? Such an one is like a son, who, watching his parents in agony on their sick-bed, puts them to the sword.

During the last few months—as a result of terror struck into the mind of the people—many messages have been sent to the Central Government asking Yuan to ascend the Throne. It is pretended that these messages are a real expression of the will of the people; and the same are used to invite public admiration and to serve hereafter to cover his guilt and mislead the verdict of history. In reality, however, the reason why the high officials have submissively yielded to the whim of this one man is because either they have no wish to set the country in a revolution or they wish to bide their time, while outwardly and temporarily acquiescing in his doing. Can we expect them all willingly to submit themselves to the humiliation of being traitors or becoming distraught out of love for this enemy of the Republic? We who write this have been either holding office in the Central Government or officiating in the provinces in responsible positions. In position we are already honored beyond merits: we therefore do not hope to gain anything more so far as our individual interests are concerned. Nor are we deliberately inimical to Yuan, who has been our colleague for many years. The reason which prompts us in our action is the imminent danger to the country whose life hangs, as it were, by a single hair. The country's welfare is the responsibility of every individual; and for this reason we have in tears repeatedly tendered our sincere advice in the hope that the situation may be saved at the eleventh hour. Unfortunately the individual in question has shown no sign of repentance and thus the millions of people remain in uncertainty as to their future.

In accordance with the provisions of the Constitutional Compact, we now proclaim his crimes and despatch a punitive expedition against the Traitor with a view that peace may soon be restored to this country. In raising the Banner of Righteousness we have four aims in view:

1. To do our utmost in order to maintain the Republic and to see that Imperialism shall never rear its head again in China;
2. To limit the power of the Central Government so that the people of each individual locality (province) may have their freedom of development;
3. To establish a real and genuine constitution in accordance with the tendency of the world; and
4. To strengthen diplomatic intercourse by following a policy of sincerity so that China's standing among the world powers may thereby be raised.

These four aims shall direct our movements and actions in future. As to failure or success we leave it to the will of Heaven; for we believe Heaven will bless Chung Kuo if we follow the dictates of our conscience and the call of righteousness. We hereby open our hearts to the world and send this call to the whole country.

(*Signed*) Tang Chi-yao, Jen Ko-cheng and Liu Hsien-shih.

They also issued a manifesto to the foreign Powers, which was couched in the following terms.—

**Manifesto to Foreign Powers**

*Manifesto from the Yunnan Military Government of the Punitive Army Representing Republican China against high treason to the Friendly Powers, greeting:* It is the bounden duty of every nation in this world to act in conformity with the principles of fairness and civilization in order that the people may show their good qualities and perform their part towards the uplifting of mankind. Harmonious co-operation between China and the foreign countries as well as that between governor and governed must be built upon the solid foundation of sincerity and fairness. During the last years of the Tsing Dynasty the misrule of the country was in direct contravention of the modern principles of government; and in consequence our citizens inaugurated a new regime and established the present republican form of government.

Yuan Shih-k'ai professed his attachment to the new government with the selfish object of advancing himself to the office of President. Twice upon accepting the office he swore before the people of China and the foreign nations that he would be faithful to the Republic and that he would strictly observe the constitution. Notwithstanding this, he has during his administration and on divers occasions set the constitution at naught; and had not his despotic rule endangered the very existence of the state, our people would have borne it with patience in order to see the result of his administration.

But during the past four years he has exercised his powers in the most arbitrary manner, and has had recourse to vile intrigues and most unscrupulous methods with the result that public opinion has been suppressed and good and peaceful citizens put to death. Indeed, his abuse of power has even gone to the extent of tampering with the conscience of the entire people. If we examine the results of his administration, we find that he has sucked out the blood of the people and has rendered their lives miserable for the purpose of gratifying his tyrannical ambitions. Should this state of things be suffered to continue for any length of time, no trace of humanity will be left in China. Moreover, his policy towards the foreign powers has been one of deceit and trickery, in consequence of which our country has entirely lost her prestige in the family of nations.

A great civil commotion has become inevitable which will give cause for anxiety to the friendly powers. Instead of repenting of his crimes Yuan Shih-k'ai has now even dared to violate his oath of office; he has surrounded himself with partisans; he has deliberately misrepresented the people's will and has made himself emperor, overawing the people on the one hand and imposing upon the foreign nations on the other. He has been advised in vain to follow the path of sincerity and righteousness, and every means of making him abide by the constitution has been tried without result. This Military Government cannot but look with commiseration upon the destruction of human principles and the end of our national existence, and has therefore solemnly resolved to mobilize all its forces to punish the traitor who has rendered himself guilty of violating his oath of office, setting the constitution at naught, of bringing disaster to the people, and of usurping the powers of government. All patriotic citizens, whether Northerners, and all military and civil officials, whether they belong to the Moderate or the Radical Party, have agreed after mutual consultation to proclaim the justice of our cause.

Now that we have been forced to take up arms to defend and preserve the Chung Hua Republic to which all official recognition has been accorded by all the friendly powers, we earnestly hope that they will have pity on our plight, recognize our cause, and appreciate the justice of our acts. We do hereby publicly declare that all treaties and agreements concluded with the friendly powers prior to the date of the proclamation of our righteous cause against high treason, to wit, the month of December in the fourth year of the Republic of China, shall continue to have full force and effect, and that within the jurisdiction of our Army we shall assume responsibility for the protection of foreign lives, commerce, and missions as well as for the due performance of all treaty obligations. All foreign relations shall henceforth be conducted between the representatives of this Military Government specially authorized in that behalf and the foreign ministers and consuls.

This Military Government further declares before Heaven and Earth that from and after this date it will do everything within its power to govern the country in harmony with the principles of civilization, so that our people may enjoy real blessings of republicanism; and will also conduct our foreign policy with frankness and sincerity, so that our relations with the friendly powers may become closer and more amicable. Heaven witnesseth this our solemn declaration.

Yunnanfu, December, 1915.

The first Mandate issued by the Emperor-elect gave the Republican leaders a chance of withdrawing from the situation in which they had placed themselves without incurring serious consequences. As the opportunity was not embraced a second edict was issued on January 5, as follows:—

Some time ago the Tsan Cheng Yuan in its capacity of the Acting Li Fa Yuan sent a memorial to the Throne reporting that Tang Chi-yao and Jen Ko-cheng [the Chiang Chun and Civil Governor of Yunnan respectively], rebelled with their troops, and requesting that a punitive expedition be sent to punish them for their crimes, etc. Again telegrams have also been received from Chiang Chuns and Governors of various provinces stating that Tsai Ao and others have despatched a circular telegram to them agitating for rebellion, and requesting that they be punished, etc. Recently we thought that there were some special circumstances, and a mandate therefore was issued depriving Tang Chi-yao, Jen Ko-cheng and Tsai Ao of their respective ranks and offices pending investigation and trial. Now we are in possession of reports from various localities on the frontier, advising us that Tsai Ao some time ago proceeded secretly with rebel accomplices to Yunnan where he enticed and coerced the chief officials and a portion of troops in that province to rebel against the Central Government. They have destroyed the unity of the nation, declared independence and despatched troops to invade Szechuan. Those who opposed the seditious plot have been murdered, and the rebels have assumed authority and appointed officials. The people in the province have planned to oppose them, but on account of the rebel influence they have had to shed secret tears and remained silent. These rebels have deliberately put forth lies and rumours which have spread to various localities. They say that such and such provinces have joined them, and that a certain Foreign Power had secret designs against the nation, etc. They try to deceive the people and create international ill-feelings. All these rumours and mis-statements are without foundation. It must be pointed out that the troops and people of the provinces are obedient to the orders of the Central Government and willing to maintain and assist the Government; and that all friendly nations, being anxious for the peace and order of the country, have maintained a friendly attitude towards us and there is no room left for the rebel tang to make misrepresentations.

When there were signs of trouble in Yunnan, the Central Government and the high officials of the provinces sent telegrams to the rebels giving them advice to desist from their plots. Piles of documents were sent to them in earnest terms to persuade them, but as the mind of the rebels was fixed they gave no ear to the advice. They, a handful of wicked men, have dared to defy openly the Will of the People as expressed in the Law lately passed by the People of this Nation. They have disregarded the proper decisions of the Government and the faithful advice of their colleagues. They are heartless and extremely mad. Some of these rebels were the promoters of the change of the Kuo-ti, while others were men who repeatedly sent in petitions requesting the accession to the Throne. But in a few days' time they have completely changed their ideas. Their faithlessness has indeed defied the power of description. No doubt, in the beginning of every Dynasty, there have been wicked men of dangerous mind, trying to raise rebellion under some pretext; but we have not had any previous case of wickedness, faithlessness and seditious nature like that shown by these rebels. Originally there were not the least seditious desires among the people of Yunnan, and most of the troops understood the righteous cause.

Moreover, it must be observed that Yunnan is a most indigent province and the people have found it difficult to obtain means of livelihood. There is only a number of about 10,000 troops in the province, whose monthly pay has been a constantly difficult problem to solve; and we have no need to express any anxiety for the situation as the rebellion is sure to end in failure. In consideration of the condition of the people and troops of Yunnan, the Central Government has not the least desire to send troops to suppress the rebellion; but should we allow these rebels, who trust in their geographical advantage and the distance from the Central Government, to have their own way and continue to occupy the territory, my people there will be afflicted, the neighboring provinces will be affected, the general situation will become critical and occasions will be offered to foreigners for interference. We have considered over carefully the various aspects of the question, and it is impossible to tolerate them and so set aside justice and the law of this nation. The Chiang Chuns and Governors of the various provinces are hereby ordered to exercise strict vigilance in devising means for defence and for suppression work. Tsao Kun, the Huwei Chiang Chun, is hereby ordered to proceed with his troops to Yunnan, and to station them at strategic points pending orders for operation. Only those few who are promoters of the rebellion will be held responsible by the Central Government for their crimes, and all those who have been forced or coerced to follow the rebels shall not be punished provided that they repent of their errors. Those who hold right principle from beginning to end without following the rebels shall be rewarded. As most of the inhabitants of Yunnan province are innocent, measures should be taken to give them proper relief and they should not be allowed to lose their occupation, etc. Thus my real idea regarding the punishment of crime and the pacification of the people will be made manifest.

Another Mandate was simultaneously issued in which the Emperor-elect explained his own position. He ridiculed the idea that the attainment of Imperial power was a source of satisfaction to him; it burdened him with enormous responsibilities. However he had bowed to the will of the people. The change in the form of government was made with the hope of securing good government and permanent peace. The Mandate concludes.—

However, men like Tsai Ao and others, whose hearts have been burning with desires for privileges, have purposely spread rumours to agitate the people. They are not ignorant of the poor condition of the people and the difficult situation of the country; and yet they have ventured to realise their great desires, hoping for success. They care nothing if the people be drawn into misery or the nation be destroyed. But they have failed to see that if the nation should perish what would be the good of contending for authority and privileges. The people of the country have long ago foreseen the action of these rebels. Fortunately as their plots have been revealed at an early date, it is easy to suppress them at any time.

The officials and people of various provinces have now declared unanimously, the Citizens' Representatives of the country have already decided by unanimous votes that the form of the State should be a Constitutional Monarchy, and that they should all submit to one Supreme Chief: therefore the fundamental Plan of the Government should never be changed at any time. There is now no room left for the discussion of the problem. We hereby request that the accession to the Throne should take place soon. Destroy the rebels quickly, as we are all filled with righteous indignation, etc. Although there are tens of thousands of tongues, the same thing has been advocated. As the people of the country have recommended me, a man of "thin virtue," and the Generals and Officials have honoured me, how dare I hesitate any more and bring disaster upon the whole country?

Should there be any who becomes a leader of rebels, I will deal with him according to law so as to avenge the people. The Chief Civil and Military officials of the various provinces are hereby instructed to issue strict proclamations for the plain information of the people. The latter should be taught to distinguish the right and the wrong causes; and to love their life and family so that they will not be misled by rebels and become involved in knavish plots. The high officials of various provinces, who are able to preserve order and tranquillity in their respective localities, and military men, who fully understand the righteous cause, are responsible for the protection of their respective localities; and it is hoped that they will encourage one another in a sense of patriotism and perform their duties satisfactorily. Thus my heart to regard the people as if they have been wounded, and my desire to impress the foregoing in mind of the people by repeated warnings, will be made manifest.

At a session of the Council of State held on January 7 a petition asking the Emperor to fix a definite date for his formal enthronement was unanimously adopted. At the same session the recommendation telegraphed by Mr. Lung Chien-chang, the Governor of Kweichow, that the question of the change in the form of government should be reconsidered by the Citizens' Convention, was brought up. It was decided to dispatch a telegram in reply of which the following is the translation made by the *Peking Gazette:*

Your telegram has been received and perused. As a result of a special meeting of the Tsan Cheng Yuan convened to discuss its contents we have decided to send you our views as follows.

The contents of your telegram amount to nothing more or less than asking for the cancellation of the *fait accompli* of a constitutional monarchy on account of the trouble in Yunnan, a course which is not unlike treating affairs of state as a game of chess and the State as a toy. The arguments are so poor and the words so unreasonable that they are in truth not worthy of discussion; but the latter part of the telegram, in which it is proposed either to submit the question for the reconsideration of the Citizens' Convention or officially to cancel (the restoration) "with one word" from the Chief Executive, conveys the idea that the settled question of the change of Kuo-ti can really be reconsidered and another experiment made. Such an idle argument not only treats the law lightly but it is feared that it will also disturb the minds of the people. This Yuan, being the highest legislative organ of the country as well as the principal representative of the Convention of Representatives of Citizens, find it impossible to remain silent respecting this matter. Our duty compels us to correct your erroneous views; and it is hoped that you, gentlemen, will kindly listen to our words. The existence of a State depends on the force of law in maintaining the situation, and law is made by the wish of the people. When the people are asked to give their views on the law they are perfectly free to say whether they are for or against it but once a law is passed and put into execution even the law-makers themselves cannot revoke it. This is a principle adhered to by all nations of all times. Recently the question of Kuo-ti was settled by the Convention of the Representatives of Citizens in accordance with the method fixed by the Legislature, the comprehensiveness and thoroughness of which was recognised and praised by foreigners and Chinese. The procedure was based on the foundation of the Citizens' Convention and its result was based on the will of the people of the whole country. In order to be sure that no factional views of any particular set should gain dominance, the views of the various bodies of merchants in all localities were secured; and in order to insure freedom for the expression of opinions, the provinces and the various bodies were allowed to cast their votes freely. As a consequence of such a comprehensive and safe method to settle the exceedingly important question of Kuo-ti, the whole country willingly agreed and no opposition was raised. Yet to our great surprise you have recommended the reconsideration of the question without any good reason and the suggestion is made after the change of the Kuo-ti has been officially announced. Such a fickle attitude is never heard of even at times when an order issued in "the morning is changed in the evening." If the will of the people were as changeable as summer rain and autumn cold it could not be changed so quickly as this.

Furthermore, the Convention of Representatives of Citizens was composed of representatives elected by successful candidates of the primary election of the Citizens' Convention. These two bodies bear different names, it is true, but their composition is practically the same. Now is it not an absurdity to trust the Members of the Citizens' Convention elected by the successful candidates of the primary election but to distrust the "representatives" of the Convention of the Representatives of Citizens elected by the same body of men? In some modern countries the Constitution cannot be altered within a definite period after its final passage. If the Constitution must be so treated how much more should the Kuo-ti be? If your telegram be accepted then the will of the people can be changed at any time and the law revoked any day. How could we show our trustworthiness to the world and place the country in an unshakable position if we were to act thus? This is the reason why the question of Kuo-ti cannot be submitted to the Citizens Convention for reconsideration.

As to the Chief Executive of a republican country, he is only an instrument through which the will of the people is put into execution. The sovereign right of a republican country is vested in the people. This is laid down in the Constitutional Compact as plainly as the rays of the sun and the light of the stars. The change of Kuo-ti is, therefore, based on the will of the people and not in the least on the views of the Chief Executive. Indeed, the Chief Executive during the process made some declarations which were unsuited for the occasion; but these remarks were the sincere views of an onlooker for the purpose of awakening the people who were the actual principals in the case. This, therefore, cannot be taken as an interference on his part with the question of Kuo-ti. Now since the result of the balloting has shown that the people are tired of the Republic and wish to have a constitutional monarchy, the Chief Executive has been placed in an impotent position. This is the reason why when the Li Fa Yuan reported to him their decision in favour of a constitutional monarchy, the Chief Executive only gave a refusal respecting the position offered him and did not go out of the way to say anything respecting the decision for the Kuo-ti. This is a plain proof that the Chief Executive had no power to interfere with the question of Kuo-ti. Yet in spite of it all and after the failure of the Chief Executive firmly to decline the offer of the Throne, you wish to call on him to cancel the constitutional monarchy now established "by one word." Leaving alone the question that the Kuo-ti has been decided by the whole body of the people and cannot be cancelled by the Chief Executive alone, we must also remember that a Republic of such a nature, even if it be restored, will not be worth maintaining. Considering the wish of the people, they cannot be so fickle as to demand this. This is the reason why the proposal that the Chief Executive be asked to cancel the Constitutional monarchy cannot be entertained.

Your telegram also says that since the reason why the people wished to change the form of State was to secure peace and as the change has proved to be not only incapable of maintaining peace but liable to create disturbance, the will of the people has changed with the turn of the currents of time, etc. Psychologically speaking, there is no standard of measurement to say whether the country is in a sound or dangerous position. Even the signs of the change of the will of the people can hardly be discovered in facts. We need not discuss the point that the great and important question of Kuo-ti, recognised by the representatives of the whole country as safe and solemnly passed, cannot be suddenly cancelled simply because a few provincial authorities regard it as dangerous. Indeed the actions of you, gentlemen, are not entirely unconnected with the change in the minds of the people from a sense of safety to one of fear of danger. The change itself is, therefore, not responsible for the precarious situation. The reason is that when the question of Kuo-ti was first settled, the people within the seas rejoiced in thundering voices, being of the opinion that as the evil system of the Republic has disappeared it would not be difficult for the State to secure stability. Who could have imagined that even while the ceremony of enthronement was still in process of preparation and foreign recognition negotiated for, the news of the rebellion in Yunnan would reach our ears. That on which the people have relied for peace is now actually showing signs of possible danger. Except for the fickleness of Tang and Jen, there would have been no obstacle to the renewing of the form of State. There is, therefore, no question of doubts on the part of the people. It is no exaggeration to say that it is Tang and Jen who have caused the people to doubt and fear.

You gentlemen have received innumerable graces from the State and thoroughly understand the great principles of righteousness. The province of Kueichow, owing to its proximity to Yunnan, is in a dangerous position. In our humble opinion you should have marched your troops to Yunnan and punished the rebels on the first news of the trouble in that province or you would have done well if you had strongly held the strategic points on the border so as to isolate Yunnan, a step which would have brought an early termination of the Yunnan rebellion. Instead, you have blamed the Central Government for the rebellion in Yunnan as if you have been afraid that the trouble in Yunnan was not affecting other localities fast enough. In this we, members of the Yuan, cannot bring ourselves to agree with your views.

Since the outbreak of war in Europe, China has been in a precarious position and her dangers have reached their climax this day. You gentlemen are all well-known patriots. Even if you should disagree with the policy of the Central Government, you should temporarily forget the same and co-operate in placing the country on a sound foundation and should not create fresh disagreement and thus hasten the downfall of the country. Remember the proverb that the fisherman profits when the oyster-catcher and clam come to blows. We shiver when we think of this. We have said all we wish to say and hope that you will give our words careful consideration.........

(*Signed*) Tsan Cheng Yuan in the Capacity of the Legislature.

Subsequently Mr. Lung Chien-chang was dismissed from his post and ordered to come to Peking for trial and punishment. The reports received from the southern and south-western provinces during the early part of the month were reassuring. In some districts in Kwantung bandits attacked Customs stations and defenceless villages, but the troops remained loyal and the Military Governor reported that there was no ground for alarm.

No sympathy with the revolters in Yunnan was expressed in any responsible quarter in China, but as might have been expected, the rebel organs published in the foreign settlements and concessions professed to believe that the leaders of the revolt were animated by the purest patriotism. In Peking itself *Shuntien Jihpao*, a Japanese owned paper printed in Chinese, brought itself into notoriety by making grossly offensive personal attacks upon Emperor Yuan. Day after day the paper in question published false reports obviously designed to cause unrest and embarrass the Government. Owing to the incidence of extra-territoriality the Chinese authorities were unable to prevent this rebel propaganda from being carried on and a request to the Japanese Legation to take some action met with no response. This was in striking contrast to the action of the Chinese Government when the Japanese authorities directed their attention to some offensive remarks published by a Chinese newspaper in reference to Count Okuma. Heavy punishment was at once inflicted upon the offenders.

Although in itself not directly associated with the subject with which this article treats, reference must be made to a Mission to congratulate the Emperor of Japan upon his coronation that the Chinese Government proposed to dispatch. The Mission was to be headed by His Excellency Chow Tze-chi, Minister of Agriculture and Commerce. The Japanese Government apparently welcomed the decision to dispatch this Mission, and great hopes were entertained that it would result in improving the relations between the countries. All the arrangements were completed and some members of the Mission had already left Peking for Japan, when Mr. Hioki, the Japanese Minister in Peking, on January 16, the morning after he had entertained Mr. Chow at a valedictory dinner, announced that he was instructed by his Government to request the postponement of the mission. The reason assigned was that certain inconveniences were prevailing at the Japanese court. The view taken by the Chinese authorities is that, owing to the circulation of rumours by unscrupulous journalists, both Chinese and Japanese, an entirely erroneous impression was created about the Mission. Although it had no political bearing wha ever, Chinese rebels and their sympathizers declared that the Chinese Government was sending Mr. Chow to offer special privileges to Japan in return for the recognition of the Empire. In view of the fact that these rumours had gained wide credence in Japan, and that an attempt had l tely been made to assassinate Count Okuma, the Japanese Government feared that there might possibly be outrages on the part of Japanese and Chinese revolutionists. The Chinese Government in postponing the Mission has expressed its appreciation of the good-will shown by the Japanese Government. One good result of the incident has been that it has completely refuted the rumours that special privileges were to be offered to Japan.

Telegrams urging the Emperor to ascend the Throne without delay continued to pour into Peking. Among those who counselled this step were the Urga Hutukhtu and over 100 of the Mongol princes.

**Republican Appeals to Foreign Ministers**

The Republican, or what is now called the rebel leaders and partisans, are leaving no stone unturned to secure foreign sympathy or at least neutrality, and to this end have addressed communications to all the foreign Ministers in Peking. About January 22 the following identic communication was received from the Yunnan Chiang-chun Tang Chi-yao and the Civil Governor Jen Ko-cheng:

The Wuchang revolt broke out on October 10, 1911, and the different provinces followed the lead because the people of the country had long suffered from the oppression of monarchical government. They therefore rose up in a revolution over the question of the form of government. Recognition of belligerency was extended at this time by the friendly powers and neutrality proclaimed. The provisional Government was set up at Nanking and a government of the people established. The Manchu Emperor abdicated, the Republic was formed, and notifications were sent to the friendly powers. Later, when the regular assembly had been established and the organization of the government had been completed, recognition was extended separately by each of the friendly Powers who thereby earned the deep gratitude of the people of our country.

Unfortunately the present President of this country, Yuan Shih-kai, plotted to overthrow the Republic in opposition to the progressive sentiment in the country, against the advancement of civilization in the world, contrary to the promise of his oath of office, and without regard for the advice of the friendly Powers. We, Chiang-chun and Governor, in order to show respect for the Constitution and uphold the Republic, have despatched a loyal army against the national outlaw. We hope that the friendly Powers will maintain a benevolent neutrality that thereby the mutual friendship of long standing may be strengthened.

With compliments.

The Treaties entered into between the Republican Government and the Manchu Government and the different nations before the question of the Imperial form of government was raised will all continue in force and responsibility for indemnities and loans will be maintained as before.

We, the Chiang-chun and Governor, will be entirely responsible for the protection of the lives and property of the nationals of the different Powers residing within the limits over which we exercise control.

The Republic will not recognise any treaties, agreements, loans, etc., entered into between Yuan Shih-kai or his government and the different nations after the question of the Imperial form of government arose.

In case any of the Powers assist Yuan Shih-kai's government with contraband of war the same will be confiscated upon being discovered.

If officials, merchants, or people of the different nations commit acts to assist Yuan Shih-kai's government and injure us, the Chiang-chun and Governor, opposition will be offered.

Sealed By Chiang-chun of Yunnan Province.
Sealed by the Governor of Yunnan Province.
31st day of the 12th month of the 4th year of the Republic of China.

An identic communication as follows was received by Foreign Ministers early in January. It was signed by twenty ex-members of the National Assembly of the Republic of China, which was abolished by President Yuan Shih-kai on September 4, 1913;

We, the undersigned, respectfully beg leave to address the following communication to their Excellencies the Ministers of the Friendly Nations:

Yuan Shih-kai, ex-President of the Republic of China, by proclaiming himself Emperor, has brought disaster and ruin to the country. He has not only lost the confidence of foreigners but has also made himself the common enemy of the people.

Our fellow citizens in Yunnan and Kweichow have taken up arms with a view to bringing him to justice. Our righteous cause cannot fail to meet with response everywhere. He is now unable to cope with the popular movement.

According to newspaper reports he is willing to sacrifice our national interests in order to induce foreigners to recognise him as Emperor. This is giving rise to great consternation throughout the land. It is self-evident that no grant or concession to any foreign Power can be valid as against the Republic of China unless made in a legal manner by the Government of the Republic of China with the advice and consent of bona-fide representatives of the people. By usurping the Throne Yuan Shih-kai has *ipso facto* lost the qualifications of Chief Executive of the State. All dealings, therefore, between him and foreigners are his private affairs and cannot be considered as binding upon the people.

Since the establishment of the Republic our citizens have been brought into closer and closer relations with the friendly nations and great benefits will be derived through harmonious co-operation between China and foreign countries. We fervently hope that the Governments of the friendly Powers will not deliberately alienate the good-will of the whole nation by giving support to a tyrant.

We ask the favour of your transmitting this communication to your respective governments and peoples.

Respectfully submitted by (Signed) Ku Chung-hsien and Sun Hung-yi of Chihli; Li Shu-ying and Chao Shih-yu of Shensi; Pang Kai-shih of Hupeh; Pang Yun-yi, Chen Chia-hui and Ao-yang Chen-hsing of Hunan; Lan Kung-wu of Kiangsu; Wen Chun and Wang Han of Kiangsi; Tu Sze-yeh and Yin Yu-li of Chekiang; Wang Chien-kang and Wang Lu-pang of Anhui; Lin Shen of Fukien; Hsu Fu-lin and Yang Yung-tai of Kwangtung; Lan Tsin-yung of Kwangsi; Chang Yao-tseng of Yunnan, Members of the National Assembly of the Republic of China.

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In our last issue we inadvertently omitted to acknowledge the source of the translation of documents connected with our article on the monarchy movement, which was the *Peking Gazette*.

# SUGAR INDUSTRY OF PHILIPPINE ISLANDS

(By C. W. Hines, Sugar Technologist, Bureau of Agriculture, Manila, P. I.)

The production of sugar in the Philippine Islands for the year 1914 amounted to 370,000 long tons, the majority of which was made into the molasses type of muscovado sugar and sold under the name of "bayon" or "mat" sugar, "pilon" sugar and "panocha" sugar. In addition to this there was a considerable amount of centrifugal test sugar made as well as some high grade sugar from one refinery here.

### "Bayon" (Mat) Sugar

This is molasses sugar packed in "bayones" or palm leaf bags and for this reason is designated as mat sugar. The method followed in the making of this class of sugars is very simple, consisting only of clarifying the juice by the aid of a small quantity of dry slaked lime, and concentrating it in a battery of iron kettles during which time the lighter impurities rising to the surface are removed. The boiling juice is dipped from kettle to kettle until the final concentration is made in the last member of the battery. When this material has reached a heavy "string proof" it is dipped into a large shallow box or crystallizing tray and stirred about during cooling. In this manner a pulverized yellow or dark product is secured, the quality of which depends upon the original condition of the juice and the class of work during boiling.

Pilon Sugar in Store for Crystallization

These mat sugars are graded on polarization and are classed as follows:

No. 1 which polarizes 87 degrees or over.
No. 2 which polarizes 85 degrees to 86.9 degrees.
No. 3 which polarizes 82 degrees to 84.9 degrees.
No. 4 which polarizes 80 degrees to 81.9 degrees.
No. 5 which polarizes 76 degrees to 79.9 degrees.

Sometimes there is made a No. 6 or "Corriente" sugar which is a very low grade of molasses sugar.

Comparatively small amounts of these mat sugars, especially of the lower grades, find their way to the American refineries on account of their poor quality, and even then they are accepted only when there is a scarcity of centrifugal sugars to supply the demand.

### "Pilon" Sugar.

In some sections of the Philippines, mainly in the provinces of Pampanga and Tarlac, there is used a peculiar container which is known as a "pilon."

This is a bell-shaped earthern jar varying in capacity from 130 to 180 pounds of crude sugar. It is about two feet in height and one and one-half feet in diameter at the top. In the bottom of each of these jars is a hole about two inches in diameter, through which the molasses drains away from the crystals. When the sugar is placed in these containers a few pieces of bagasse or some clay is first placed in the bottom to prevent the heavy sugar solution from passing through and being lost.

The method followed in making this sugar is identical with that previously described, except that instead of dipping the heavy mass into a shallow box and constantly stirring until crystallized as is done with the bayon sugars, it is dipped directly into the pilones and set over smaller earthen jars of about one and one-half gallons capacity and left there until the sugar is to be transported to market.

This kind of sugar is largely used by the Chinese of Manila in making a semi-refined sugar called "Caramelo." The crude process of refining begins before the sugar is removed from the earthen jars. A layer of clay is first applied to the top and kept saturated with water, which assists in washing away the molasses adhering to the crystals and also to a certain extent in bleaching them.

Chinese in Manila making "Caramello" Sugar

The jars are then broken from the large lump of sugar, after which the white upper portion of sugar is dissolved, clarified with milk of lime and whites of eggs, and finally re-crystallized during constant stirring.

The crystallized mass is then cut, while still hot, into loaves and is used as a coffee sugar. It is not uncommon to find these sugars fairly white in color and polarizing over 99 per cent.

### "Panocha" Sugar

This peculiarly shaped sugar cake is made by molding the heavy massecuite into semi-spherical cakes when it has nearly cooled. Cocoanut shells are usually used as molds for this purpose, but sometimes metallic cups are also used.

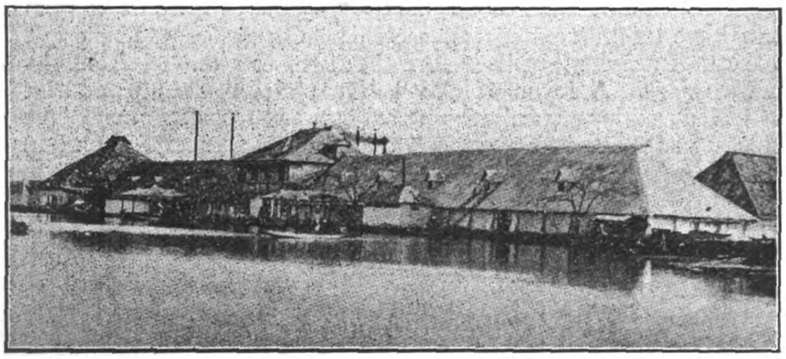
The clarification and evaporation work for this sugar is identical with that used for the "pilon" and "bayon" sugars. After the boiled liquor has reached a heavy density so that it will crystallize upon cooling, it is lifted from the fire and stirred about in the kettle until it has begun to crystallize and may be molded into form.

This sugar is largely used by the natives for home consumption. During the past year more than twenty-four thousand tons of this sugar, or about 6 per cent of the total sugar production, was consumed in this form.

### Centrifugal Sugars.

In addition to the old mills turning out crude sugars there are now located in the Islands a number of factories producing first centrifugal or test sugar. The past year marked the completion of the largest of these factories which is located at Canluban in the province of Laguna, about 35 miles south of Manila. This factory has a capacity of 1,200 tons of cane in 24 hours. The next largest factory is located at San Jose, near the southern end of the Island of Mindoro, with a daily capacity of 800 tons of cane. San Carlos in Occidental Negros ranks third with a capacity of 600 tons of cane per day. This factory started grinding only last year and is arranged so that it may readily be enlarged to more than double its present capacity. In fact, a material increase in the capacity of this factory will be made before the next grinding season

In the following list may be found a number of smaller factories; their locality and daily cane grinding capacity in long tons:



LUZON SUGAR REFINERY, LOCATED AT MALABON, SIX MILES FROM MANILA, PHILIPPINE ISLANDS

| | |
|---|---|
| Philippine Develop. Co., Calamba, Laguna | 300 |
| De la Rama Central, Bago, Occidental Neg | 300 |
| Guanco Central, Hinigaran, Oc. Neg | 300 |
| Carmen Central, Calatagan, Batangas | 250 |
| Pia Eugenia Cent., Tigbawan, Iloilo | 200 |
| Cabacalan Factory, Cabacalan, Oc. Neg | 150 |
| Dinaluphian Factory, Dinaluphian, Bataan | 125 |
| Canloan Factory, La Carlota, Oc. Neg | 100 |
| Talisay Factory, Talisay, Occ. Neg | 100 |
| Muntinlupa Factory, Muntinlupa, Laguna | 90 |
| St. Louis Oriental, Manaoag, Pangasinan | 70 |

In addition to the factories making crude centrifugal sugars there is one refinery, the Luzon Sugar Refinery, located in Malabon, Rizal province, about 6 miles north of Manila, which has a capacity of 25 tons of finished sugar per day. This factory turns out a beautiful white granulated sugar and uses for this purpose three classes of local sugars, viz., centrifugal test sugar, bayon and pilon sugars.

There is more or less sugar produced all over the Philippine Islands, but the Industry is developed along modern lines in only a few localities. Vast fertile areas are found in many sections which will some day become productive sugar regions. Many of these are now used for a single harvest of rice each year or lie fallow.

The following list shows the provinces which now produce sugar:

| Province | Hectares. | Metric tons. |
|---|---|---|
| Occidental Negros | 51,772 | 148,069 |
| Pampanga | 31,576 | 63,255 |
| Batangas | 13,816 | 22,007 |
| Iloilo | 13,208 | 34,355 |
| Tarlac | 7,164 | 15,806 |
| Ilocos Sur | 5,534 | 7,912 |
| Cebu | 5,103 | 10,500 |
| Oriental Negros | 4,594 | 12,136 |

*Equivalents*—The hectare equals about two and a half acres. The metric ton is only 35 pounds less than the long ton used in the U.S.

The above is a partial list from the chart prepared by the Bureau of Agriculture and does not, in all cases, show the total product of the sugar cane from the indicated area since there are omitted the columns showing the amount of basi (an intoxicating beverage) and the quantity of molasses produced from the cane juice. These amount to a considerable quantity in some sections of the islands.

The yearly export of sugar for the past sixteen years may be seen from the following table.

| Year Ending June 30 | Metric tons. | Year Ending June 30. | Metric tons. |
|---|---|---|---|
| 1899 | 57,447 | 1907 | 120,289 |
| 1900 | 78,306 | 1908 | 151,712 |
| 1901 | 56,582 | 1909 | 112,380 |
| 1902 | 67,795 | 1910 | 127,717 |
| 1903 | 111,647 | 1911 | 149,376 |
| 1904 | 75,161 | 1912 | 186,016 |
| 1905 | 113,640 | 1913 | 212,540 |
| 1906 | 125,794 | 1913 (July to) ( Dec. ) | 65,383 |
| | | 1913 ( Cal. ) ( Yr. ) | 236,498 |

It will be observed that the exports of sugar have grown each year until 1914 marked the maximum with 236,498 tons.

This increase is due largely to the development of new plantations and the adoption of more modern methods during recent years.

## CENTRALS FOR PHILIPPINES

Specifications for the P2,000,000 sugar central to be built at Isabela, Occidental Negros, have just been completed by the government sugar central board. The mill will be a 1,000 ton central of the most modern type, driven by electricity, and bids have already been called for.

An organization of Capiz planters embracing 10 of the most productive haciendas in that locality, has applied to the sugar central board for government aid in the construction of a sugar central to have a grinding capacity of 750 tons of cane per day.

## SUGAR PROSPECTS IN FAR EAST

At the present time, writes the U.S. Consul General at Hongkong, sugar prospects in the Far East are much brighter than usual. The Philippines promise a large crop, that of Negros and Panay probably reaching 4,000,000 piculs, or about 266,666 short tons, and exceeding all previous records. The Board having charge of the erection of sugar centrals in the Islands under the new plan of assisting such projects by loans from Government funds has decided to promote the erection of at least one new mill to care for the 1916-17 crop.

Prices of sugar all over the Far East have held up well, the demand in America supplementing the reviving demand in China and India. The Hongkong refineries have been crippled in their operation both by the restricted market in China and other consuming centers, and by the difficulty of securing raw sugar from Java and other producing countries. This has led to an increase in the import of sugar from the Philippines and from Chinese ports. The imports into the Colony for the first half of the current year are placed by commercial interests at 189,133 short tons, as compared with 270,333 short tons during the same period of 1914.

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## THE YUNNAN REVOLT

The all absorbing topic in China at the moment is the revolt of Yunnan against the "will of the people" to have a monarchical form of Government re-established. Opinions as to the importance of the revolt are varied. Those in whom the wish is father to the thought see in it the end of Yuan Shih-kai; others are confident that its development will culminate in the division of China into two separately governed States—North China as a Monarchy and South China as a Republic; while others look for restoration of so-called Republicanism.

The point of view depends entirely upon the locale of those expressing opinions. In Peking the idea generally entertained by the diplomatists is that the affair will "fizzle" out. Belief is firm that Yuan Shih-kai will prevail easily over those who have risen against him, and little importance is attached to what is characterised as "the vapourings of the malcontents who shelter in the foreign settlements and treaty ports." In Shanghai, in Hongkong, and naturally in the southern provinces, quite a contrary feeling obtains. Rumour has full play, and sensational development treads on the heel of sensational development to the entire bewilderment of the casual student of Chinese affairs. The result is the generation of desperate pessimism, and it is only the very few who will apply themselves to a thoughtful analysis of the conditions with the object of obtaining a true valuation of the actual situation. So the north remains placid and the south runs riot with its ideas; the result being reflected through the foreigners in either region.

Very few foreigners are competent to estimate correctly the whole situation, and certainly fewer are able to make a forecast of events with any surety. All, however, are able to, and do make haphazard guesses as to the outcome. The Japanese seem to be the most satisfied that their view of enlarged trouble is the right one. Some of them might be in a peculiar position to know, for among the numerous allegations that have taken wing on the wind are many that numerous Japanese are hand and glove in the enterprise with the object of making tools of confiding Republicans to work their own national ends upon China.

In this connexion it must be remembered that long after the Monarchy movement had been quietly proceeding,—at a time when no foreign legation in Peking had any news from the many consuls scattered throughout China that trouble was liable to break out,—it was the Japanese who approached other nations to proffer the "friendly warning" to China that unless the movement was stopped internal difficulties would arise. Japan may have possessed special means of knowing what was afoot; or she may have been cognizant of the Republicans' plans. Certain it is that she manifests a very touching interest in and solicitude for the welfare of China, particularly when the word welfare is defined as being of distinct and immediate benefit to the Japanese.

What has to be acknowledged is that China is regarded by Japan as under her tutelage, and what chiefly annoys Japan at the present time is that other nations seem obstinately to refuse to admit and accept that condition. Japan's attitude, therefore, complicates the whole of China's internal affairs, especially at such a time as this when Republicans are actively bent upon subverting the Peking government. For this reason more than any other it is impossible to forecast what aspect the revolt in Yunnan may take. Left to themselves it is not likely that the Republicans can overcome the forces at the disposal of Yuan Shih-kai, but given the active if veiled support of Japan they may be able to involve the whole country in devastation such as that which signalised the bloody march of the notorious Taipings. The regrettable and alarming feature is that certain rebel leaders are ready to accept assistance from Japanese to carry out their purpose, apparently failing to realise that for the aid thus loaned the full pound of flesh will be ultimately demanded, nor is any international Portia likely to interpose to avert the calamity involved in the fulfilment of the demand.

Before it is too late the Republicans will be well advised to discard all Japanese aid or proffers of aid in any shape or form, relying on the judgment of the Chinese people for assistance if their cause is right and the best for the country. In 1911 the

revolution which ended in the overthrow of the effete Manchu dynasty was backed by the broad common sense of the people. Because the Manchus had outlived their usefulness, because they were powerless to govern, because they rejected all prayers for reform the vast population of China acquiesced in their overthrow when the revolutionists struck at Wuchang and elsewhere. Conditions are different to-day. The forces who are now fighting for what they call a Republic must have stronger claims for whole-hearted public support than they possessed in 1911. They must not only have a more stirring rallying cry, but they must be able to provide guarantees that they will be able to serve the country better than the men who are working for wider popular participation in government through a constitutional monarchy. Without these their armed protest against the monarchical form of government will be of no avail, and will but serve to plunge the country in misery which will be intensified by pressure from Japan, whose obvious policy is to use any weapon and any combination of circumstances to rob China of her sovereignty and independence. Any loyal and patriotic Chinese would do well to search his heart and discard blind prejudice before he decides to participate in any revolt against the existing government. To make China strong required the united effort of all her people—articulate and inarticulate. Personal feelings should not be allowed to dictate action for a second. In the wreck caused by violent expression of passion the nation may easily go down to oblivion. By wise action, by sagacious foresight, by co-operation for the national good, by patient, peaceful plodding the young Chinese who now profess to believe that China is being injured by the restoration of a monarchical form of government could in course of time have assumed command of the State's affairs, but the lamentable rebellion upon which the unwise among them have now embarked is likely very seriously to set their country back, even if they succeed in their task, since its continuation will give greater opportunity for aggressive nations to assume the command in China which otherwise they would not dared to have done. Unhappily the die is now cast, and the Republicans must win or lose. To win they must fight their way through all the provinces to the Yangtsze, if those provinces fail to join the movement voluntarily, and if the Republicans are not content with a South China Republic they must continue shedding blood, burning and ravaging, to Peking. Words are not needed to describe the condition China will be in after such a campaign.

## JAPAN'S RESPONSIBILITY FOR CHINA'S TROUBLES

On January 21 the Waichaiopu (Chinese Foreign Office) notified the Foreign Ministers in Peking that statements made in the press of both China and Japan to the effect that the coronation of the Emperor-elect had been fixed for February 9 were unauthorised and incorrect. It was deemed advisable to make this declaration in view of the campaign being carried on in Japan with the object of convincing the Japanese Government that a predatory policy should be adopted with regard to China since that country had ignored the "friendly" advice tendered by the Entente Powers. On the extraordinary grounds that China had "flouted" Japan by proceeding with the preparations for the coronation the Japanese press and militarist party demanded, and were becoming increasingly insistent in their demand, that Japan should administer condign punishment. The state of politics in Japan, too, indicated that if the slightest excuse could be found to chastise China for minding her own business it would be availed of in order to avert the probable fall of the Okuma Cabinet by distracting public attention.

The Chinese Government therefore deemed it prudent to give no excuse for further unpleasantness with her neighbour and decided to make the situation clear. While nothing was said about postponing the coronation indefinitely the Powers who had put their finger in the pie at the behest of Japan were given to understand that the Emperor-elect had no intention of rushing the coronation, but intended instead to devote his time to restoring order within the confines of his country. No doubt this renewed assurance will be regarded both by the rebel elements and Japan as further weakness, and it will be surprising if the fullest advantage is not taken of it. Japan has given many intimations to the rebel section that she is not averse to their efforts to create continued disorder in the country, and the regrettable feature is that the rebels have been so short-sighted as to accept this dangerous sympathy. When Japan headed the first demarche the rebels unquestionably took the advice, offered as it was without any apparent reason, to be an intimation on the part of Japan that she, like them, also wished to see the overthrow of Yuan Shih-kai, and since that was followed by the Yunnan outbreak the "leaders" of which went direct from Japan to Yunnan, the responsibility largely rests upon her shoulders for the bloodshed and unrest caused by that unfortunate movement. The obvious moral is that if Japan is sincerely desirous of seeing peace and order obtain in China she should abstain from interfering with China's domestic concerns. That we are not alone in the belief that Japan is to blame for any unrest in China is shown by a striking article that recently appeared in the exceptionally well-informed *Japan Chronicle*. We quote:

"From the point of view of a group of Powers desirous of China remaining at peace, the presentation of the joint Note was a diplomatic blunder of the first magnitude. Three months before it would have been a different matter altogether, but coming at the time that it did, it could only make things worse. Interference in the internal quarrels of a nation has proved disastrous again and again, and should only be resorted to in the gravest circumstances, and there is no evidence that such circumstances had arisen in China. It is easy to foresee what will happen if the President fails to put down the present disturbance quickly and completely. The Powers will intervene to prevent further disorders, and the Powers, in this case, means Japan. As between the other Powers and Japan, it remains to be seen whether the simultaneous action will have the effect of maintaining their respective interests in China. About the same time as the Joint Note was presented, we heard of Japan joining the no-separate-peace treaty and being definitely promised a full voice in the peace discussions. Exactly how the advantages and disadvantages of these steps are calculated, and how they balance with the advantages or disadvantage of co-operation in the presentation of the Note, are matters which diplomatists have, no doubt, carefully weighed. One thing is certain—that any disturbance in China deemed sufficient grounds for Japanese interference increases influence in that country, and the present conditions are extremely favourable for such interference. It is only two years ago that Sir Edward Grey declared that Britain's chief interest in the Far East was to see a strong and united China, while it has been asserted a hundred times that the autonomy and integrity of China were the bedrock of Japan's Far Eastern politics. If diplomacy is moving towards these ends it is by a route of more than diplomatic deviousness. There are Japanese statesmen old enough to remember domestic revolutions in this country. One wonders how they would have regarded a joint Note in 1867 or 1868 demanding that the Restoration be deferred to a more suitable time. Their experience of what foreign interference those interested in embroiling the Shogunate with the Powers was able to achieve was not entirely happy or to be looked back on as adding to the national dignity. These memories, however, do not seem to have any influence on their China policy."

## JAPAN'S LATEST INSULT TO CHINA

Any layman may be pardoned who confesses to absolute mystification with regard to Japan's policy towards China, for international history provides nothing more complex than the tortuous course followed by Japan during the past eighteen months. So extraordinarily contradictory has her attitude with regard to China been that she is either bungling her diplomacy or she has decided upon a course calculated to inflict upon China the most startling surprises and most studied humiliations. While professing ardent friendship on the one hand, she wields a mailed fist on the other. In a fair way to develop trade relations with China calculated to outstrip in value those enjoyed by any

other older nation she deliberately perpetrates acts destined seriously to curtail the existing volume and absolutely threaten possible supremacy. As a result of the now notorious twenty-one demands and the consequent ultimatum Japan lost trade to the value of some thirty million yen within the short space of two months. Scarcely had the feeling which caused this loss subsided in China than other steps were taken which are destined to widen the breach between the two countries. Instead of solidly cementing friendship with China it would seem that Japan is bent upon engendering constant distrust and estrangement. The tie of common literature which should be a unifying agent, the advantage of centuries of association which should be the foundation stone of co-operative action, the many similarities marking the social life of both nations which should be a shield against exotic influences creating schisms, seem to be valueless in the hands of Japan. The reason is difficult to seek. If Japan is not merely clumsily dislocating her own chances out of sheer inability to solidify them she is deliberately pursuing a sinister policy of pin-pricking designed to sting China into providing the excuse for conquest, in which case the fact is made obvious that Japan has accepted the theory poetically described by Wordsworth in the lines "That they should take who have the power, and they should keep who can." A dangerous policy at best, but one the adventurous militarist party of Japan would seem to regard as profitable at the present juncture.

These reflections are caused by the latest snub which Japan has administered to unsuspecting China by calmly notifying the Peking government at the eleventh hour that it was advisable to postpone the mission of congratulation to the Japanese Emperor which China, in arrangement with Japan, had prepared to despatch. The Mission was to have been headed by Mr. Chow Tze-chi, the Minister of Commerce, Agriculture and Industry, and attached to it were to have been the heads of several departments who were to have investigated Japan's industrial development. Japan expressed pleasure when the mission was suggested, and later encouraged the Chinese by outlining the preparations which had been made to receive it. As the mission from Russia headed by the Grank-Duke George was also in Japan it was suggested to delay the Chinese Mission until His Majesty the Emperor could be free to give it proper attention, and finally it was arranged that the departure from China should be on January 19. All preparations were completed, and part of the suite had set upon its way when on January 15 the Japanese Minister telephoned to the Chinese Foreign Office announcing that he had received telegraphic instructions from Japan asking that the mission be postponed. On the following day the Japanese Minister personally called on the Foreign Minister and informed him that his instructions were that "as certain circumstances had arisen which prevented the Emperor receiving the mission" the government would be glad to have it postponed. It is significant that no explanation was tendered when this communication was made, but in a semi-official telegram from Tokyo it was stated that the postponement was requested because the Emperor would not be present in Tokyo at the date the mission was expected to arrive. An extraordinary suggestion, unless His Majesty were seriously ill, in view of the fact that the dates for the departure of the mission from China had already been arranged with the Japanese Government. Officialdom in Peking was naturally thrown into a state of bewilderment, and no satisfactory solution could be found by any of the foreign diplomatic corps for so sudden and unexpected an action, save and except the one that Japan undoubtedly was determined to show China the scantiest courtesy she could in any and all circumstances. A few days later, however, an official explanation was forthcoming from the Japanese government, and it was to the effect that while the Japanese Government knew that the mission was purely one of courtesy and was without political import, a certain section of the press of both countries had ascribed to it political motives, and had alleged that concessions were to be made to Japan by China to secure her support and recognition of the monarchy. In view of this and having regard for the fact that there were Chinese and Japanese who were anti-monarchists and fanatics who would plot against the mission, the Japanese Government deemed it wise to have the mission postponed since they were desirous that no harm should come to it, a possibility, they added, as was evidenced by the attempt in Japan on the life of Li Hung-chang, after the Sino-Japan war, and the more recent attempt upon the life of Count Okuma, the Japanese Premier, who a week before had been fired at as he drove in the streets.

This is, of course, a plausible excuse, but one which reflects seriously upon the ability of the Japanese Government effectively to police their own country, and consequently constitutes a striking commentary upon Japan's reiterated superiority over China in the organization and control of her internal affairs. It is a grave admission, too, that Japan knows that within her confines Chinese assassins plot with Japanese to destroy life, and yet takes no stringent action to arrest the plotters or curtail their activities. It is further an excuse which embodies a confession that the Japanese Government is just as helpless as it repeatedly alleged the Chinese Government is when it is confronted with some exceptional popular ebullition. In fact the Chinese Government felt no doubt about its ability to protect the Japanese Parliamentary mission which some time ago travelled through the country at a period when the Chinese populace had not nearly recovered from the insults it deemed were heaped upon it by the presentation of Japan's notorious list of demands and ultimatum. Though anti-Japanese feeling was running high, and people were subscribing large sums to a Patriotic Salvation Fund to defend itself against Japan, the Japanese parliamentary members, who might well have been accused of participation in the humiliation of China, traversed this land without one unpleasant incident, the amplest protection being afforded by the Chinese Government. Japanese business missions have also been similarly cared for without question, and at no time has the Chinese Government even thought of shirking responsibility by requesting the postponement of any particular pre-arranged or even unexpected visit. Apart from this, however, there is a point needing some explanation, and that is the delay in notifying China that it would not be expedient for the mission to sail. When it was suggested that the mission should visit Japan it was known to the Japanese authorities that there were rebels in their territory, it was also known that an attempt had been made upon the life of Count Okuma, Japan's Premier, and it was fully known that the Japanese press were strongly anti-monarchical as they are anti-anything which China might attempt to do without the acquiescence or consent of Japan. The warning which was so belated could therefore have been issued much earlier, and if it be contended that it was not until the eleventh hour that the Japanese authorities became possessed of definite information of some plot that was likely to be successful it is very curious that arrests were not promptly effected, at least as evidence of good faith. If Japan's excuse be true, then, the world must accept Japan's declaration that she really is unable to protect the lives of public personages who propose to visit the country as guests of the nation, if some would-be assassin or other is enterprising enough to precede his victim and arrange for assistance from what the Japanese Minister describes to the Chinese Government as "fanatical Japanese," a class, apparently, who enjoy some immunity from the grip of the law. What China is entitled to expect, however, is that the Japanese Government, now that it has been placed in the humiliating position of having to request the postponement of a visit of a mission from a friendly country because it cannot protect it, will leave no stone unturned to limit the possibilities for harm by the rebels and "fanatics" who seem to be terrorising it, and if the Japanese Government fails to do this it certainly would seem to be in order for the Chinese Government to follow the example of Japan and send a Note pointing out the grave state of affairs existing in the Japanese Empire.

If the explanation of Japan is but an excuse it is an unfortunate one, and no surprise need be felt that the Chinese place their own interpretation upon it. Rightly or wrongly the Chinese have come to believe that Japan burns the midnight oil planning how next she might bring humiliation upon their country. The Chinese press openly write of the postponement of the mission by Japan as an insult, and Chinese officials regard it as such. The result is likely to be, as it probably is intended to be, an inspiration to short-sighted malcontents in China to harrass the government, a development which by no means tends

to cement the friendly feelings which Japan so frequently talks about but so seldom exhibits. Foreigners whose business it is closely to watch international developments in this quarter of the globe can find little to say in defence of Japan's action, and most of them reluctantly conclude that it presages something more menacing. The concensus of opinion is that Japan, or a forceful party in Japan, is determined to create trouble in China which will afford excuse for the invasion of the country on the plea of protecting foreigners, and if that prevailing belief is incorrect it is distinctly due peaceful Japanese merchants that their Government disowns connexion with such an idea. Until Japan takes steps to suppress the continual vituperation which disfigures a large section of her press when they discuss Chinese affairs she will be suspected of unfriendly motives, and while suspicion is allowed to run rampant Japan need not be surprised to find a sustained falling off in her trade returns. It is realised by those who know the conditions in Japan that the mercantile and trading classes are averse to adventure in China, and that they abhor the cruelly irritating procedure adopted by the government towards their neighbour. They resent it because they are the ones who lose money as a result of it. The militarist party, however, are unmoved by the cries which try to halt their juggernaut. All that they see is a large army and what they believe to be the finest navy in the world lying idle while there are fair lands in China to conquer. Their desire is to turn on steam, and to go forward despite treaties, or alliances, or undertakings. The rest of the world is busy with its bloodshed or is too proud to dabble in such a thing, and the latter being recognised by the militarists they deem it a heaven sent opportunity, or as Count Okuma describes it "the opportunity of a thousand years," to go ahead and garner what is available in the way of ill-protected territory. The press make no bones about expressing themselves in this connexion and in blunt and sinister terms, and since they are permitted freedom of speech in urging an invasion of a peaceful friendly neighbour no one can be blamed for taking the most pessimistic view of the ultimate aim of Japan. It behooves all powers interested in the Far East, therefore, to keep a tireless eye upon events, and to be unceasing in their watchfulness until Japan clearly and unreservedly demonstrates that she as a nation harbours no predatory designs upon China but intends to uphold the solemn engagements she has entered into to safeguard the territorial integrity of China and respect her sovereign rights.

## SOME THOUGHTS FOR CHINA'S BENEFIT

In the last issue of this journal reference was made to the intention expressed in a Mandate to reform the *likin* system, or lack of system, which now obtains throughout the provinces of China. As an earnest of the sincerity of the Emperor-elect in this direction we were told that officials had been despatched to investigate the manner in which this curse was militating against commercial progress in the country. If the spirit which animates the ruling hand to act in this direction would but inspire it to undertake a thorough and deep inquiry into the state of all forms of taxation something might result to justify the good that is claimed will come of the present change in the form of government. The whole method of taxation in China screams so loudly for reform that the resultant noise deafens the ears of officialdom to the actual source of the sound. What are the heart cries of an oppressed people are misconstrued by the deaf and the blind, the complacent and the self-satisfied official as the blatant mouthings of political agitators or the echoing clamours of the ignorant masses who may be led astray by half-digested theories. This deplorable condition existed under the so-called Republican regime just as it did under the autocratic rule of the Manchus, and it will obtain under the new Monarchy (that already styled Hung Hsien—or Great Constitution) unless a relentless attack is made upon the very root of the evil. If the Emperor-elect will do but that one thing and do it well he need do nothing else completely to justify his assumption of Imperial prerogatives, though the immediate future bristles with a myriad opportunities for a courageous man to make his name and rule immortal.

As has been alleged of the great bulk of mankind, so of the Chinese provincial officials: they resemble the swine which in harvest gather and fatten upon the acorns beneath the oak, but show to the tree which bore them no other thanks than rubbing off its bark, and tearing up the sod around it. Always the docile, law-abiding, easily governed people of China have been regarded as fair game for iniquitous taxation. Nor did the so-called Republic better the condition one iota. If anything it intensified it. There has been an increase rather than a decrease of taxation; an intensification rather than an amelioration of the deplorable condition of the great masses who constitute the backbone of the country. In certain regions the oppression has been worse than in others. Any indication of prosperity has been followed by studied efforts in the shape of taxation to kill it. Just as the recent levying of new *likin* dues on certain railways in the east* promptly prostrated freight returns and caused a cessation of cargo shipments, so did short-sighted officials in the far north-west ruthlessly tax a newly developed trade, which was bringing into the region something like $200,000 per annum, until it was practically extinct. And in that self-same region indiscriminate taxation has now reduced the farmer to one square meal in two days. Whereas his cart was once taxed one sum for one year it is now mulcted in the same sum every five days. His horse is taxed going and coming; his grain is taxed in the ground and out of it; his pig is taxed alive and dead; its hide is taxed and its bones are taxed, and its despairing expiring squeal only escapes an impost because the tax-collector does not happen to be present when it gaspingly gives up the ghost. And for the money thus squeezed from the farmer what does he get? For roads he gets quagmires; instead of efficient police to protect him he is ravaged by bandits, who supplement the taxes of the officials with more taxation, or if he complains that his horse and cart have already been taxed to the limit of endurance he is deprived of both, and the products they were carrying to market are jettisoned by the bogside. On the other hand if he pays the bandits he is later on waylaid by "soldiers," for whose upkeep he is already squeezed dry by the district officials, and refusal to exhume the few remaining cash buried in the depths of his garments meets with the loss of his property or a brutal beating. One night an inn-keeper in this territory was beset with armed robbers. His son escaped, mounted a horse grazing near at hand, and rode through the night to the distant magistrate. He told of the sad plight of his home—and was arrested for spreading "false rumours," release being refused until his already robbed father paid a fine. "And I have no money now," wailed the broken parent, "so my son must stay in gaol."

This allusion to the state of affairs in many parts of interior China is not the product of an idle imagination. The actual happenings related above occurred in the region north-west of Kalgan. The whole country from Tatung to Kwahwacheng and the Yellow River is a hot bed of brigands who defy the officials, who ignore the soldiers, and who regard it as their right to levy toll on every person who feels called upon to travel or who has the temerity to live anywhere but in a walled city. Even when thus protected there is little safety, for when "revenue" is not forthcoming from the wayfarers and the isolated the brigands combine forces and attack some city, capturing and looting it.

It is with regret that we feel called upon to emphasize such a lamentable state of affairs, but we do so in the hope that the officials of the Central Government at Peking, and above all the Emperor-elect, will learn what is in all probability hidden from them by interested maladministrators in the interior. Defenders of Republicanism will require more than books of theory to explain away this grave state of affairs, and on the other hand, unless the Emperor-elect takes steps immediately to extirpate the cancer of corrupt practices in the outlying regions of the country the Monarchists will have to fight hard in the future to justify the new dynasty which they have inaugurated on the ground that better government will be possible and better times will be ushered in for the unhappy farmers and their

*See article on "Likin on the Tientsin-Pukou Railway."

families. Nor does iniquitous taxation and deplorably inefficient policing strike only at the farmers. All trade and commerce is so grossly and insistently obstructed that the marvel is that anarchy does not openly prevail. What trade is done in these regions is done in spite of the *soi-disant* protectors, and superficial order is kept among the toilers not as a result of the administration of the law, for there is but lawlessness, but simply because of the innate peacefulness of the long-suffering people.

Ample justification will be afforded the Monarchists, however, if strong measures are inaugurated to exorcise the curse that seems to hang over so much of the country. And the measures that might be taken to this desirable end are so simple, so easy of adoption, and so fraught with immediate benefits that it is difficult to understand why they were not introduced long ago. The excuse given by Peking has been that the alleged liberty and equality which are supposedly the public right under a Republican form of Government have been misinterpreted as individual license to disregard laws, or to interpret them as suits the individual taste, and to regard as an equal the Chief Executive of the State.

We do not admit, however, that Republicanism in China has been given a fair trial. It has not. It has failed, first, because the people are ignorant, and, secondly, because Young China developed no leaders with capacity properly to inaugurate the new regime. What masqueraded as Republicanism was a Dictatorship, and Young China could take no steps successfully to supplant it with the ideal conditions which constitute their dream. Their efforts have painfully proved the old dictum that attempts at reform which fail simply strengthen despotism. A mass of evil has sprung into being which we fear cannot be removed except by what Young China regards as a step backward, and we take it that since the young enthusiasts must have the state of their country really at heart they will be more than glad, if they are wise, to see some semblance of legality bestowed upon a form of government which is at once obnoxious to them in its illegality and irremediable by any other means. Those in power under the pseudo-Republic, supported by a large public opinion, both Chinese and foreign, are convinced that the evils which have sprung up in recent years cannot be extirpated without a change in the form of government, and if that be true and the suggested change can efface them it is better that it take place immediately and be supported by all Chinese for the sake of the future of their great country. It has been argued by those who are in power that monarchical rule will bestow the authority necessary to enforce laws as they should be enforced. That remains to be seen, but in lieu of other means the test should be permitted and be supported. Much, however, depends upon one man. It is averred that he could have accomplished more as President. He on his side indicates that beyond a certain distance he could not go, but now the great onus is directly upon his shoulders of proving that under a Monarchy the elements that exist in China for the establishment of a properly governed State will be wisely used and promptly employed. Out of comparative chaos it is for him to devise the means to produce order, and if he is able to reform conditions he will have earned his throne a hundredfold and will have merited the unquestioning allegiance of all his subjects. Great tasks lay ahead to be done, and the outstanding one is the regulation of taxation, the crying evils of the irregularity of which constitute the opening phase of this article.

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Bold and courageous action must be taken at once by the Emperor-elect to prove to the people of China and the nations at large—who are keenly interested spectators of the drama unfolding in this land, despite the devastating war upon which most of them are embarked—that the mere glamour of a crown, is not what alone attracts. He must have a strong arm to strike for an extended range of civil privileges, for a broader basis of government and for the general well-being of the great masses who are destined to toil and to suffer under existing conditions. There must be an earnest development of commerce and industry, an uplifting of mental and moral qualities by systematized and wider education, and above all the inculcation of the understanding that the official holds his office for the good of the people rather than for his own personal aggrandisement. A weak man might well tremble at the thought of the great work that lies ahead to be performed. Yuan Shih-kai is credited with being a strong man—the only strong man China has produced in recent times. Hitherto he has enjoyed the advantages of the excuse of lack of freedom of action in effecting widespread and radical reforms. Such excuses do not now exist, and having risen to the highest place of power and privilege any State can offer it is to be expected that deeds will replace the words of the past, and effective steps will be taken to elevate China to the level she ought to occupy in the comity of nations. Dilatoriness on the part of the Emperor-elect now will but condemn him in the eyes of his own people and those of other nations, but those who know Yuan Shih-kai best assert without reservation that he is anything but slothful. Determination is the quality that has elevated him to his high position, and unless he has absorbed it all in his long climb upwards it is but right to assume that his talents will soon have full play in the best interests of his country.

First on his list of reforms he should place the regulation of the finances. A progressive, modern educated Minister of Finance should be installed to reform taxation. Expert foreigners with administrative experience should be employed and endowed with executive power to regulate collections, to systematize accounting and to contrive that all moneys belonging to the State should go to the use of the State and not partly to individual officials. Irresolution with regard to reform of currency should be replaced by activity under expert guidance, aiming first at standardising the dollar throughout the country. More than half of China's woes have been caused by the haphazard character of taxation and its oppressive incidence. An ignorant, short-sighted Minister of Finance having power to tax hither and thither has, *ipso facto*, the power to do infinite harm, and the Emperor will do well to inaugurate his reign by bestowing this important portfolio upon a man capable of using the best foreign guidance available for a general reconstruction of the faulty system now in use. And the Emperor-elect should go even further than that: he should see that in the future no Minister of Finance should have the power to impose taxation without the consent and approval of Parliament.

Step by step with reform of taxation should come an absolute change in the police system, and in order to make the administration thoroughly effective the recently promulgated regulations for the civil service should be strictly enforced. To be a better country it is vital that China should have better officials than the majority of those who now inflict themselves upon her. The widest use should be made of the students who have studied abroad, each in his proper place, so that the learning they have acquired might be utilised for the State. There is a belief extant that Yuan Shih-kai is averse to the returned student on account of the alleged revolutionary proclivities of that class. We are inclined to believe that responsibility for this unhappy development is due more to officialdom than to any foreign teaching. Young men have returned from the outer world filled with hope and confident of being able to employ their talents for the improvement of their backward country, merely to meet the cold shoulder of scorn from officials whose ignorance even of what ought to be their simple duties is colossal. Many have found themselves ruthlessly relegated to the background or compelled to follow the course of "old custom" with all its iniquities, and in these, no doubt, the slow fire of hatred of everything connected with the benighted mandarinate has smouldered dangerously and has occasionally burst into flame. Yuan Shih-kai, has, however, in the past been the champion of the progressives, and it would be peculiarly strange if now that he mounts the throne via the shoulders of this class he should hesitate to utilise them to the full. One thing the Emperor-elect owes them is the widest consideration, for if China is to progress at all she must do so with the aid of these foreign educated men. Of this Yuan Shih-kai is fully aware, and we hope that it can be taken for granted that the future will see a distinct change from past policies in this connexion. Yuan Shih-kai's own future success depends as much upon it as does the welfare of the country. The returned students do not want power so much as they want

to see those in power adopting progressive measures. If they can participate in a forward programme making for the upbuilding of the nation they will be content, malgre the agitations of the irreconcilables, who, like the poor, are sure always to be with us. Emperor-elect Yuan Shih-kai has it in his hands to become the greatest man China has produced, and opportunity is knocking loudly at his door. The question is: Will he open and give it welcome?

## SIR RICHARD DANE

China is to be warmly congratulated upon having prevailed upon Sir Richard Dane, K.C.I.E., to continue his work as Associate Chief Inspector of the Central Salt Administration for a further three years. Sir Richard's existing agreement expires in June next, so the new arrangement means that he will be able to perfect the system which he has been inaugurating the past two and a half years. To acquire a thorough first-hand knowledge of the intricate salt system of China Sir Richard made it his business personally to visit and inspect all the salt production areas, even undertaking the long and arduous journeys involved in a visit to the remote provinces of Yunnan and Szechuan. The knowledge and information and experience by thorough inspection of the sources of supply, coupled with close investigation of the methods in vogue of handling salt and the taxes collected thereon, make Sir Richard invaluable to the Chinese Government in the great work of organizing this important industry. It constitutes China's oldest and greatest source of revenue outside of the land tax, and the result of the reform thus far carried out has been the collection of the highest salt revenue so far actually recorded, the net figures for last year being given in another column in this issue. It is anticipated that a continued increase will mark the further reforms that it is proposed to inaugurate, especially if the Ministry of Finance accords the assistance and unfettered freedom of action which is needed effectively to administer the service. It is pleasing to record that Sir Richard Dane has gained the complete confidence of the Chinese Government and the admiration of all who wish to see this great country become well-established. His peculiar faculty of getting on with the Oriental has stood him in good stead, and what he has been able to do he has done without heart-burnings or bluster. His record is one which has earned him warm gratitude, a fact well exemplified by the following terms accorded him to remain in China:

1.—The agreement will be renewed for another three years from first June, 1916.

2.—The Chinese Government will pay the sum of £10,000 as bonus to the said Adviser on the termination of the existing agreement.

3.—Another £5,000 will be paid to him after the termination of the renewed three years agreement in 1919.

4.—Free house will be provided by the Chinese Government.

5.—In Provinces where railway communications exist, the Chinese Government shall provide special cars whenever the said Adviser proceeds to the Provinces for the inspection of the various Salt Inspectorates.

6.—In order to show the appreciation of the Chinese Government, the travelling expenses of the said Adviser from Peking to England and back shall be paid by China when he returns home to enjoy his well-earned holiday.

7.—The Chinese Government shall give seven months' leave of absence to the said Adviser during the continuance of the next three years on full pay.

Nor have Chinese alone to be satisfied that Sir Richard will continue in connexion with the Salt Administration. His presence is a tower of strength to the Bankers who have in hand the interests of the holders of loan bonds secured upon salt revenue. Likewise his performance to-date is an excellent and convincing object lesson to the Chinese Government in the matter of giving responsible foreigners power to institute modern methods. He has proved to the Chinese beyond cavil that a responsible foreigner charged with important and far-reaching work will guard the interests of China as he would those of his own country, and that he will apply himself to the task he has taken in hand as whole-heartedly as if he were connected with the enhancement of his own national wealth and prestige. While felicitating the Chinese upon retaining the services of Sir Richard Dane we might express the hope that more men of his kind be engaged to assist in the re-organization of other important departments of the administration.

## THE FINANCES OF CHINA

The war that is shaking Europe to its foundations has necessarily reacted to some extent upon China's finances. The entire cessation of imports from Germany and Austria-Hungary, and decreased production in the countries associated in the Entente, combined with the scarcity of shipping, could not fail to have a prejudicial effect on the revenue from the Maritime Customs. Exchange has also been unfavourable for China. In such circumstances a considerable falling off in the Customs revenue was expected, and general surprise is expressed at the announcement that the decrease has only amounted to Tls. 2,165,000. The total collection reported is in round figures Tls. 36,742,000 (at average exchange 2/7⅛ equivalent to £4,764,978) as compared with Tls. 38,907,000 (at average exchange 2/8¾ equivalent to £5,309,184) in 1914. The following are in round figures the collections at the principal ports.—

| | | | | | | |
|---|---|---|---|---|---|---|
| Harbin .. | .. Tls. | 1,124,000, | an increase of | Tls. | | 84,000 |
| Dairen .. | .. ,, | 1,740,000, | ,, ,, | ,, | ,, | 154,000 |
| Tientsin & Chinwangtao | .. ,, | 4,730,000 | a decrease | ,, | ,, | 291,000 |
| Hankow | .. ,, | 3,867,000 | an increase | ,, | ,, | 177,000 |
| Shanghai | .. ,, | 11,410,000 | a decrease | ,, | ,, | 651,000 |
| Swatow .. | .. ,, | 1,296,000 | ,, ,, | ,, | ,, | 187,000 |
| Canton .. | .. ,, | 2,398,000 | ,, ,, | ,, | ,, | 458,000 |

In view of all the circumstances the Chinese Customs have done remarkably well, and it is satisfactory to learn that all foreign obligations secured upon the revenue from this source have been fully met to December 31, 1915. As is generally known the greater part of China's foreign indebtedness is secured upon the Customs revenue. Apart from the Boxer Indemnity, which calls for about three and a half million pounds sterling for interest and amortization, there are heavy calls for the service of the Japanese War Indemnity loans.

For many years the Customs revenue was the mainstay of China's finances. The Customs was the one department that could be relied upon to turn over to the Government its total collections without improper deductions. While it has in no way lost this praiseworthy characteristic it has now to share its honours with the Salt Gabelle. In fact last year, for the first time, pride of place as the foremost revenue producing department passed to the Gabelle. The increase in the revenue producing capabilities of the monopoly since the Revolution has been remarkable. Owing to the slack and corrupt methods of collection the salt taxes in the Manchu days produced an inadequate amount of revenue, although the gross sum extorted from the consumers probably ran into big figures. Since the reorganization of the department in 1914, which was carried out by Mr. Chang Hu and Sir Richard Dane, the proceeds of the taxes have not been subject to illegal deductions, with the result that the net revenue for the year ended December 31, 1915, was $69,278,000.

We give hereunder the outstanding figures which show an extremely healthy state of affairs, particularly when it is remembered that the total collection of last year, $69,278,000, represents *net* revenue, as compared with *gross* revenue in the case of the Maritime Customs figures. These returns show a substantial advance on 1914, when they were about $60,000,000, and there is every reason to suppose that they are capable of further expansion. The system of collecting a direct consolidated duty before the salt leaves the works or before it leaves depots appointed for its storage and issue to the trade has now been almost uniformly introduced, and it is to this system that the very large and unexpected revenue may be ascribed. It will be noted that after meeting all charges and obligations the salt account closed the year with a balance on the credit side of $24,385,000, out of which $6,500,000 was advanced to the government for administrative purposes in the beginning of January, 1916, and a further $2,000,000 towards the end of the month, leaving a credit balance in the Group Banks of some $15,885,000. As the bulk of the Boxer Indemnity for 1916 will have to be paid from the salt revenue it is necessary to hold a large balance for the purpose, for which reason larger sums are not released to the government at this time. In 1915 the substantial

sum of $27,788,000 was paid on behalf of the Indemnity. The amount paid out in connexion with the Reorganization Loan, for which the salt revenue is the security, does not represent all that was paid by the Government, the interest due in the first six months of 1915 being paid from the reserve coupons held by the banks in England. The following is a statement of the Salt Revenue Account for 1915.

| | |
|---|---|
| Balance in the Banks on January 1, 1915 .. .. | $17,328,000 |
| Interest.. .. .. .. .. .. .. .. | 197,000 |
| Net Revenue collected during 1915 .. .. .. | 69,278,000 |
| Total .. .. | $86,803,000 |

*Charges and obligations:*

| | |
|---|---|
| Boxer Indemnity .. .. .. .. | $23,788,000 |
| Chihli Bond .. .. .. .. .. | 731,000 |
| Crisp Loan Coupons.. .. .. .. | 2,999,000 |
| Reorganisation Loan.. .. .. .. | 6,932,000 |
| Hupeh Bonds .. .. .. .. | 149,000 |
| Miscellaneous Withdrawals.. .. .. | 23,000 |
| Releases to Government .. .. .. | 27,523,000 |
| Exchange .. .. .. .. .. | 273,000 |
| Balance @ 31/12/15.. .. .. .. | 24,285,000 |
| Total | $86,803,000 |

Detailed figures in regard to the revenue from the State Railways is not available, but it may be assumed that even if the income from this source is not considerable it is on the up grade. Many of the lines are already paying handsomely and, when necessary connections and extensions have been made, others will become revenue producers. The war has, of course, greatly interfered with construction work, but it may be anticipated that with the return of peace capital will again become available in view of the splendid returns afforded by investment in Chinese railway bonds. It might be suggested that in view of the excellent results obtained in the Customs and Salt Departments by making use of the services of foreign experts in the actual administration the same system should be applied to the railways. There would be nothing derogatory to the pride of China in the adoption of such a course, and it is certain that great benefits would accrue. Other countries in which the railways are owned by the State have not hesitated to engage the services of foreign experts and to give them full control. In Australia for example, expert Commissioners were engaged in America and given the most comprehensive powers. Japan, also, did not hestitate in the past to make use of the wider knowledge and experience of foreign railwaymen.

The significant fact in regard to China's finances is that she has not only been able to meet all her foreign obligations during 1915, but has also found it possible to set aside sufficient for the service of her internal indebtedness. Her credit consequently has been strengthened and there seems just reason for the belief that she will be able to make ends meet during 1916. The Budget (which we publish elsewhere) provides for the raising of only $20,000,000 by domestic loans, and no difficulty should be experienced in procuring this sum. It is interesting to note that, according to the Budget, the national revenue for 1916 will be $471,946,710. Assuming the population of China to be 400,000,000 this means about $1.18 per capita. The per capita taxation in Japan, according to Japanese statisticians, is about Y8.7. The difference is striking and suggests that what may be called the financial reserve of China is enormous.

## CHINA'S BUDGET

The Central Government of China, having obeyed the "will of the people" in respect of the establishment of a Monarchy, signalised the arrival of 1916 by decorating it with the dynastic name of Hung Hsien, and by providing a budget to cover its financial possibilities. In the course of a Mandate promulgating the Budget it was said: "Since the promulgation of the Budget of the First Year of Hung Hsien, all the officials concerned should remember that the Government funds are collected from the 'blood of the people.' The saving of one cent in the administrative affairs means the accumulation of one additional cent in the financial resource of the people. Therefore all the officials are hereby instructed that all the receipts and expenditures should be managed in strict accordance with the stipulations in the Budget, and no extravagance or extortion should be tolerated so that the good wishes of the Government in the love of the people and the exercise of economy in respect of the effective enforcement of the constitutional administration may be carried out."

The Budget is as follows:

*A. Receipts. Ordinary*

| | | |
|---|---|---|
| a. | Land tax ... ... ... ... ... ... | $ 95,972,818.00 |
| b. | Customs revenues ... ... ... ... ... | 71,320,970.00 |
| c. | Salt revenues ... ... ... ... ... | 84,771,365.00 |
| d. | Goods tax ... ... ... ... ... ... | 40,271,368.00 |
| e. | Principal and miscellaneous taxes like title deed tax, tobacco tax, wine tax, tea tax, pawnshop tax, etc. ... ... ... ... ... | 32,341,704.00 |
| f. | Principal and miscellaneous duties such as tobacco and wine duties, rice duties, silk duties, butchery duties, house duties, etc. ... | 14,067,574.00 |
| g. | Government property income like government enterprises, government shares, house and land rentals, etc. ... ... ... ... ... | 2,621,261.00 |
| h. | Miscellaneous income in the provinces like home affairs, receipts, financial receipts, judicial receipts, interest on government funds, etc. ... ... ... ... ... ... | 6,927,694.00 |
| i. | Central organ receipts like Foreign Office receipts, ministry of interior receipts, ministry of finance receipts, etc. ... ... ... ... | 1,635,464.00 |
| j. | Central government direct receipts like stamp tax, tobacco and wine license tax, title deed inspection fee, income tax, etc. ... ... ... | 76,306,927.00 |
| | Total receipts ... ... | $426,237,145.00 |

*B. Receipts. Extraordinary*

| | | |
|---|---|---|
| a. | Land tax and supplementary levyings... ... | $ 1,580,695.00 |
| b. | Customs revenues ... ... ... ... ... | 847,359.00 |
| c. | Goods tax fines ... ... ... ... ... | 18,716.00 |
| d. | Rice duties and miscellaneous duties ... ... | 4,496,333.00 |
| e. | Government enterprise receipts... ... ... | 16,703.00 |
| f. | Miscellaneous receipts in provinces, like fines, | 338,253.00 |
| g. | Central organs receipts ... ... ... ... | 1,359,698.00 |
| h. | Central government direct receipts ... ... from sales of public properties. | 17,051,808.00 |
| i. | Public loans, internal loan, ten million industrial loan, ten million total loans ... ... | 20,000,000.00 |
| | Total receipts ... ... ... ... | 45,709,565.00 |
| | Grand Total Receipts ... | $471,946,710.00 |

*C. Expenditures Ordinary*

| | | |
|---|---|---|
| a. | Ministry of Foreign Affairs ... ... ... | $3,276,677.00 |
| b. | Ministry of Interior ... ... ... ... | 49,653,982.00 |
| c. | Ministry of Finance ... ... ... ... | 53,531,625.00 |
| d. | Ministry of War ... ... ... ... ... | 135,813,986.00 |
| e. | Ministry of Navy ... ... ... ... ... | 17,101,779.00 |
| f. | Ministry of Justice ... ... ... ... | 7,665,772.00 |
| g. | Ministry of Education ... ... ... ... | 12,611,583.00 |
| h. | Ministry of Agriculture and Commerce ... | 3,762,244.00 |
| i. | Ministry of Communications ... ... ... | 1,577,408.00 |
| j. | Board for Mongolian and Tibetan Affairs ... | 947,230.00 |
| | Total ... ... ... ... ... | $285,942,286.00 |

*D. Expenditures. Extraordinary*

| | | |
|---|---|---|
| a. | Ministry of Foreign Affairs ... ... ... | $ 826,141.00 |
| b. | Ministry of Interior ... ... ... ... | 2,105,864.00 |
| c. | Ministry of Finance ... ... ... ... | 175,302,789.00 |
| d. | Ministry of War ... ... ... ... ... | 6,438,727.00 |
| e. | Ministry of Navy ... ... ... ... ... | 102,758.00 |
| f. | Ministry of Justice ... ... ... ... | 45,572.00 |
| g. | Ministry of Education ... ... ... ... | 225,724.00 |
| h. | Ministry of Agriculture and Commerce ... | 376,792.00 |
| i. | Ministry of Communications ... ... ... | 112,783.00 |
| j. | Board for Mongolian and Tibetan Affairs ... | 40,000.00 |
| | Total ... ... ... ... ... | $185,577,150.00 |
| | Grand Total expenditures ... ... | $471,519,436.00 |

## REVISION OF CHINA'S MINING LAWS

The present Minister of Commerce, Agriculture and Industry, by whom are handled the mining affairs of China, has determined to have the mining regulations revised by experts. A set of regulations was promulgated some time ago, but failed to

meet with a favourable reception, many of them being regarded as unworkable, or at least unacceptable to foreign capitalists. Efforts have been made from time to time to induce foreigners to invest capital and employ their experience in developing mines in China, but unhappily a *modus vivendi* could never be reached owing to the requirements of the laws. The foreign diplomatists also turned their faces against the regulations with the result that there has been practically no advance made in the opening of the mineral wealth of the country. So incessant has the demand been for a revision that Mr. Chow Tze-chi has determined to see what can be done, and with the object of having the best talent available he has secured the services of Mr. Lindsay, K.C., who has had wide experience in mining law and its application in various parts of the world, and who was engaged as legal adviser by the British financial group composed of Messrs. Pearson and Son, Ltd., the British and Chinese Corporation, Ltd., and the Central Mining and Investment Corporation, Ltd., in connexion with their negotiations with the Chinese Government for mining rights in the province of Szechuan. In the work of revision of the mining laws Mr. Lindsay will have co-operating with him Dr. Anderssen and Mr. A. S. Wheler, the advisers to the mining department.

## REDEMPTION OF THE "HONGKONG GOVERNMENT GOLD LOAN OF 1905"

It will be remembered that in order to redeem the franchise for building the Canton-Hankow Railway from the American-China Development Company, some eleven years ago, the Chinese Government had to buy up the shares of, and the gold-dollar bonds issued by that Company. For this purpose, the Government borrowed £1,100,000 from the Hongkong Government. In the Agreement it was provided that besides paying interest half-yearly, the repayment of principal should be made by ten equal instalments, payable once every year. These obligations have been punctually met by the proper authorities during the last ten years. The last instalment of principal and interest, which became due on December 6th, 1915, was also duly paid by the Ministry of Communications and the Kuangtung Railway Company; so the so-called Hongkong Government Gold Loan of 1905 of £1,100,000 is now entirely liquidated.

## THE FOSSILISED DRAGON

In connexion with the story of the discovery of supposed fossil remains of dragons in a cave on the Yangtsze River near Ichang, which we published in last issue, the following Mandate issued by the President may prove of interest:

"Wang Chan-yuan and Tuan Su-yun (Chiangchun and Governor of Hupeh) in a telegraphic memorial state that they have received from the Chamber of Commerce, the Directors of Schools and the local gentry, in Ichang, a petition in which it is stated that 'Recently some Europeans have entered deeply into the Shen-k'an (Divine Inclosure) cave and discovered in it a stone with the shape of a dragon lying coiled on the ground about more than 50 Chang (500 Chinese feet) in length. Study reveals that this is the remains of a real and living dragon in ancient times which afterwards transformed itself into a stone fossil. This discovery signifies the dawn of a new era like the rising of a dragon and the laying of the foundation rock of the dynasty for myriads of ages. Moreover, the timely appearance of the stone remains of the divine dragon on the bank of the River is a sign of the grace of Heaven and the rejoicing of the people on earth over the present issue of the Government. Therefore, it is sincerely requested that the Chiangchun and Governor of the Province should telegraphically report this phenomenon to the Throne to be recorded by the Historigraphical Bureau so that the incident may reach the knowledge of future ages as an appreciation of the favour of Heaven and the wishes of the people, etc.'

"From ancient times to the present moment the prosperity of a country invariably depends upon the exercise of care, diligence, caution, and discipline on the part of the ruler. It is only by the proper reform and enforcement of the administration that every individual of the people will receive benefit from the Government. The mere talk of emblems and influence of good omens, such as in ancient times the appearance of the Yellow Dragon, the coming of the Divine Birds, and the calling of Phœnix, and the falling of the Sweet Dew, which, taking place in various dynasties, have really no bearing whatever upon the peaceful administration or otherwise of the country. In now-a-days when every line of science has been greatly advanced, everything should be studied according to the truth, how can it be possible still at the present time to discuss and make much of what is merely a matter of superstition and to infer therefrom the emblem of peace and prosperity? Consequently the request to have the discovery of the stone dragon recorded by the Historigraphical Bureau as a sign of good omen, shall not be considered. This relic discovered in a deep cave among the high mountains may offer a good subject for scientific study. Therefore, the Chiangchun and the Governor of the Province should instruct the local authorities to carefully protect and preserve this fossil for the examination and study of geologists. As the question of misery and welfare connected with the lives of the people is constantly in my mind, I (the President) start my daily work early in the morning and continue meditating in the late hours of the night in the sole hope that the mass of the people may have happiness and prosperity, and these are signs of a good omen. It is sincerely expected that all the civil and military authorities, scholars and gentry will take note of and appreciate my view regarding the discovery."

## FORESTRY EXPERTS FOR CHINA

In previous issues of this journal we have referred to the steps being taken by the present Minister of Commerce, Agriculture, and Industry, Mr. Chow Tze-chi, to inaugurate a system of reafforestation. A new bureau has been established in connexion with the Ministry solely to deal with this work; and to facilitate progress and have programmes systematised two foreigners have been appointed who have been selected for their knowledge of afforestation methods. One is Mr. Sherfesee, who has resigned from the Directorship of the Bureau of Forestry, Philippine Islands, to become Co-Director of the Chinese Bureau of Forestry, and the other is Mr. William Purdom, who has had wide experience not only at Kew Gardens, England, but for the past six years in the provinces of northern China. In this respect his practical knowledge should prove of very great benefit to the government, acquired as it was in actual work in the fields searching for plant life for scientific organizations. His intimate knowledge of the possibilities of aboriculture in northern China can be put to immediate use, as a consequence of which the government should be able to obtain results much earlier than would otherwise be possible. The engagement of these two practical men is an earnest of the government's intention to tackle the important work of planting the vast bare spaces of China, a work which has cried for generations for attention but which up to now has been utterly disregarded.

Temporary regulations for the Forestry Department were published on January 21. They provide that the Vice-Minister of Agriculture and Commerce shall act concurrently as Director of the Department of Forestry and he shall be assisted by two Assistant Directors, and experts in afforestation. The various provinces and Special Administrative Areas are to be regarded as Afforestation Areas for the time being, and in each one a special official is to be appointed to manage afforestation affairs, under the direction of the Governor and the Director of the Forestry Department. The provincial expenditure on afforestation is to be provided for in the budget of the provinces, and each Hsien (or district) is instructed to make a contribution of more than $200 annually for the promotion of plans for the cultivation of forests. The Forestry Department is to be responsible for the improvement of the revenue of the forest tax, and is to submit to the Throne suggestions for the procedure, etc., in connexion with the collection of timber taxes. The Forestry Department is to be divided into five sections, the staff of the various sections to be arranged according to the sum provided for in the annual budget of the Department.

# THE "OPEN DOOR" IN KOREA

## Japan's Studied Abrogation of a Policy to which She Solemnly and Explicitly Pledged Herself

*The following striking exposure of the manner in which Japan has studiously laboured to exclude foreign interests from Korea, in which country she pledged herself to maintain the "open door" is taken from the "Japan Chronicle," a British newspaper published in Kobe, which enjoys the distinction of being regarded as the highest authority on Japanese affairs printed in Japan :*

It will have been seen from statements made in our columns that a further step has been taken in the direction of confining the commercial exploitation of Korea to Japanese subjects. By the revised Mining Ordinance relating to Korea recently published, mining rights will henceforth be denied to foreigners. Under the Mining Law hitherto in force, mining concessions were granted to foreigners as well as to Japanese subjects, and many foreigners have been engaged in mining enterprises in the peninsula not only by virtue of that law, but as the result of concessions granted under the former Korean Government and the declaration of the Japanese Government when taking over control that there was no intention to interfere with the commercial interests of foreigners in the country. There can be no question as to the explicit nature of the assurances then given. In a statement made in a Japanese official document, the "Annual Report for 1907 on Reforms and Progress in Korea," it is declared that "the so-called 'open-door policy' in Korea has been from the very beginning maintained by the Japanese Government.

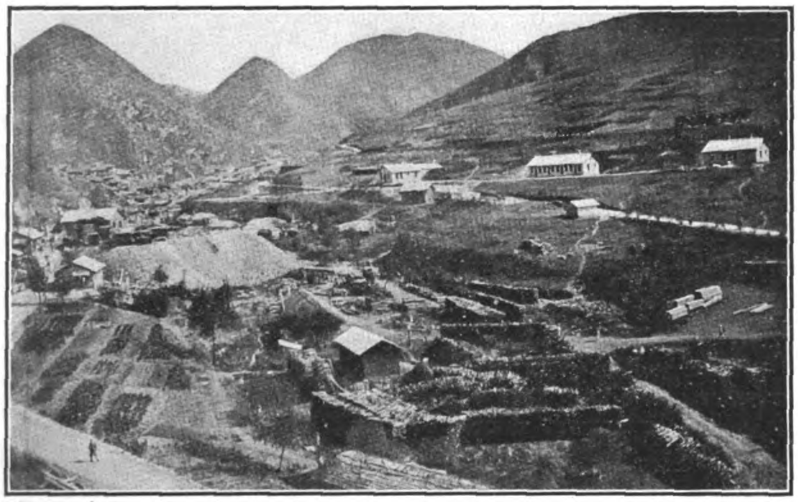
"In both the treaties of alliance between England and Japan, concluded on January 30th, 1902, and on August 12th, 1905, respectively, adherence to that policy was a fundamental keynote of the engagements. *In the latter treaty especially Japan solemnly and explicitly pledged herself to observe the principle of equal opportunities for the commerce and industry of all nations,* while Great Britain recognised the right of Japan to take measures for 'the guidance, control, and protection of Korea.'" Let it be noted that these are the words of a Japanese official publication. The same authority proceeds:—"Although Japan, in accordance with the Convention concluded on November 17th, 1905, assumed the entire control of the foreign affairs of Korea, and undertook the duty of watching over 'the execution of the treaties actually existing between Korea and other Powers,' five days after the conclusion of this Convention—namely, on November 22nd, 1905, a Circular Note was addressed to the Treaty Powers, in which the Imperial Government of Japan declared that 'in assuming charge of the foreign relations of Korea and undertaking the duties of watching over the execution of the existing treaties of that country, they will see that those treaties are maintained and respected, and *they also engage not to prejudice in any way the legitimate commercial and industrial interests of these Powers in Korea.'*"

Again, be it noted, these words are from a Japanese official publication. Now the only industrial interests of any importance in Korea in which foreigners have been engaged, with the possible exception of the manufacture of tobacco, which has already passed into Japanese hands, are those pertaining to mining. How, then, can the denial of mining rights to foreigners be consistent with those solemn and explicit assurances that Japan has pledged herself to observe the principle of equal opportunities for all nations? It is declared, by way of apology, as it were, that the provision denying mining rights to foreigners applies to the future alone, and that foreigners already in possession of mining rights will be allowed to use and retain them for any length of time in the future. Because the denial of such rights in the future is not also accompanied by a policy of confiscation in the present, it can scarcely be regarded as a justification. It does not affect the issue that to deny foreigners mining rights is an infraction of the principle that equal opportunities shall be afforded the commerce and industry of all nations. Nor, assuming it to be true, as is asserted by the *Seoul Press*, that in Europe and America mining rights are seldom granted to foreigners, can this be held to be a justification for abrogating a policy to which Japan has "solemnly and explicity" pledged herself? We do not know how the matter stands in America, where the various States have different laws, but in England there is no prohibition against the working of mines by aliens, and even in Spain, which is sometimes called a backward country, this particular form of narrow anti-foreignism does not exist. But, as we say, the argument is quite irrelevant, whether the statement on which it is based is accurate or not. A man who makes a contract, or gives solemn and explicit assurances that he will do or refrain from doing certain things, cannot be regarded as absolved from those undertakings by a variation in the contracts or assurances of other parties.

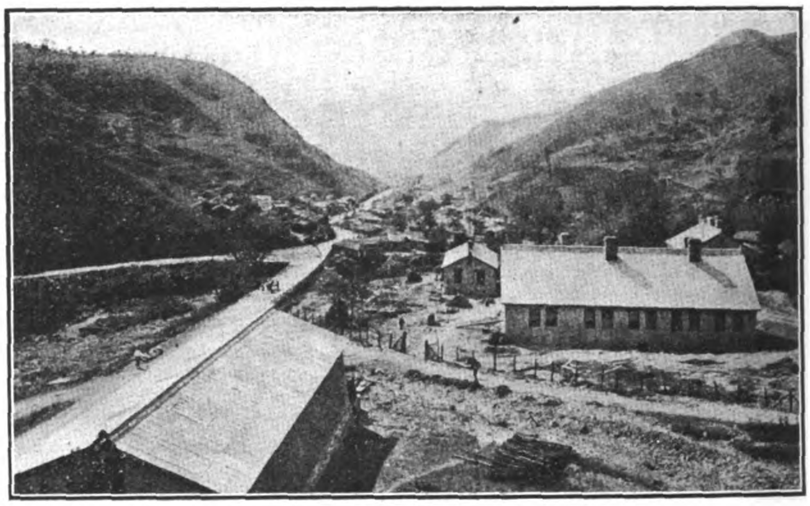
In order to show that if Japan is not maintaining the letter of her undertaking she is observing the spirit, it is further declared that "Although the acquisition of mining concessions in Korea has thus been forbidden to foreigners, they may acquire that right as partners of a legal person organised in conformity with the law of Japan, and so foreigners may still come into possession of mining rights in Korea, though indirectly, after the revised law has been put into force." Then what is the object of denying foreigners mining rights in Korea? Why are foreigners barred out by the front door and allowed come in at the back? It reminds us of the answer the Rev. Sidney Gulick makes American criticism that Japan should be the last to complain of prohibitive land-holding legislation, seeing that she denies foreigners the right to own land in their own names. Oh, says the reverend gentleman, that is not true; foreigners can own land if only they organise themselves into a legal partnership. They must first, as it were, take part in a legal fiction, and they can then obtain rights that Japanese are freely granted in other countries. The acquisition of rights by legal fiction does not appear either a safe or a satisfactory method of land ownership. What is the virtue possessed by a juridical person which enables such a partnership to do what an individual is prohibited from doing? What is the object of such a distinction? Surely it will not be suggested that an individual who owns land or acquires a mining concession is more dangerous to the State than a corporation? If extra-territoriality prevailed in Japan or Korea, the reason for the distinction would be easily understood, for while an individual foreigner would be subject to the law of his country, a partnership organised and registered underJapanese regulations would be subject to Japanese law. But no such distinction prevails. Extraterritoriality is a thing of the past so far as Japanese territory is concerned, and the individual foreigner equally with the registered foreign partnership is subject to Japanese law. It is really very difficult to understand the object of prohibiting foreigners from holding land or obtaining mining rights in their own names, while permitting both rights to be secured by organised groups of foreigners, unless the action taken is merely a stage in complete prohibition. Once the principle is established that foreigners as such are denied mining or landholding rights, it would only be a logical step to decree further that corporations of foreigners or juridical persons, organised for such purpose, are illegal, as their object contravenes the established principle.

It will be seen that the Japanese authorities in Korea have placed themselves in this dilemma. Either the prohibition of the holding of mining rights by foreigners is a limitation of the industrial freedom of aliens in the peninsula, or it is destitute of any meaning and has been promulgated for no purpose whatever. If the latter be the correct interpretation, there is no more to be said save that it is unusual for the Japanese authorities to issue notifications that are meaningless. If the former be the intention

and object of the proviso, then Japan is departing from what she has acknowledged in an official publication, issued by the Japanese authorities in Korea, to be a solemn and explicit pledge for the maintenance of the "open door." So far as the Anglo-Japanese Treaty of Alliance of 1905 goes, there can be no question that the recognition by Great Britain of Japan's paramount political, military, and economic interests in Korea was made contingent on Japan's pledge that any measures taken to safeguard those interests should not conflict with "the principle of equal opportunities for the commerce and industry of all nations." When a Japanese official publication itself declares that this provision of the treaty was a "guarantee of alien rights" and a "solemn and explicit pledge" for the maintenance of the "open door," a policy that constituted a "fundamental keynote" of the engagements into which Japan had entered, we do not see what justification can be offered for the step which the Japanese authorities in Korea have now taken to exclude foreign mining enterprise from the country so far as the wording of the law is concerned, though for the time being permitting it to enter in what may be called a clandestine fashion. To the Chinese it will seem curious that within a few months of the time that Japan has insisted on the extension of mining rights in Manchuria and Mongolia to Japanese, a notification should be issued in Korea denying mining rights to foreigners, including Chinese. To them it must appear a somewhat curious example of reciprocity. No doubt the question is now engaging the attention of the British diplomatic authorities and the Japanese Foreign Office. It is clear from the considerations we have set forth that the prohibitory clause in the Korean Mining Ordinance is quite incompatible with the pledges which it has been officially acknowledged that Japan has given. When this is once made clear to the Japanese Foreign Office, we have no doubt the provision excluding foreigners from mining rights in Korea will be withdrawn.



TUL MI CHUNG MINE OF SEOUL MINING CO.



ROAD TO PLANT AT TUL MI CHUNG

# THE SEOUL MINING COMPANY

The following Report of the Directors for the year ended December 31st, 1914, was submitted to the Shareholders at the Ordinary General Meeting held at the office of the company at Deep River, Conn., U.S.A., on October 18th, 1915:

### Capitalization.

The Capital remains at $500,000. During the year the Company has borrowed from its shareholders the sum of $250,000 for the purpose of erecting the Milling Plant at Tul Mi Chung, as announced in the Directors' Report for 1913, and to continue an active development policy.

The erection of the electric power plant has been completed under the capable direction of the Managing Engineer of our Electrical Department, Mr. H. Maki, and is performing its full expected service with complete regularity.

The sanguine reports and early predictions made by Mr. E. W. Mills, Superintendent of Tul Mi Chung, the discoverer of the mine, have already been more tann realized and under his efficient superintendence it continues to rapidly increase in value every month. The ore reserves already opened up at Tul Mi Chung contain a gross value of $12,000,000. The milling plant is in course of erection and in the absence of mishap it is hoped will commence service in July.

Good progress is being made in prospecting and geological examination and substantial results are confidently expected. In order that the General Manager should obtain the highest professional advice in this very important work, the services of Dr. J. Malcolm Maclaren, late Mining Specialist, Government of India, formerly Assistant Government Geologist, Queensland, &c., have been fortunately obtained, and that gentleman is now examining the Concession District. The indications pointing to a successful opening up of exceedingly large low grade ore deposits at Soctarie, quite close to the Suan Mill, are very encouraging, in addition to several other places.

During the year 74,550 tons of ore were milled, the gross receipts amounted to $703,701, and the net earnings to $413,301. The operating costs were reduced 23 cents per ton of ore below 1913. The ore reserves, as estimated in February, 1915, are 1,206,133 tons, and contain a gross value of $15,014,375, comparing with $7,645,948 in February, 1914. It is worthy of note that in the present estimate copper is calculated at only 12 cents per lb. During the year the Ore Reserves at Tul Mi Chung have trebled in tonnage and value, increasing from 317,809 tons to 963,600 tons. The development at Suan was not so satisfactory and the continuity of the ore deposit in depth below the sixth level has not yet been proved, but the General Manager's report states that the mine workings are now reaching the ore zone.

The flotation treatment addition to the Suan Mill was completed in May, 1914, and since then has yielded very satisfactory results, exceeding the estimates submitted at the time the directors authorised the erection of the flotation Plant. The substantial progress made in 1914 has induced the General Manager to call attention to the probable necessity of increasing the capacity of the Tul Mi Chung Milling Plant, and also of the Electrical Power Plant. At the time these Plants were authorized it seemed evident that they would meet all necessities for several years to come; however, space provision was made at the time of their construction for future enlargements.

The sum of $20,000 has been written off on account of depreciation. An Interim Dividend of 25% was distributed in November, 1914, and after providing for depreciation and all Royalties, there is a balance remaining of $252,106. Out of this sum a second dividend of 25% was distributed on May 29th, 1915, and $18,000 provided for Administration Costs, leaving a balance of $109,106 to be carried forward to the next year's account.

Since Milling Operations commenced in 1910 the following dividends have been paid:—1910, 25 percent; 1911, 50 percent; 1912, 50 percent; 1913, 50 percent; 1914, 50 percent.

The report was signed by H. Collbran, President of the Company.

### Suan Concession, Holkol, Chosen (Korea)

The following report of the workings of the Suan Concession was presented for the year ended December 31st, 1914: The year's work afforded an operating profit of $413,300.87. The Suan Mine Ore Reserve stands at 236,536

tons, valued at $3,040,850 after 82,472 tons were taken from the mine for the mill. The Tul Mi Chung Mine Ore Reserve was increased during the year to 963,600 tons (including some ore not yet fully blocked out) valued at $11,904,045.00. A combined Gold and Copper extraction of 80.04% was obtained at the Suan Mill as against 72.65% for the previous year, the copper extraction being increased from 30.5% to 56.2%. The Pyeng Yang Electric Power Plant has been completed and the change from steam to electric motive power was made early this year.

Excellent results were obtained from the Prospecting work conducted elsewhere on the "Collbran Contact," notably at the Kyung Chai Kol and Tuck Kol Prospects where 6,000 tons of ore carrying $1.40 per ton and 4.2% Copper were developed, and at the Soctarie Prospects where it appears an enormous tonnage of low grade ore will soon be available. The coming year gives every promise of exceeding the results obtained any previous year and can be looked forward to with much interest. The operating costs, viz., $3.90 per ton of ore milled, show a decrease of $0.23 per ton as compared with the costs for the previous year.

In the Suan Mine, the total development work, consisting of Tunnels, Drifts, Winzes, and Raises amounted to 7,138 feet, which, added to the previous 28,563 feet gives a total to December 31st, 1914, of 35,701 feet. Early in November a large flow of water was encountered in Level No. 6, with which the pumps were unable to cope, making it necessary to discontinue the work on this level. A large pump is now being installed and the development work will shortly be resumed. On account of the greater quantity of water to handle it was necessary to draw heavily on the broken ore reserves, which were decreased from 53,335 tons to 35,606 tons. The ore reserve at February 15th, 1915 was as follows:

| | Tons | Gold $ per ton | Copper % | Bismuth lbs. per ton | Gross value per ton | Gross value |
|---|---|---|---|---|---|---|
| Positive ... ... ... | 185,189 | $9.07 | 1.16 | 1.7 lbs. | $12.87 | $2,384,123.00 |
| Probable ... ... ... | 51,347 | $9.37 | 1.0 | 1.7 " | $12.79 | 656,728.00 |
| Total ... ... ... ... | 236,536 | $9.13 | 1.12% | 1.7 lbs. | $12.86 | $3,040,851.00 |

Distribution:—Gold, $2,160,785.00; Copper, $638,799.00; Bismuth, $241,267.00.

[Ton, 2,000 lbs.; Copper at 12 cents per lb.; Bismuth at 60 cents per lb.]

The "Central Ore Body" has now been worked out and the "Western Ore Body" reduced from 19,750 tons to 7670 tons. The net increase of 3,500 tons was confined entirely to the "Eastern Ore Body." No ore was developed on Levels Nos. 5 and 6 during the year but these workings are now reaching the ore zone and will prove whether or not the main ore body or additional ore lenses will be found with depth. Prospecting to the north-east of the "Eastern Ore Body" indicates the existence of another ore lens in this direction.

Stoping:—The 74,450 tons of ore milled for the year obtained from above adit Level, 37.4 per cent; below adit level, 62.6 per cent.

A larger quantity than usual of low grade ore was milled during the year from the upper workings, viz., 37.4%, but in spite of this the gold value of the ore milled was only $0.20 per ton below the average value of the reserve. As only 17% of the ore reserve remains above the main adit level you may confidently expect a substantial improvement in the grade of the ore milled this coming year.

In ore sorting 7,922 tons were discarded as waste in the sorting house, which represents 9.6% of the ore received from the mine. The cost for sorting amounted to $3,708.87 or 4.97 cents per ton of ore milled, and assuming the discarded waste had no value, the ore sorting had the effect of increasing the gold content of the ore milled $0.86 per ton.

The actual running time of the mill was 338 days, 15 1/3 hours (or 92.77%), 74,550 tons of ore being treated, as against 327 days, 17-1/2 hours (89.63%) and 71,535 tons for the previous year. The stamp duty per 24 hours was 5.5 tons. After a series of tests a flotation process was installed for treating the pulp from the tube mills. This was put in operation toward the end of April and the copper extraction was then increased from 20% to about 75% and the gold from 82% to about 88%. The total yield from the mill was $701,181.75 as against $671,536.63 for the previous year.

A total of $18,310.66 was expended for improvements and construction. This was largely made up by miscellaneous improvements at the Suan Mine and Mill and the re-building of the Tam Bowie wagon road after the heavy floods in July. A road has been completed to the Whang Hai Province boundary line and about three miles remains to connect this road with the Tul Mi Chung road at Pami Chang. The heavy rains during July caused a great deal of damage to the road and destroyed several bridges which have not yet been replaced. The sum of $5,000.00 was paid to the Chosen Government, completing the promised contribution toward the cost of this road. During July over 20 inches of rain was recorded at Holkol which caused great damage to the wagon roads. The rainfall for the year was 64.85 inches as compared with 23.35 inches for the previous year.

### The Tul Mi Chung Mine

The development of the Tul Mi Chung property has progressed most consistently and has resulted in a large increase of the quantity and value of the ore reserves. During the year the sum of $229,456.87 was expended for this work and for surface improvements. At the end of the year the capital expenditure stands as $358,647.77. A total of 11,958 feet of driving, crosscutting, sinking and raising was done for the year which, added to the previous footage, gives a total of 22,172 feet up to December 31st, 1914. Two new ore bodies were developed during the year, one in Tunnel No. 6 and one in Tunnel No. 1, making seven ore bodies or lenses in all. Level No. 1, the deepest working on ore, is in excellent condition and is giving great promise.

### Working and Profit and Loss Accounts for the Year Ended 31st December, 1914

| Dr. | | Cr. | |
|---|---|---|---|
| To Mining Costs ... ... ... ... | $102,130.06 | By Bullion Proceeds... ... ... ... | $485,219.67 |
| " Sorting and Transportation of Ore... ... ... ... ... ... ... | 7,109.01 | " Concentrates:— 1,472.40 tons ... ... ... ... | 215,962.08 |
| " Milling Costs ... ... ... ... | 74,713.14 | " Ore Proceeds ... ... ... ... | 2,520.00 |
| " Balance Carried Down ... ... | 519,749.54 | | |
| | $703,701.75 | | $703,701.75 |
| " General Expense... ... ... ... | $67,600.92 | " Balance Brought Down ... ... | $519,749.54 |
| " Concentrate ... ... ... ... ... | 38,847.75 | | |
| " Royalties and Taxes ... ... ... | 10,446.75 | | |
| " Balance Carried Down ... ... | 402,854.12 | | |
| | $519,749.54 | | $519,749.54 |
| " Royalty payable to the Korean Syndicate, Limited ... ... ... | $32,228.33 | " Balance Brought Down ... ... | $402,854.12 |
| " Directors' Fees ... ... ... ... | 18,000 00 | " Interest, Discount, and Exchange ... ... ... ... ... ... | 4,597.40 |
| Following declaration of interim dividend of 25%, but not including anything due on declaration of final dividend. | | | |
| " Buildings and Improvements, &c.:— Amount written off ... ... | 18,310.66 | | |
| " Depreciation on Mines and Property ... ... ... ... ... | 20,000.00 | | |
| " Balance... ... ... ... ... ... | 318,912.53 | | |
| | $407,451.52 | | $407,451.52 |

The total ore reserves with copper calculated at 12 c. per lb. was:

| | Tonnage | Estimated Gross Value |
|---|---|---|
| Tul Mi Chung, February 1st, 1915 | 963,600 | $11,904,645 |
| Suan February 15th, 1915 | 236,533 | 3,040,850 |
| Kyung Chai Kol, February 15th, 1915 | 5,000 | 55,040 |
| Tuck Kol, February 15th, 1915 | 1,000 | 13,840 |
| Total... ... | 1,206,133 Tons | $15,014,375 |

### Electric Power Installations

The Power Station at Pyeng Yang, transmission lines and motor installation were not completed until the end of the year on account of the high floods, which delayed the transportation of the material and washed away a section of about 100 poles of the transmission line. Early in the present year the change from steam to electric motive power was effected at the Suan Mine and Mill and the plant is now working very satisfactorily.

Up to the end of the year a total of $377,104.57 has been expended for the Power Plant at Pyeng Yang, transmission line to the Suan and Tul Mi Chung Mines, sub-stations, motor equipment at the Suan Mine and Mill and the Motor equipment for the Tul Mi Chung Mine and Mill (the latter have yet to be installed).

With the use of electric power at the Tul Mi Chung Mine and Mill it is expected the cost of power on the Concession will be less than $50.00 per horse-power year, as against the previous steam-power costs of $110.00 per horse-power year.

Recommendations of General Manager A. H. Collbran were as follow:

"It is evident that in the near future you will be warranted in providing for the installation of a second unit at the Tul Mi Chung Mill, but it will be advisable not to do this until the first unit is in operation. This will require the addition of another 1,000 K.W. unit at the Pyeng Yang Power Station.

"The field for prospecting presents unlimited possibilities and this work should be pushed with the greatest vigour. The Nam Nori Prospects will be placed under individual foreign supervision and the development work continued with depth. The Soctarie Prospects require a large amount of work and the development will be concentrated at the most favourable points."

### Balance Sheet, December 31st, 1914.

*Dr.*

| | | |
|---|---|---|
| To Capital (Authorized and Issued):— | | |
| 20,000 Shares of $25 (U S. gold) each ... ... ... | $500.000.00 | $500,000.00 |
| „ Premium on 4,000 Shares... ... ... | | 400,000.00 |
| „ Issue of $250,000.00 8% Coupon Notes:— First half issue, dated 1st August, 1914 ... ... ... | | 125,000.00 |
| „ Sundry Creditors | | 180,131.02 |
| „ Profit and Loss Account:— | | |
| Balance as per last Balance Sheet... | 188,411.01 | |
| *Add* Korean Syndicate participation in Tul Mi Chung Expenditure for 1912 ... ... ... | 2,825.70 | |
| | 191,237.70 | |
| *Less* Final Dividend of 25% for 1913, making 50 % for the year | 115,043.75 | |
| Directors' Fees 36,000 | | |
| *Less* Paid on declaration of interim dividend... | 133,043.75 | |
| Net Balance carried forward to 1914 account ... | 58,193.95 | |
| *Add* Profit for the year as per statement ... | 318,912.53 | |
| | 377,106.48 | |
| *Less* Interim Dividend of 25 % declared in November, 1914 | 125,000.00 | |
| | | 252,106.48 |
| | | $1,457,237.50 |

*Cr.*

| | | |
|---|---|---|
| By Mines and Property:— | | |
| As per last Balance Sheet | $340,000.00 | |
| Additional Expenditure ... | 13,187.60 | |
| | 353,187.60 | |
| *Less* Depreciation ... ... | 20,000.00 | |
| | | 333,187.60 |
| „ Tul Mi Chung Mine Development ... ... ... | | 358,647.77 |
| „ Electric Power Installation ... | | 377,104.57 |
| „ Prospecting ... | | 29,493.22 |
| „ "Collbran Contact" Survey ... | | 1,733.64 |
| „ Contribution to Government Roads ... ... | | 10,000.00 |
| „ Metallurgical Examination, Cables ... ... | | 11,548.87 |
| „ Concentrates in Transit and in Hand... ... ... | | 161,352.99 |
| „ Sundry Debtors | | 10,449.88 |
| „ Store of Materials and Stores on Hand ... ... | | 76,008.40 |
| „ Cash at Banks and in Hand .. | | 87,710.56 |
| | | $1,457,237.50 |

To the Directors of The Korean Syndicate, Ltd.

We have examined the above Balance Sheet of the Seoul Mining Company with the books, vouchers, and accounts of the Company, and have obtained all the information and explanations we have required.

Subject to our Report to you of this date, in our opinion, such Balance Sheet is properly drawn up so as to exhibit a true and correct view of the Company's affairs, according to the best of our information and the explanations given us, and as shown by the books.

(Signed) LOWE, BINGHAM & MATTHEWS,

*Auditors.*

### Electric Power Plant—Report for 1914.

The report of Mr. H. Maki on the Power Plant follows:

The early part of the year was not suitable for out-door work on account of the weather but telephone communication was established between Holkol and the Pyeng Yang Power Station and the erection of the steel work for the power house building was completed during May. The reinforced concrete stack was begun in April and completed in June. The extraordinary rise in river at the power plant site caused a month's delay in the transportation and landing of the machinery. Also construction material was delayed in being transported from Japan and from Tsingtau on account of the withdrawal of steamers due to the war outlook. The work was hastened by 13-hour working days. The establishment of a police service at the plant site prevented any loss of material or supplies.

The transmission line from the generating station to the Half Way House was completed in May and the extraordinary flood in July washed away four miles of the transmission line near the Half Way House. Some of these poles were later found at Pyeng Yang and at Chinnampo. A re-survey of the transmission line was made and the destroyed section of the line was moved to the side of the valley upon some higher ground. The second flood which occurred, caused no further damage.

At the time of the flood some of the equipment was being transported up the River to Tam Bowie and the heaviest transformers were under water when placed 15 feet above the usual water level of the river. These were carefully dried out at the Soctarie Sub-Station and no injury was done. All insulators used on the line were carefully tested at the factory with three times their normal voltage. The wires were strung with a suitable sag to stand the cold weather. The severe cold, 33 degrees below zero (Centigrade) did not cause a single break to wires or insulators at the full voltage of 44,000.

The telephone wires are twisted every ten poles and for facility for inspection switches are provided for the use of a portable telephone every three miles and regular telephones are installed every eight miles. The power wires are divided into six sections at which points disconnecting switches are provided and a complete twisting of the wires is made in order to balance the circuit. The telephones give good service without the humming noise. The transmission line was completed and made ready for use in October.

The Generating Station equipment consists of 3 batteries of water tube steam boilers with superheaters and chain grate stokers, 2 steam feed water pumps, 2 steam feed water heaters, and 2 stoker engines.

In the Generating Room are two 1,000 K.W. turbo generating sets with direct connected exciters, five switchboard panels mounted with instruments to control electric power and speed of turbines, one outgoing 44,000 volt electric driven oil switch, four 400 K.V.A. power transformers, four 30 K.V.A. auxiliary motor transformers, two Electric motor driven surface condensers, two Electric motor driven intake pumps, one Electric motor driven 5-ton wharf crane, one 12-ton travelling crane and one Small workshop with lathe, drill, &c.

One wooden pole line was erected for the transmission of 44,000 volts, 3 phase current from generating station to Pami Chung, a distance of 34 miles, from which point the lines diverge to the Soctarie and the Tul Mi Chung sub-stations, where the voltage is stepped down to 440 volts for the motors. The Soctarie sub-station is equipped with four 150 K.V.A. power transformers, four 150 K.V.A. stepping down to motor voltage transformers, three switchboard panels with instruments to control incoming and outgoing power and measuring instruments, and 16 different sized mill motors with panels.

The Holkol sub-station is equipped with four 75 K.V.A. air compressor motor transformers, two panels with instruments for controlling incoming power from the Soctarie sub-station and synchronous motor of 210 H.P. for air compressor.

The Tul Mi Chung sub-stations are in course of construction and the power and telephone lines completed, having passed the Government examination.

The generating station was ready to operate one 1,000 K.W. generating set in October, having passed the Government examination and also the hydraulic test for the boilers at double working pressure. Under a special permit from the Authorities power was transmitted previously to dry the transformers, while the generating plant transformers were dried by hot air and electric power. This was a very slow but safe process. During December the regular Government permit was given to operate the entire system, each turbo unit having been successfully tested at a 25 percent overload for three hours and its performance attracted the admiration of the Inspectors. The transmission line and sub-station equipment stood the test in accordance with the electrical regulations and not a single break or other disturbance occurred.

## IMPORT SALT TO CHOSEN

Chosen imported during last November 22,405,900 *kin*, worth Y101,190, of salt. The grand total since the beginning of the year amounted to 170,260,900 *kin*, worth Y789,233. Shantung and Kwantung salts contributed the largest shares. About Y250,000 worth of salt is smuggled into the Peninsula from Takushan way through the medium of the Korean fishermen operating off the mouth of the Yalu and off the northwestern coasts of Chosen. The aggregate imports for the 11 months exceed Y1,000,000 and compared with the corresponding period of last year an increase by about 60,000,000 *kin* is noticed. Adding to the above the amount to be shipped during the current month, an excess of 70,000,000 *kin* is believed to be experienced over the previous year. During the latter half of 1914, the export of Shantung salt was necessarily suspended because of the siege of Kiaochou, whilst the business was revived on the return of Spring as order was restored in the war zone in Shantung.

# THE JAVA CANE SUGAR INDUSTRY

The report of the Netherlands East Indian San Francisco Committee of the Department of Agriculture, Industry and Commerce on the Java Cane Sugar Industry shows a rapidity of growth almost startling. In 1888 Java's total production was estimated at 300,000 long tons. Ten years later it had reached 700,000 tons and twenty years later it reached 1,200,000 tons and in 1911 it had reached over 1,400,000 tons, falling back slightly for 1912.

These rapidly rising figures of production in a complex industry like sugar are startling evidences of the value of the methodical study that the Dutch people of Holland have thrown into their work in their island possessions, as well as in their own homes in the lands they have rescued from the sea. Even the English colony of British Guiana, where the Demerara sugars have developed a demand for their notable crystals, was started in its sugar production by the Dutch, who at one time controlled English Guiana and still control the adjacent colony of Surinam.

The report above refers to the Java sugar industry, but the committee have issued quite a large number of bulletins concerning various phases of Dutch industrial life, more particularly in the Far East. In 1912 there were 184 factories working in Java with 347,000 acres of cane under cultivation, producing 1,384,000 long tons of sugar. The area occupied in the cultivation of cane in general is much greater than the proportions of the figures here given, for the cane requires twelve months for its growth and planting goes on simultaneously with the harvest season. In fact, it is estimated that a million of the 1,200,000 acres of the lands were in control of the sugar industry in 1912 to cover the 347,000 acres that were being cultivated for present delivery. Various other crops are planted in Java, the cane crop being planted every year, or at least but one crop is gathered and then the land is put in some other crop and cane may be put in again in the second or third year.

The Dutch government began the industry more than eighty years ago by compulsory order, protecting the natives in all their rights and giving them the alternate use of the lands, but requiring them to be planted in sugar cane in regular rotation and the natives to be compensated for their labor. As the island has quite a large population the whole plan seems to have worked out extremely well, as indicated by the rapidly increasing figures that we have already given. The actual compulsory system did not last very long, but sufficiently long to start the industry along the lines of success that we have indicated.

The sugar industry in Java is almost exclusively carried on in irrigated fields, the irrigation works being the same as those in use for the cultivation of rice, while the right of employing these works is included in the rent of the land. A cane crop takes about 15 to 17 months in time during which the European manufacturer may occupy a field, but cannot exceed the above period, the native farmer using the land before and after that time. More than a century ago large tracts of land were sold here and there in Java and such owners are now quite free to plant and irrigate as they may choose.

In regard to the matter of labor, the cultivation in Java is carried on most intensively during the greater part of the year and demands an important labor force. The sugar estates being as a rule in densely populated districts in the low land, it is generally not difficult to get the necessary laborers, but in newly cultivated districts, or on perpetual lease holdings in thinly populated districts, it is almost impossible at times to get an adequate labor supply. During the rice harvest and at other times when public works are being constructed, there is considerable difficulty, but on the whole Java, as contrasted with other cane growing countries, occupies a favored position.

Heavy work is done exclusively by men. The lighter work such as cutting tops, planting, watering, weeding and supplying, by women, while children are only used for destroying insects and similar light work. The seed of the crop consists of the tops of the sugar cane, which measure a few joints and as a rule carry three buds or eyes. They are cut from the ripe cane at the time of its being crushed and also from cane intentionally planted for this purpose and which is still in an unripe state.

The seedlings used for planting are cut in pieces having three eyes. The trash is stripped off, those infected with insects or fungi or those which are shriveled and sickly, are collected and condemned, while the sound ones are disinfected by means of a Bordeaux mixture with 96 per cent. water, which kills any adhering traces of parasitic fungi. The cuttings are laid down in rows lengthwise and horizontally, one after the other and with their eyes on the sides and then covered with earth, after which they are irrigated, which is repeated every three to five days. Afterwards the intervals are longer and this continues until the cane has grown up well. As the stalks of the cane develop they are banked up. The secondary stalks sprout, the formation of roots is hastened and the plants now stand firmly in the ground.

With the second and third banking or working, the fields are manured, on which process a great deal of money is spent in Java. A few years ago the manures were exclusively nitrogenous material, while potash and phosphoric acid were considered of no use. Now it has been found on closer inspection that many fields are poor in phosphoric acid and this kind of manure is beneficial to such fields. Potash is said to be present in the Java soil in a sufficient quantity. As soon as the leaves shade the ground the weeds die out. The fields of cane grow to about 13 feet in height.

Under the compulsory system, between 1830 and 1870, Java sugar was shipped exclusively to Holland. Afterwards a large quantity of sugar was exported to England, where a dry, gray sugar 15 to 20 Dutch Standard, was desired. Of the lower grades some went to England, but they found their way chiefly to China and other eastern markets. After 1860 the American market displayed an increasing interest in Java sugars and from 1896 to 1900, especially during the Spanish war, America bought the greater part of the Java crop. For many years a small quantity of white sugar has been made in Java for home consumption, but the manufacture of this article for exportation dates from the year 1903, when a shipment of a thousand tons was forwarded to Karachee. This was a success, and ever since the sugar factories in Java have been manufacturing white sugar for the British India market. After a short time they succeeded in supplying a faultless white article, without greater factory loss than was suffered in the manufacture of Muscovado. In 1911, owing to the drought in Germany, white sugar was also shipped to England.

## LIKIN ON THE TIENTSIN-PUKOW RAILWAY

"K.D.S." writing in the *British Chamber of Commerce Journal*, says: "In September, 1913, all likin stations on the Tientsin-Pukow Railway were abolished, and the Railway Administration in order to compensate the provincial authorities agreed to hand over 6 per cent. of the goods traffic receipts. This arrangement remained in force till June 1st, 1915. On that date twenty-seven likin stations were set up once more and foreign goods traffic in the "up" direction has practically ceased. It could not stand the burden of likin.

"As a result the Tsingtau-Tsinanfu Railway, on which no likin is charged, has secured the greater part of the cargo sent from Shanghai to Tsinanfu; it has been found most difficult indeed to cope with the demand for freight on this line. This now forms the cheapest route for piece-goods from Shanghai, the rate of freight from Shanghai to Tsinanfu being about $10 per ton.

"The Tsingtau-Tsinanfu Railway is deliberately competing against the Tientsin-Pukow Railway. This may be seen from the fact that, while freight for intermediate stations remains the same (Tsingtau to Chowtsun for instance being 70 Mexican cents per 100 kilos), the freight from Tsingtau to Tsinanfu has been reduced to about half the old rate and is only 40 cents per 100 kilos. It is in fact cheaper for goods consigned to Chowtsun to travel first to Tsinanfu by rail, and then back to Chowtsun by bullock cart.....

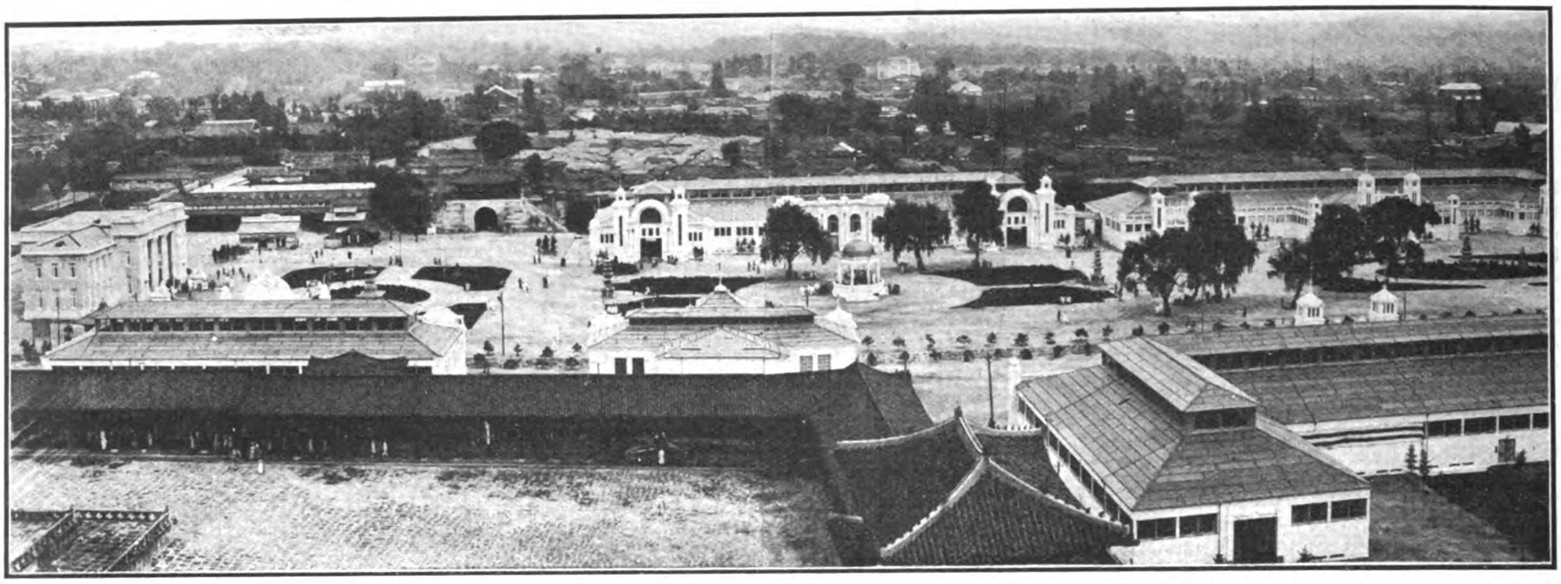
"The freight on the Shanghai-Nanking and Tientsin-Pukow Railways is about $9.00 a ton. It will thus be seen that the freight by this route is about $1.00 a ton cheaper than by the Shanghai-Tsingtau-Tsinanfu route, even at a moment when freights on the Tsingtau-Tsinanfu section have been reduced to a minimum.

"The freight on the Shanghai-Nanking Railway and Tientsin-Pukow Railway route could easily be reduced still further for a regular business, especially in such items as coolie and boat hire at Nanking. It is doubtful if the Tsingtau-Tsinanfu freight would stand much further reduction.

"We now come to the real difficulty in the situation. The likin on the Shanghai-Nanking-Tsinanfu line amounts to about $20.00 a ton, or say twice as much as the entire transport charges. In consequence no piece-goods business goes by this route to Tsinanfu, and the Chinese officials have killed the goose that lays the golden eggs.

"A point for the Chinese Government to note is that before the war the headquarters of the piece-goods firms were in Tsingtau. They have now been transferred to Tsinanfu. If the Chinese Government wish the firms to remain in purely Chinese territory at Tsinanfu and not to be re-transferred to Tsingtau, they must give the firms an alternative route for the transport of their goods. If they persist in the present policy of extortionate likin charges, the firms will inevitably go back to Tsingtau immediately the political horizon becomes more settled.

"From the difference in favour of the Shanghai-Nanking Railway and Tientsin-Pukow Railway route, as compared with the Tsingtau route, it is evident that the Chinese Government could still receive a reasonable sum in taxation by charging an equitable percentage on freight on the lines of the policy in force between September, 1913, and June, 1914. At present they receive practically nothing."



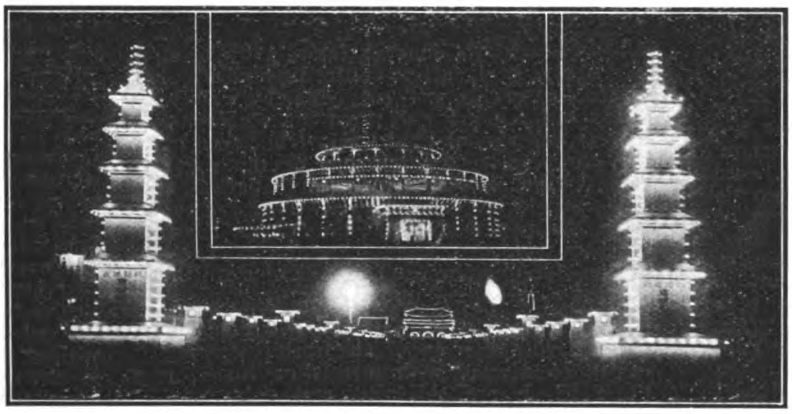
Panorama of Chosen Exposition Held in Grounds of the Old Palace at Seoul

# EXPOSITION SHOWS KOREA'S PROGRESS

The progress of Korea during the ten years since the Russo-Japanese war was remarkably set forth in the recent exhibition held in Seoul, presenting in concrete form many subjects outlined in reports of the Governor General of Chosen which have been abstracted and published from time to time in the "Far Eastern Review."

The exhibition was to celebrate the completion of one thousand miles of railway in Chosen. It really represents much more than a thousand miles since a great part of the present mileage has been laid twice, owing to improvements in the line which was roughly constructed in the first place for the transfer of troops in the Russo-Japanese war while the line as now operated compares favorably with the older and more carefully planned lines of Japan. Report of the Railways for 1913-1914 of Chosen will be found in this issue.

The exposition was a constant surprise and revelation to the many foreigners who visited it as a side trip from Japan. As its setting was the ancient city of Seoul in which the Japanese have made many lasting improvements in the construction of roads, widening of streets, erection of monuments, to say nothing of the general beautification of the former parks and the creation of several new ones, while leaving certain quarters of the city probably as they were before Japanese occupation, visitors were given a superb opportunity for comparing the new and the old in Korea, the "morning calm" of which has been succeeded by the modern bustle of commercial activity.



Night Scene showing Entrance—Railway Building Above

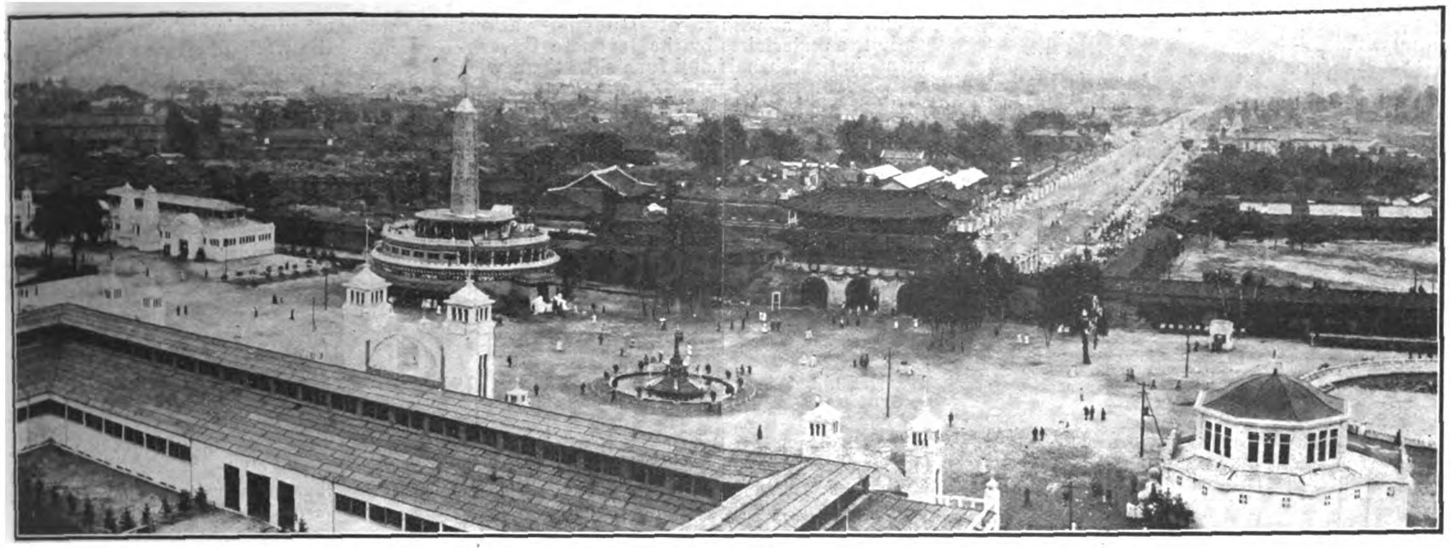
Visitors to the exposition, many of whom made it a side trip from the Coronation ceremony in Japan, were entertained at the new Chosen Hotel. This hotel is the latest refinement of Japanese experience in hotel building and being operated under the management of the Chosen Railways, leaves little to be desired in the matter of beauty or utility and comfort of guests. The hotel occupies a commanding site in the city of Seoul and is located in what was formerly a part of the precincts of the Temple of Heaven, in the heart of the old Korean capital. Most of its rooms are equipped with private baths and the reception halls, lobby, reading rooms, billiard room and bar are furnished in magnificent yet tasteful style. The hotel is only a short distance from the principal consulates and faces the post office and principal banking establishments. The effort of the Chosen Railway Administration to provide proper quarters for the ever increasing number of foreigners who are being attracted to Seoul, has been carried out most successfully and the verdict of visitors to the exposition was that the new hotel is equal to any in the Far East and provides all the comforts that the tourist has come to expect in traveling not only in the Occident but in the Orient as well.

The exposition was held in the old South Gate Palace, one of the most interesting sights of Seoul, and was itself housed in many new buildings in exposition style, some of which are to be permanent. As agriculture is the chief industry of the Koreans, visitors entering the grounds soon located the grand pavilion devoted to all kinds of grain and products of the field. Rice of every kind and variety, as grown in every province, on all sorts of soils, is shown and duly labelled, to

One of the Agricultural Exhibits

Police and Prisons Exhibit

Irrigation and Rice Culture Exhibit



Exposition Grounds showing the Circular Railway Building and the Old Palace Gate

prove which is best for certain conditions. Beans and their many products occupy much space. The exposition of cotton showing the replacement of the old Korean cotton that was almost an economic loss, so small was the yield, was made even more remarkable when contrast between 1906 and 1914 was observed. In 1906, Korea produced scarcely 25,000 kin (Kin equals 1-1/3 pounds) while in 1913 more than 130,000 kin was produced. Tobacco, also of an improved variety from America, has been brought up from its position among the minor crops to an output that now practically supplies the Korean demand.

The silk worm, its breeding, culture and products together with the machanical operations of spinning and weaving, were illustrated in the remarkable series of exhibits which showed the value of science as applied to the economics of silk production, since no haphazard methods of breeding are permitted, but every moth is examined under the microscope before being mated, although these same moths are the highest types of a carefully selected series.

The Ginseng monopoly which yields more than a million yen of revenue to the government was well set forth in exhibits of a practical nature intended to train the farmer in the proper culture of this important medicinal plant. In the horticultural division were shown not only the native fruits, but apples, peaches, pears, plums, grapes, and berries of various kinds, originally brought from the United States, were shown to be thriving in their adopted soil. In connection with this, exhibit methods of using the fruit, such as packing and canning, were set forth while attached to each exhibit was an expert who could be consulted by growers as to the best methods for increasing their yields or conserving their trees. Models of the reforestation operations in which tens of millions of trees are being planted annually were shown and modern forest tree nursery methods illustrated in detail.

The great importance of this reforestation will be seen when it is known that the total area of mountain and forest lands in Chosen is sixteen million cho. of which eleven million is practically treeless, two million of this latter area being absolutely barren. Despite this, there are still some forests in Korea and the showing of fine timber in the exposition seemed rather to contradict the necessity for reforestation.

In marine products, an excellent display was made, especially by the Fisheries Guild that is the largest factor in this industry. Despite that more than twenty-six thousand persons are enrolled in this organization which owns six thousand six hundred fishing boats, the catch of fish is far short of the demand and the importation of fish into Chosen is upwards of half a million yen annually, so that the authorities are doing everything they can to extend this industry.

Korea as a mining country is very favorably known to a great many stock-holders in the United States, England and France, whose money has enabled several foreign companies to develop the gold and copper mines of Chosen and visitors to the mining exhibit were shown a fine array of geological specimens. Economic minerals were shown in a mountain of gold bearing quartz with great blocks of copper and silver ore, graphite, iron, emery, and every kind of coal from peat to anthracite. In connection with this exhibit of products was one of methods, in which were gathered together models of smelting furnaces, refining plants, large scale models of mining operations, as well as geological models of the country including one showing the longest tunnel in the country.

An interesting feature of the electrical exhibit was a real water-fall which drove a turbine coupled to a generator set, the power being distributed to various classes of machines, from sewing machines to flour mills, thus illustrating to the Korean what can be done with the many rapid rivers whose power now is practically entirely neglected.

The Railway Pavilion was a structure of circular ground plan with a central tower that made it one of the dominating features of the exposition. In it were many beautiful landscapes showing the special points of interest along the routes, while large-scale maps and models of bridges served to show the working of the railway proper. A huge relief map showing Northern Asia and part of Europe, enabled visitors to see the importance of Korean Railways as regards both Japan, Siberia and China. Considerable attention was

Manufactures and Liberal Arts Building

Building for Educational Exhibits

given to the electrical side of the exhibition and the scene in the grounds at night when the buildings were illuminated, was quite brilliant. Aside from the large number of foreign visitors the exposition attracted to Korea, it was an economic success whose value cannot be measured for years to come since it gave the Koreans an opportunity of viewing their country as a whole, of studying various activities undertaken by the Japanese Government in their behalf and furnished them with a living contrast of modern as against the old methods before their "morning calm" was ruffled by the energetic Japanese coming in from the East. The exposition marked a progress in education and material benefits that was most surprising to those who had not followed the work of Japan in Chosen during the decade since the war with Russia, and served as a monument to the endeavors of the Japanese in the reformation of this "backward nation" which is now to all intents and purposes, as well as politically, a part of the Japanese empire.

# CHOSEN RAILWAYS REPORT FOR YEAR ENDING MARCH 1914

[Presented to the Governor-General of Chosen by the Director of the Railway Bureau]

The average working mileage of the Chosen Railways for the year in passenger traffic was 910 miles and that in goods traffic 911.1 miles, showing increase of 107.1 miles in the former and 113.8 miles in the latter over the preceding year. The train mileage totalled 3,570,366 miles, the number of passengers carried, 4,005,441 and tonnage of freight hauled, 1,388,915 tons, showing increases of 554,379 miles in train mileage, 596,419 in passengers, and 283,553 tons, in freight, compared with the figures for the preceding year. The aggregate passenger and freight mileages were 173,743,488 and 123,427,673 respectively, being an increase of 8,708,937 in the former and of 23,145,173 in the latter over the preceding year. The receipts for the year were Yen 3,815,806 from passengers and Yen 2,534,042 from freight, making a total of Yen 6,349,848 and showing an increase of Yen 522,880 over the preceding year.

The fine results attained were due to the increase in traffic mileage which naturally caused economical development in the peninsula and absorbed new traffic; also the different arrangements made to induce passengers and goods traffic apparently had much to do with securing such results. The bright condition in passenger traffic prevailing since the end of the preceding year continued, and the standard of living in general gradually rose, resulting in the success enjoyed in running excursion trains to Sodo and Kaijyo. Though traffic was rather low during the summer, in autumn it increased owing to the transportation of soldiers stationed in Chosen for their manœuvres, parties of school boys to see them, and visitors to exhibitions at Taikyu, Heijyo, and Chinnampo; besides, the opening of the Japan-Manchuria through passenger traffic in May and the Japan-China through passenger traffic in October brought us a new field of work and our prospects in this line of transportation are very hopeful. In goods traffic, a one-third reduction in customs duty which had been under consideration for years was put into force, and the reduction in freight rates for goods to Manchuria was put into force at the same time. Consequently the volume of such goods as cotton cloth, cotton yarn, flour, sugar, etc., transported over our line was much increased, though these goods were mostly sent by sea heretofore: exportation of Manchuria beans and grains to Japan was also partly carried on over our line. Transportation became still brighter by the abolition in July of the tax levied upon rice exported from Chosen to Japan. In January, 1914, the Japan-Manchuria through goods traffic was opened, thus laying hands upon the international through goods traffic. All these became factors in the development of the goods traffic, directly or indirectly.

The principal traffic arrangements made during the year were as follows: consequent upon the completion of the new pier at Fusan, the Fusan-Antung express was made to arrive at and depart from the pier since April to facilitate train connection with the channel steamers. In May the time-schedule for all lines was revised, extending the Fusan-Keijyo express to Antung and increasing the number of local trains on the Keijyo-Shingishu line at the same time. In September the Information Office of our Traffic Department was opened at Tokyo for the sale of tickets, registration of baggage and parcels, and giving information to tourists, all aimed at helping travellers for Chosen and Manchuria. As regards the joint traffic, in May the Japan-Manchuria through passenger traffic, as well as that between the Chinese Eastern and Usuri Railways and our lines, was opened, and in October the through passenger traffic between the Imperial Government Railways of Japan and our line and the Peking-Mukden line of the Chinese Government Railways was opened. Second class service on the Chosen-Manchuria express and the sale of express train berth tickets were started in November. In January, 1914, the Japan-Manchuria through goods traffic was opened. Besides, not a few extensions and improvements were made in the joint traffic between the Imperial Government Railways of Japan, South Manchuria Railway, and our line.

We attained a reasonable result from our station hotel business in consequence of improvements made in hotel equipments and the increase in passengers from the West to the East. We may also say that the increase in guests stopping at our station hotels lately is due to the comfort afforded them. The results were 1,134 guests stopped at the hotels, making 2,003 in the aggregate, 7,605 guests for meals, 511 guests for banquets, and Yen 18,721 in hotel receipts.

The dining car service on express trains and the refreshment-room service came under our direct management in April, 1913. Various improvements were made in the service and equipment which made them popular among Japanese and foreign passengers. Their results for the year were 33,254 guests and Yen 31,594 for the dining cars, and 10,025 guests and Yen 9,709 for the refreshment-room.

The store-house business was commenced this year; store-houses at Keizan and ten other stations were opened in July, and at Rensen and one other station in October. This business in Chosen is as yet in an undeveloped condition, and in only a few places are perfect store-houses established; consequently development has been very slow. But, by the opening of store-houses under our own management, consigners as well as the merchants in general have been much assisted and given great convenience in their business transactions. Though we could not expect to obtain conspicuous results in this direction at the beginning, we are sure of their efficiency and development in the future.

The locomotive mileage during the year totalled 4,160,119 miles and the converted carriage and wagon mileages 28,064,309 miles; coal consumed amounted to 185,761,845 kin for running and 18,002,870 kin for lighting, etc., being 203,764,715 kin in the total; oil consumed reached 90,289 sho for locomotives and 84,146 sho for carriages, wagons, etc., being 174,435 sho in the total. Compared with the figures for the preceding year, these show increase of 673,061 in locomotive mileage, 4,937,905 in carriage and wagon mileage, 6,581,898 kin in coal consumed for running, and 2,558,589 kin in that for lighting, etc., 13,165 sho in oil for locomotives, and 14,679 sho in that for carriages, wagons, etc.

Rolling stock returns show 154 locomotives, 268 carriages, and 1,538 wagons, being increases of 16 locomotives, 59 carriages, and 93 wagons.

The principal items of equipment and improvement made to rolling stock, etc. were the addition of 16 locomotives, 57 carriages, and 93 wagons, and the erection of 33 spans of girders, besides the equipping of two locomotives with steam brakes, three carriages with electric lights and fans, 114 wagons with air train pipes, and 15 with steam train pipes.

The aggregate length of electrical communication lines at the end of the year was 2,453 ri; telegraphic apparatus installed numbered 137, telephonic 934, and blocks 267. Railway telegraphic stations numbered 144; railway messages dealt with were 3,702,410, and public messages 247,777, being a total of 3,950,187. The revenue from public messages was Yen 8,250. Generating stations numbered 2, with engines of 830 h.p. in total capacity, and 466 k.w. in that of generators. Electric lamps numbered 34 arc and 6,297 incandescent, 7 of the former and 2,030 of the latter being supplied under contract. Besides, those installed in carriages numbered 1,975 in all.

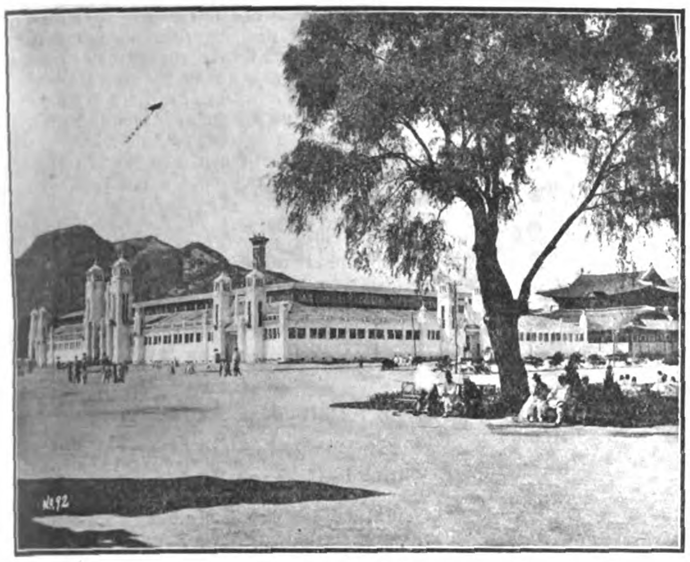
Traffic mileage at the end of the year totalled 970.2 miles and the aggregate length of tracks, 1,192 m. 13 ch., being increases of 133.2 miles in the former and 158 m. 66 ch. in the latter over the preceding year. The number of stations was 154, being greater by 23 than in the preceding year.

As regards the progress of construction works the following may be mentioned: on the Kei-Fu line the construction work of new shunting at Nandaimon Station was completed; on the Kei-Gi line alteration to Hakuba Station, new building of a compressed air station at Ryuzan, and transference of patients' room at the Ryuzan Railway Hospital were all completed; on the Heinan line the pier at Chinnampo was completed, and enlarging of every station is still in progress.

On the Kei-Gi line the construction work made striking progress and by the end of the year Ryuzan-Kenfutsuro (86.5 m.) and Gensan-Kozan (28.1 m.) sections were opened to traffic; in the direction of Ryuzan nearly all the work was finished, leaving only the gravelling to be done, while toward Gensan most of the bridging and tunnelling was completed, and erection of bridge girders and laying of rails are in progress. We are expecting the line will be open to traffic by August, 1914.

On the Konan line, Taiden-Seiyu and Riri-Kunsan sections (96.7 m.) were opened the previous year, and in January, 1914, the remaining portion was completed and the whole line opened to traffic. But as this line was constructed rather hurriedly, reconstruction is now in progress.

The Chosen Hotel is now in the course of erection in Hasegawacho, Keijyo, the foundations of it were laid during the previous year, and the laying of mains for water and sewage, and the skeleton of the main building were finished during the year now reviewed; the



Manufactures and Liberal Arts Building

Throng of Koreans Awaiting Opening of the Gates

furnishing, electric installation, plumbing, and other equipments are now in progress.

Receipts relating to traffic during the year amounted to Yen 7,852,185 and expenditure to Yen 6,283,958, leaving a balance of Yen 1,568,227 as profit. Compared with the figures for the preceding year, the increase in receipts was Yen 1,034,922, that in expenditure Yen 319,563, and that in profit Yen 715,359.

In the railway store account, the earnings amounted to Yen 5,494,118 and the disbursements to Yen 5,493,559, leaving a balance of Yen 559.

The value of contracts in the purchase of railway stores amounted to Yen 4,626,714, being an increase of Yen 163,983.

The capital invested in the railways since the commencement of their construction up to the end of the previous year totalled Yen 114,720,386. Adding to this the sum of Yen 8,661,648, which is the increase made during the year, the total capital invested up to the end of the year under review reaches Yen 123,382,034.

The members of the Relief Association numbered 4,712 at the end of last year; adding 1,630 newly admitted and deducting 1,075 withdrawals during the year, they numbered at the end of the year 5,267. The receipts totalled Yen 84,147; of this amount Yen 29,235 was the grant from the Government, Yen 45,950 represented subscriptions from members, Yen 8,957 interest on deposit, and Yen 5 miscellaneous receipts. The disbursements totalled Yen 32,175; of the amount Yen 7,365 was the grant made in regard to injuries, Yen 10,961 for deaths, Yen 6,446 for medical allowance and Yen 7,403 was refunded to members resigning. A sum of Yen 185,839, made up of Yen 51,972, the balance at the end of the year, and Yen 133,867 transferred from the previous year's account, was carried forward to the account for the year following.

Light railways and tramways in Chosen in operation at the end of the year were five, namely, the system operated by the Nikkan Gas Electric Co., and four others operated as private concerns. The aggregate capital of these light railways and tramways totalled Yen 10,426,600, of which amount Yen 5,748,695, was paid up, while the amount invested in them reached Yen 2,530,898. The mileage open to traffic totalled 23.7 miles, consisting of 16 miles of electric tramway in Keijyo, 5.8 miles of light railway between Fusanchin and Torai in Keishonando, 1.2 miles of manual tramway in Heijyo, and 0.7 mile of manual tramway for goods between Wakan railway station and the wharf on the Rakuto River. The mileage to be opened hereafter amounts to 181.2 miles, namely, 0.2 mile in Keijyo, 7 miles in Fusan (electric tramways), 115.2 miles between Torai and Keishu, Keishu and Taikyu, Keishu and Hoko, and Urusan and Choseiho, 13.4 miles between Shinshu and Senshin, 8.4 miles between Koshu and Shoteiri, 16 miles between Riri and Zenshu, 8.9 miles between Kanko and Seikoshin, and 12.1 miles between Seishin and Ranan (light railways).

In passenger traffic, in addition to the prosperous condition we have enjoyed since the end of the previous year, we had more people taking advantage of our excursion trains to Sodo and Kaijyo, besides a great transportation of troops, and trips by the crews belonging to the 1st Squadron. In May revision of the time-table for all lines was made, and express trains were run on to Antung and more local trains were run on the Kei-Gi line, all for the greater convenience of passengers. At the same time the Japan-Manchuria through passenger service was opened, thus laying hands on the international passenger traffic. Thus we can credit all these arrangements, besides many others, with being the cause of our traffic showing up so prosperously. Generally we have fewer passengers and diminished receipts during summer, and such was the case this year, too, though we suffered nothing from storms or rains. In autumn we transported troops for their manœuvres and a large number of schoolboys to see them. Special trains were run or reduction in fares was made for visitors to exhibitions at Taikyu, Heijyo, and Chinnampo, for excursions to the chestnut woods at Kaijyo, and for the annual meeting at Keijyo of the various Episcopal Churches and Miroku's great festival at Ronzan. In October the Japan-China passenger through traffic was opened and our con-

Railway Building and Old Palace Gate

Building for Fine Arts Exhibit

nection with the Peking-Mukden line was effected, bringing a greater number of passengers over our railways. In winter we had no particular business worth mentioning except the transportation of part of the troops stationed in Chosen, both relief and time-expired, though the weather was not so severe and we had the usual amount of passenger traffic. In the new year our traffic was rather low, as usual, owing to the cold weather and other causes, though the completion and opening of the Konan line added a certain degree of prosperity to the lines already opened.

Thus the results of passenger traffic during the year showed an average of 523 passengers and Yen 11.49, per day per mile being decreases of 40 in passengers and Yen 0.61 in receipts, as compared with the figures for the preceding year. These are due chiefly to the opening of new lines. The increase of 0.04 sen making 2.01 sen in receipts per passenger per mile, and decreases of 2.7 miles in average mileage per passenger and 4 sen in average receipt per passenger, making 34.8 miles in the former and 70 sen in the latter, are due to less transportation of tourist parties over long distances.

As regards the goods traffic, the quantity transported increased consequent upon the opening of new lines.

With reference to the transportation of important goods, we may say that the rice transported amounted to 161,000 tons, being more than 63,000 tons than in the previous year, in consequence of the abolition of transit duty on rice for Japan, importation of foreign rice into Chosen, and exportation to Vladivostock. The principal places to which rice was destined were Keijyo (44,000 tons), Fusan (37,000 tons), Kunsan (19,000 tons), and Jinsen (14,000 tons). The rice imported into Chosen is increasing in quantity, and demand for it is extending of late to the northern part though formerly it was restricted to the southern part only. The importation of millet has also much increased lately, showing 48,000 tons in quantity transported (40 per cent. more than in the previous year), 15,000 tons of it being by direct importation. The transportation of beans reached about 9,000 tons more than in the previous year notwithstanding the smaller crop and exportation. The demand for refined salt was active, too, and about 20,000 tons of it were sent from Jinsen. The consumption of coal in Chosen has considerably increased in consequence of the development in various industries and its transportation reached 169,000 tons, 49,000 of the quantity being from Fushun (about 200 per cent more than in the preceding year). We did not see any difference in the transportation of lumber as there was a great quantity of it imported from Manchuria and sent to Heiten, though we did not handle so great a quantity from the Yalu as in other years. As regards firewood and charcoal, we transported only 3,000 tons more than during the previous year as the weather was milder than usual. The transportation of graphite from Kokan and Shinanshu greatly increased during the year and reached 9,000 tons in the total, which is almost double that of the previous year. Besides, the transportation of flour, fresh fish, vegetables, fruit, cotton fabrics, straw bags, straw ropes, straw mats, and manure each reached about 10,000 tons, showing more or less increase than in the preceding year. The transportation of salted dried fish, mintai-fish, petroleum, and tobacco was rather low.

In the condition above mentioned, the average tonnage per day per mile was 371 tons and receipts, *Yen* 7.62, being an increase of 26 in tonnage and a decrease of *Yen* 0.22 in receipts compared with the preceding year. The decrease in receipts, notwithstanding the increase in tonnage, is the result of reducing the mileage rate in proportion to increase in distance. The decrease of 0.17 *sen* in average receipt per ton per mile, showing 1.91 *sen*, and the decrease of 1.8 miles in average mileage transported per ton and 18 *sen* in receipts per ton, showing 88.9 miles in the former and *Yen* 1.70 in the latter, were due to reduced transportation of railway supplies over short distances.

The results of passenger and goods traffic according to the different lines (details of which are given in tables annexed) are as follows:

Passenger

| Line | Av. Traf. Mileage | No. of Passengers | Coaching Receipts | Av. Receipts per Day per Mile |
|---|---|---|---|---|
| | | | Yen | Yen |
| Kei-Fu | 318.1 | 2,913,789 | 2,138,584 | 18.42 |
| Kei-Gi | 360.8 | 1,535,876 | 1,204,060 | 9.14 |
| Kei-Gen | 93.5 | 354,760 | 185,772 | 5.44 |
| Konan | 137.6 | 572,811 | 287,390 | 5.72 |
| Total | 910.0 | 4,995,441 | 3,815,806 | 11.49 |

Goods

| Line | Av. Traf. Mileage | Tonnage of Goods | Goods Receipts | Av. Receipts per Day per Mile |
|---|---|---|---|---|
| | | | Yen | Yen |
| Kei-Fu | 318.1 | 810,015 | 1,345,131 | 11.59 |
| Kei-Gi | 361.9 | 465,886 | 960,375 | 7.27 |
| Kei-Gen | 93.5 | 189,404 | 101,101 | 2.96 |
| Konan | 137.6 | 158,191 | 127,425 | 2.54 |
| Total | 911.1 | 1,388,915 | 2,534,042 | 7.62 |

## Results of Station Hotel Business

The guests at the Station Hotel at Fusan and Shingishu during the year numbered 1,134, making when reckoned by length of stay 2,003. Meals served reached 7,695; and dinners 21, the guests at these numbering 511. The receipts at the two station hotels amounted to *Yen* 3,520 from rooms, *Yen* 11,485 from meals, *Yen* 2,778 from beverages, *Yen* 229 from tobacco, and *Yen* 709 from miscellaneous sources, making *Yen* 18,721 in the total. These show increases of 59 per cent. in guests, 12.8 per cent. when reckoned by length of stay, and 34.5 per cent. in meals, compared with the figures for the preceding year. Though we had an increase of 62 per cent. in the number of dinners served, there was a decrease of 31 per cent. in the number of guests, offset by an increase of 21 per cent. in receipts from the dinners.

We have made various improvements in accommodation during the year and put our hotel coupons on sale at Messrs. Thomas Cook & Son and the International Sleeping Car Co. for the convenience of passengers. These helped much in inducing guests to visit the hotels; the brighter condition of the traffic between Europe and Asia, too, naturally increased the number of guests at the hotels.

The dining-cars and the refreshment-room at Nandaimon Station were at one time managed under contract; but since April, 1913, we have taken them under our own managements in various points for the convenience of passengers. The guests we had in dining-cars during the year were 33,254, and the receipts, *Yen* 31,594. The guests at the refreshment-room numbered 10,025, and the receipts amounted to *Yen* 9,709.

The warehouse business is a new line, and warehouses were opened at Keizan and ten other stations on July 1, and at Rensen and one other station on October 15. The warehouse business was in an infant state and greatly obstructed industrial progress. But since the opening of warehouses under our own management, merchants in different localities are utilizing them to their fullest extent. Though we can not yet show startling results in this new line of business, we issued 807 dock warrants against 1,210 deposits of goods, about 70 per cent. of the dock warrants being issued as security to bankers, etc. The principal goods deposited in the warehouses were grain, straw ropes, straw bags, straw mats, and tobacco. The total tonnage deposited reached 9,639 tons, and the average tonnage per day was 1,617.8 tons. The storage fees amounted to *Yen* 4,652 and miscellaneous receipts to *Yen* 127, reaching the total of *Yen* 4,779, being *Yen* 0.011,5 per ton per day. Dock warrants, bills of deposit, and advices issued reached 1,306, of which 30 per cent. were issued to Koreans.

## Results of Locomotive Working

The mileage of locomotives on all the lines during the year was 4,160,118.5 miles and the converted mileage of cars was 28,064,309.3 miles, while the coal consumed for running amounted to 185,761,845 kin and the oil (for cylinder, machine and air pump) to 90,289.47 sho. These show increases of 19.3 per cent. in locomotive mileage, 21.4 per cent. in car mileage, 3.7 per cent. in coal, and 17.1 per cent. in oil, when compared with the preceding year.

The following are the results of locomotive working on the different lines:

| Line | Locomotive Mileage | Converted Car Mileage | Coal Consumed for Running | Oil Consumed for Running |
|---|---|---|---|---|
| | | | *kin* | *sho* |
| Kei-Fu ... ... ... ... ... ... | 1,979,259.8 | 12,968,043.9 | 93,821,825 | 44,493.42 |
| Kei-Gi ... ... ... ... ... ... | 1,703,742.4 | 12,783,155.5 | 73,047,770 | 36,838.80 |
| Kei-Gen ... ... ... ... ... ... | 149,631.1 | 830,497.6 | 7,024,150 | 3,015.50 |
| Konan ... ... ... ... ... ... | 327,485.2 | 1,482,612,3 | 11,868,100 | 5,941.75 |
| Total ... ... ... ... ... | 4,160,118.5 | 28,064,309.2 | 185,761,845 | 90,289.47 |

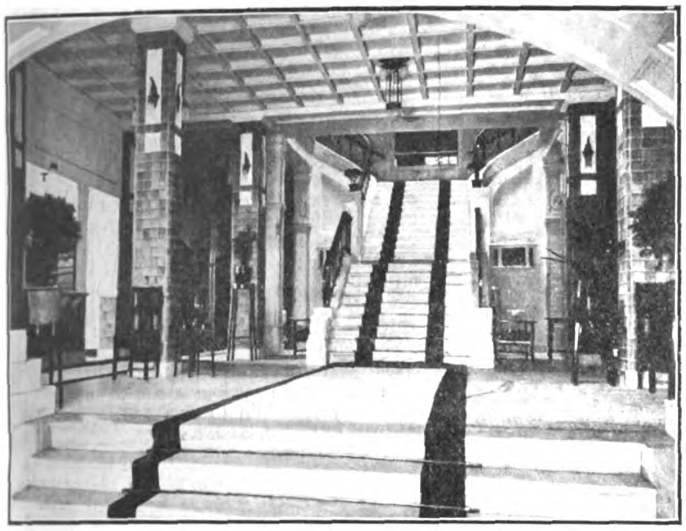
Rolling stock at the end of the year included 154 locomotives, 268 carriages, and 1,538 wagons, being increases of 16 locomotives, 59 carriages, and 93 wagons.

Workshops in the year numbered three, namely, Soryo and Heijyo Workshops; the number of artisans and workmen at the end of the year was 1,676; their aggregate working days in the year reached 496,120 and the total amount of wages *Yen* 378,021. The average number of artisans and workmen employed per day was 1,517.2, their wages amounting to *Yen* 1,156.03, the average wage per man per day being *Yen* 0.762.

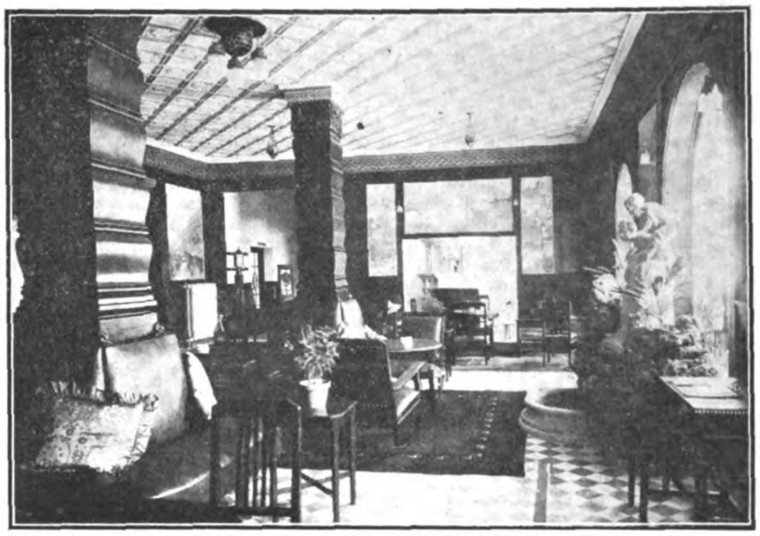
Principal items of building and repair were the building of one private car, six 1st and 2nd class composite sleeping cars, six 2nd & 3rd class composite coaches, twenty 3rd class cars, eight baggage, mail and brakevans, sixteen baggage and brake-vans, fifty-three covered wagons, and forty open wagons, and the repairing of 165 locomotives (22 being trifling repairs), 480 carriages, and 1,147 wagons. In erection work, sixteen locomotives newly bought, two private cars, and thirty-three spans of girders may be mentioned. Conversions made were 10 covered wagons into goods and brake-vans, while new equipments made were steam-brakes to 2 locomotives, electric lights to 3 carriages, w. c. and vestibules to 4 carriages, air train pipes to 81 coal cars, 33 open wagons, and steam train pipes to 15 covered wagons, besides changing the couplers of 9 wagons, and the windows and other arrangements fitted to 12 covered wagons for military use. Three locomotives, five carriages, and 26 wagons were taken to pieces and packed for conveyance to Mokuho and Gensan, and again set up at these places.

New arrangements at Soryo Workshops were the equipment of a core oven of large type in place of a temporary one, and the improving of a tyre-filling apparatus; the generating and accumulating apparatus for batteries in carriages was completed during the year. The motive power in use at the end of the year was supplied by four sets of steam engines (170 h-p.).

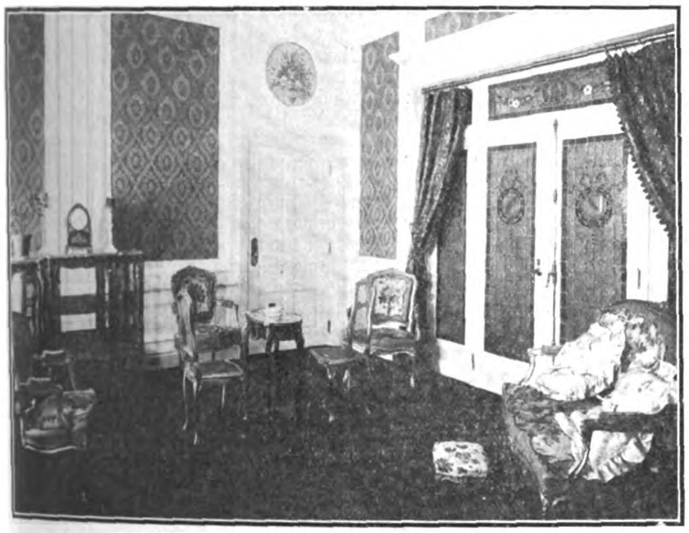
# Interior Views of the New Chosen Hotel in Seoul



Lobby and Main Stairway



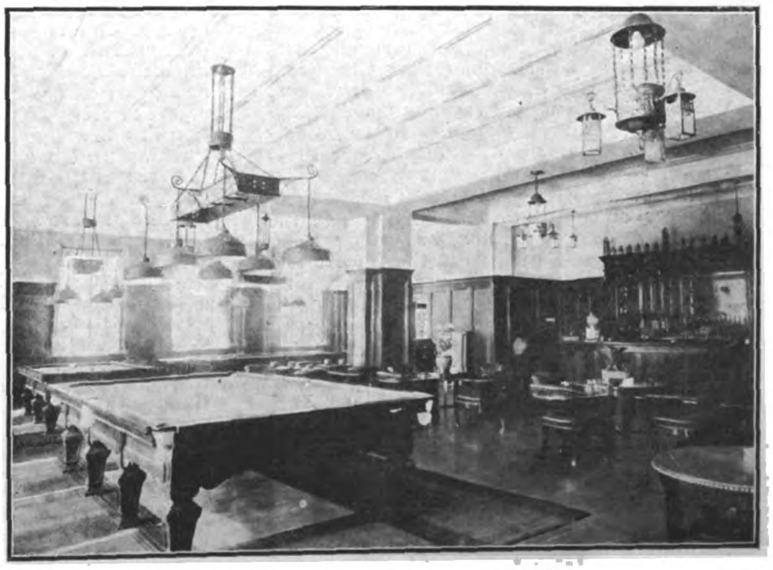
Lounge and Reception Room



State Bedroom with Tapestry Hangings

One of the 88 Bedrooms with Attached Baths

Dining Room at Night—Tables set for Banquet



Corner of Billiard Room and Bar

At Ryuzan Workshops, on completion of air compressor station newly built, 3 sets of boilers and 2 sets of compressors were erected and set to work; in the erecting shop, a set of goliath cranes was fixed up. The motive power at the end of the year was supplied by 2 sets of dynamos of 224 k.w. (one kept for emergency), 15 sets of motors (649 h.p. in all), and 2 sets of air compressors of 106 h.p. (one kept for emergency).

The motive power at Heijyo Workshops at the end of the year was supplied by a set of steam engines of 150 h.p.

### Electrical Communication

Telegraph stations at end of the year numbered 144; of the number 83 are public telegraph stations, being increases of 15 in the former and 9 in the latter over the preceding year in consequence of the opening of new lines. Eighty-two of the number are installed with both telegraph and telephone apparatus, and 62 with telephone apparatus only.

Telegraphic messages handled numbered 3,050,187 during the year, showing an increase of 4,421. Those dealt with per station per day were 70 railway telegrams and 9 public ones, showing decreases of 6 in the former and 4 in the latter compared with the preceding year.

The percentage of different messages was 28.3 per cent. despatched, 37.6 per cent. received, and 34.1 per cent. transmitted, showing an increase of 0.8 per cent. in those received and decreases of 0.1 per cent. in those despatched and 0.7 per cent. in those transmitted.

Circuits at the end of the year numbered 676, showing an increase of 64 over the preceding year. Circuits may be classified into 28 telegraphic circuits, 482 telephone circuits, and 166 signal circuits, being increases of 2 telegraphic, 39 telephone, and 23 signal circuits. The circuits for both telegraph and telephone adopting simultaneous telegraphy and telephony numbered 21, being 6 telegraph, 12 telephone and 3 signal circuits, being an increase of four over the preceding year in consequence of new lines being opened to traffic.

Machines at the end of the year comprised 137 telegraphic apparatus, 134 telephone apparatus, 267 block apparatus, 9 telephone switch boards, 53 electric bells, 16 repeaters, and 2 each of automatic indicators and release locks, showing increases of 15 in telegraphic apparatus, 57 in telephone apparatus, 32 in block apparatus, 8 in electric bells, 2 in repeaters, and 2 in release locks over the preceding year.

New offices for public telegrams opened during the year are Mokpo and 8 other stations. The delivery of messages arriving at Shoteiri and 4 other places was discontinued in consequence of an increase in telegraphic arrangements by the Communications Bureau along the railway line. For through communication between Mokpo Post Office and Mokpo Railway Station, and Kunsan Post Office and Kunsan Railway Station, one telegraphic apparatus belonging to the Communications Bureau was installed at these railway stations.

The revenue from public telegrams during the year amounted to *Yen* 8,249.61 and the average revenue per station, *Yen* 99,393, being increases of *Yen* 3,009.26 in the former and *Yen* 52.754 in the latter over the preceding year.

The following are the principal items to be mentioned concerning the electrical arrangements and their results during the year.

Power stations at the end of the year numbered 2, steam engines 3 (830 in total h.p.), and generators 3 (466 k. w. in capacity); one steam engine and one generator are kept in reserve.

Motors at the Ryuzan Workshops numbered 15 and their total h.p. amounts to 649.

The electric lights supplied by the Railway Bureau's own power station numbered 4,294, representing 3,666 when converted to 16 candle power, and those under contract 2,037, representing 2,394 when converted to 16 c. p. These show increases of 13.5 per cent. in the former and 16.4 per cent. in the latter compared with the preceding year.

130 carriages were equipped with 1,975 electric lights, and 130 with motor fans, their motors being 59 and batteries 1,416 in number respectively. These when compared with the preceding year show increases of 40 in the number of carriages, 710 in lights, 69 in motor fans, 18 in generators, and 432 in batteries.

The total amount of current generated during the year reached 1,184,668 k.w.h. (3,244 k. w. h. average per day), while the total expenditure was *Yen* 29,317.85 and the coal consumed 5,214,563 *kin*, corresponding to *Yen* 0.025 in expenditure and 4.4 *kin* of coal consumed k. w. h. The expenditure consisted of 59.2 per cent. for fuel, 4.6 per cent. for oil and grease, 12.2 per cent. for repairs made, and 24 per cent. for miscellaneous purposes. The average cost of coal per 10,000 *kin* was *Yen* 33.31. These figures represent increases of 0.1 per cent. in current generated, 16.1 per cents in expenditure, 23 per cent. in coal consumed, 19 per cent. in expenditure per k. w. h., 22.3 per cent. in coal consumed per k. w. h., and a decrease of *Yen* 3.366 in average cost of coal per 10,000 *kin*.

### Kei-Fu Line Construction and Improvements

The construction of a new shunting line at Nandaimon Station which had been begun the previous year was finished. The double track between Ryuzan and Roryorshin was also finished during the year.

In improvement work, the body, embankment, pier (Nos. 4, 5, 9) and girder works of bridge No. 2 over the Kan, as well as rebuilding bridge No. 2 on line No. 1 over the same river, which had been in the course of construction since the previous year, were completed; on the Masan branch, the filling work of the road-bed of Shinei-Rakutoko section (16 m. 50 ch. 17 m. 33 ch. from Masan terminus) was finished during the year.

### 2. Kei-Gi Line

On this line, the building of a temporary station at Mochuri, alteration to Hakuba Station, removal of the auxiliary building of the railway school at Ryuzan, and the removal of official houses at Kosui and Seikei, which had been in progress since the previous year, were finished during the year. The rebuilding of the main building of Shin-anshu Station, the building of an official house at Koyu, dormitory at Shingishu, the compressed air station and patients' room attached to the railway hospital at Ryuzan, the branch line on the Seisenko, and branch for transporting gravel on the Hakusen were all finished during the year.

As regards the Hei-Nan branch, the landing depot at Chinnampo which had been in course of construction since the previous year was finished; the enlarging of every station is still being carried on. The alteration in grade of a part of Heijyo-Taihei section, the construction of a new flood opening No. 3 for the R. Futsu, pitch stone work on the embankment of the Heinan Road (2 m. 30 ch. from Heijyo), and sewer work at 17 different points on the same road were all finished.

### 3. Kei-Gen Line

This being a new line, 138.4 miles long, between Ryuzan and Gensan, the construction of it has made conspicuous progress since its commencement in October, 1910, and the Ryuzan-Kenfutsuro section (86.5 m.) and the Gensan-Kozan section (28.1 m.) are open to traffic. In the direction of Ryuzan the only remaining work is the ballasting, and in the direction of Gensan almost all the earth, bridge, and tunnel works were finished, and the erection of girders and laying of rails are now in progress. The following are general remarks on the work.

Ryuzan-Sempo section (94.1 m.): Of this section the distance between Ryuzan and Tetsugen (60.8 m.) was opened to traffic in the previous year; 16 m. between Tetsugen and Fukkei were opened in July, 1913, and 9.7 m. between Fukkei and Kenfutsuro in September: the earth, bridge, and tunnel works, and the laying of rails for 7.6 m. from Kenfutsuro to Sempo were finished during the year and ballasting is now in progress.

The formation level of portions of the track at a distance of 1 m. and 9 m. from Ryuzan is now in hand.

Sempo-Kozan section (16.2 m.): This section runs along steep mountain sides and consequently has 14 tunnels (aggregating 11,149 ft.) and 35 bridges (aggregating 5,618 ft.), and is considered the hardest part of the work on the line. But the construction made conspicuous progress during the year, and 96 per cent. of the earth work, 88 per cent. of the bridge work, 93 per cent. of the tunnelling, and 94 per cent. of the work as a whole were finished during the year.

Kozan-Gensan section (28.1 m.): The construction of this section was begun in the fiscal year 1911, and 24.1 m. from Ryuchiin to Gensan was finished in August, 1913, and 4 m. from Ryuchiin to Kozan in October, and opened to traffic.

Accompanying the progress of the earth and other works, the rails were laid and construction trains run as far as Sempo, 94.1 m. from Ryuzan.

Building Works: The station main building and official houses at Gesseiri and Heiko, the station main building, official houses, locomotive shed, and dormitory at Fukkei, and the official houses at Taikori, the construction of which had all been started during the previous year, were finished in the year reviewed. The erection of storehouses at Rensen and Tetsugen, and the station main building and official houses at Kenfutsuro were all finished, while the temporary storehouse at Heiko was transferred to Fukkei and erected as a doctor's office. The station main building, official houses and dormitory were built at Koran; official houses at Shakuoji, and the official houses and dormitory at Ampen were finished, while the erection of the station main building and the enlarging of a dormitory at Gensan were done during the year.

Electric Line Works: The laying of the telegraph line between Giseifu and Tetsugen which was started the previous year was finished: a block line was built on the Seiryori-Giseifu section, and the temporary poles between Giseifu and Rensen were replaced by new ones, while a telegraphic line was erected along the Sempo-Kozan section and a tablet line on the Kozan-Gensan section.

### 4. Konan Line

This is a new line (161.3 miles) running from Taiden to Mokuho with a branch line to Kunsan of 14.8 miles. The work made great progress from its commencement in October, 1910, and the Taiden-Seiyu section (81.9 m.) and the Kunsan branch (14.8 m.) were opened to traffic during the previous year. The Mokuho-Kakkyo section (21.9 m.) was opened to traffic in May, 1913; the Kakkyo-Rashu section (13.3 m.), in September, the Rashu-Shoteiri section (8.7 m.) in October, and the remaining work was finished in January, 1914, thus opening the whole of the line to traffic.

As the construction of this line was carried on hurriedly, most of the bridges and culverts were of wood; the earth work, too, at stations was insufficient, and we had overflows at different stations in flood-time. Consequently, the line demanded reconstruction at many places, and the parts most urgently calling for it were taken in hand during the previous year. But in the year under review we took up all the reconstruction work. The following are general remarks on the work:

Kasuiin-Tokei section: The reconstruction for 2.3 miles of the approach to bridge No. 2 over the R. Kasuiin, which was begun the previous year, was completed.

The reconstruction of 8.7 miles of track (starting 0. m. 27 ch. from Taiden) was taken up in February, 1914, and 64 per cent. of the earth work and 27 per cent. of the bridge work were done during the year.

# ELECTRICITY IN CHINA

[BY MR. T. H. U. ALDRIDGE IN CASSIER'S ENGINEERING MONTHLY]

The Shanghai Municipal system has been evolved to no little extent upon the lines of the Chinese Customs Service rather than on British municipal lines. The Electricity Department has for some years now outgrown the system, and is in fact, though not in name, a complete business concern supplying on an extensive scale a public commodity dreamt of when the Shanghai Municipal Administration was co-ordinated.

The Shanghai development of electricity in the form of telephones, electric trams, light, heat and power is all tending towards a higher grade and in place of a large coolie population an artisan class will spring up.

Already in Shanghai electricity is being used very extensively for driving machinery, for industrial purposes, such as cotton mills, rice mills, flour mills, printing works and many other industries too numerous to mention. From the extent to which it is now being employed in Shanghai it is reasonable to assume that it is more economical than steam or other forms of power, but beyond this there is the undoubted improvement following electrification of mills and factories, since the elimination of steam boilers reduces smoke and consequently the amount of dirt and gloom which is always associated with industrial cities. Therefore, it is a just claim to put forward that electricity contributes to no little extent towards improved conditions of public health.

### Chinese Electrical Undertakings

While on the subject of urban electricity supply, it may not be out of place to offer a little advice regarding the development of this kind of work in Chinese cities. I know there are many difficulties, not only in creating schemes for lighting Chinese towns, but in obtaining the best advice relative to the schemes themselves and the technical details involved. I am afraid an enormous amount of money has already been wasted in many Chinese electrical undertakings simply because there has been no guiding hand to point out which schemes may be suitable and which may not. As things are, it is usual for those setting up or forming a scheme for electricity supply in a Chinese town to ask for tenders from various foreign manufacturing representatives.

Very often a scheme is asked for which will provide so many thousand lamps, a term in itself extremely vague. This being done, the next procedure is for the manufacturers' representative to obtain information upon which to base a complete scheme. I think I am right in saying that very often these schemes are submitted without first-hand or even reliable second-hand knowledge of the conditions obtaining; they are, furthermore, not infrequently handled by foreigners possessing no qualifications whatever for the particular class of work.

From the somewhat scanty information available the schemes are submitted to the manufacturers at home, who, in turn, work out estimates and forward tenders to China for the particular scheme in question. Most of these manufacturers are fully qualified and competent to elaborate excellent schemes, but the conditions under which they are called upon to tender make it almost impossible for the best results to be obtained.

### Manufacturer Not at Fault

A particular manufacturer may have an excellent scheme to propose, but knows perfectly well that it may be far more costly initially than that of his competitors, and, although he would be able to convince those qualified to understand the soundness and advantages of his proposals, yet he has no such opportunity, because in most cases there is no such person or body to whom the scheme can be submitted. Therefore, he puts in a tender which will give more or less satisfactory results, but probably one which he knows is not the best. This is only natural, and no one can blame the manufacturer for so doing; the fault lies with those calling for tenders, that is, those who are responsible for originating the scheme. They themselves rarely know even in a very vague way, what they want; it is only the trained engineer, conversant with the planning and laying out of electric supply undertakings, who can really draw up a comprehensive scheme.

### Cases in Point

I know of some instances where lighting stations have been built in wrong parts of the town, away from water which is required for condensing purposes, and inconvenient for the easy transport of coal, where obviously wrong systems have been adopted. In one case in particular I call to mind where the power station was built a long way from the river and on a hill, the very worst place imaginable. The reason given for this was that if the station were built a long way from the river coal would have to be transported some distance and so require a large number of coolies to handle it, therefore somebody would be able to make a lot of money over the coal transportation. Owing to the station being away from the river it would be impossible to run the plant as economically as if it were built close to it, and here again the element of personal greed came in because it meant the conditions under which the plant would have to operate would be such that 25 per cent. more coal would be required than otherwise; thus, the man supplying the coal would make large profits whilst the undertaking itself would be more or less crippled from the outset.

### Advice Necessary

I think what is badly needed is the employment of consulting or advisory engineers to advise the different Chinese authorities on the question of electricity supply in their cities. These engineers should have no interest in any manufacturing firms—they should be men of high integrity and men who would command implicit trust. They must not be figure heads and their advice should be followed.

If the drawing up of the schemes were placed in the hands of such engineers, not only would the Chinese stand to benefit by having suitable schemes drawn up for them, but the manufacturers would also be in a position to quote for better machinery than they do under the existing conditions, because they all would have a definite plan to tender to and know that the lowest tender would not necessarily be accepted, but the one which, all things considered, would be essentially the best and give the best results in operation.

### Good Material Available

There is excellent material in China to work upon and my experience shows that under proper direction the Chinese can be trained to perform responsible work, and I believe there is a very great future industrially and in the engineering field for China; but the country must recognize that this result cannot be obtained without a long apprenticeship being served and that for a long time help must, as far as I can see, come from the foreigner who has generations of training behind him.

Other countries have also benefited from the influx of foreign blood, and I cannot but think that if China would less grudgingly open out the country and allow the foreigner to help to build up the industries and open up the mineral wealth, the great Chinese nation would forge ahead to an extent comparable with other progressive countries.

## ROSPHALTIC, IRON PROTECTOR

How best to prevent the corrosion of iron or steel is a matter uppermost in the minds of all Engineers and others responsible for the erection and up keep of structures made of these metals. A material which will satisfactorily prevent rust and corrosion, which can easily be applied and which is economical in use is all that can be desired, and with the object of manufacturing such an article, Messrs. Owen Bros. of Hull, England, devoted several years to the serious study of corrosion, its cause and prevention. The result has been "Rosphaltic" the iron protector.

"Rosphaltic" is bitumen in perfect solution, a scientific advancement over mechanical mixture of bitumen and solvent. This does away with all sedimentary material in suspension, which must produce an imperfect film, and thus result eventually in corrosion; a common fault with all solutions which require stirring. The covering power of "Rosphaltic" is great: one hundredweight will cover 4,500 square feet with two coats. This averages out at three times the area covered by the best oil paints. The great economy secured by this is obvious. "Rosphaltic" is damp proof, a property not possessed by oil paint. The possession of this property together with that of expanding and contracting with the metal, renders it a most effective protector of iron and steel when these metals are exposed to the most severe climatic conditions.

## United States Steel Products Co. in new Quarters.

Among the many Shanghai agencies that have been forced by the increase of their business to seek larger quarters, is the United States Steel Products Company, which has removed from 24A Kiangse Road to the New Union Buildings at the corner of Canton Road and the Bund. Here the United States Steel Products Company has secured commodious quarters, from which offices its entire China business will be handled and where its manager, Mr. J.W. Gallagher, who has returned to his desk after a severe illness, will be glad to welcome the many friends and business associates of the company. The removal took place on the 1st. of February.

## LARGE ELECTRICALLY DRIVEN MINE PUMP.

The El Oro Mining & Railway Company, of El Oro, Mexico, has installed what is said to be the largest motor-driven pump equipments over built for unwatering a mine. The pump, which was built by the Goulds Manufacturing Company, Seneca Falls, N. Y., has a capacity of 500 gal. per minute. The construction is such that the pump can be readily dismantled and lowered down an ordinary mine shaft, and when assembled it requires a very little head room. The pump is installed in the bottom of the mine and works against a head of 1,300 ft. The driving motor is a 200-H.P., three-phase, 50 cycle, 440 volt, 485-R. P. M. Westinghouse machine, connected with double reduction gearing giving the crank shaft of the pump a speed of 35 R. P. M.

# TRADE OF TSINAN AND TSINGTAU FOR THE YEAR 1914

[By H. B. M. Consul J. T. Pratt]

*General remarks.*—It is not possible to write a trade report for Tsinan in the usual form for 1914 as no figures of any sort are available even for the port of Tsingtau. The first half of 1914 opened auspiciously. There were good spring rains resulting in an excellent wheat crop. Exports were growing in volume and importers with local representatives pushing the sale of cigarettes, oil and soap all found that their business was rapidly expanding.

*Bright prospects. Outbreak of war.*—At the beginning of the year the Germans had successfully negotiated agreements for the construction of two new railways which would have greatly increased the importance of Tsinan as a centre of railway communications. They had also at length found the capital for working an iron mine—said to be very rich in ore—situated near the Tsinan-Tsingtau Railway. Everything seemed to indicate that Shantung was about to enter on an era of prosperity and rapid development, but all these hopes were destroyed by the unexpected outbreak of the European war. The railway to Tsingtau—the main artery for the trade of Shantung—immediately ceased to be available for the transport of merchandise.

*Floods.*—At the same time disastrous floods occurred in the east of the province, a very large portion of which area was at the same time occupied by Japanese troops who were spread over the countryside in small detachments. The net result may be summed up in a single sentence. Trade became stagnant over the whole province and in the districts east of Tsinan ceased altogether. This stagnation continued till the end of the year, after which, as conditions gradually became more settled, a slight revival took place.

*Tientsin-Pukow Railway.*—In the meantime, however, the Tientsin-Pukow Railway has had an excellent opportunity of becoming the main artery for the trade of the province. Reasonable facilities at Pukow and more rolling-stock are all that is required, but unfortunately the Chinese are not adepts at managing railways to the best advantage. Some attempt has, however, been made to encourage traffic by the institution of cheap through rates.

*Exports.*—The principal exports from the Tsinan district are cotton, groundnuts, hides, tallow and cattle. The only foreign firms with local representation interested in exports are Germans who regarded Tsinan as the hinterland of Tsingtau and therefore specially worth developing. Their business has now, however, practically entirely ceased.

*German losses.*—It is well known that German merchants will take great risks, but it is frequently forgotten that those risks often lead to heavy losses. That has certainly been the case in Tsinan, where the German merchants have needlessly increased the amount of their losses by foolish efforts to impress the Chinese with a sense of their grandeur. For many years the German exporter in Tsinan, occupying palatial premises, has made little or no profit for his firm, while the Britisher, living in very humble quarters, has spread over the province organisations for the distribution of certain imports from which a golden harvest has been reaped. The German exporter has for practical purposes already disappeared from Shantung. It is probable that his place will be taken to a large extent by the even more ubiquitous Japanese, but there is little prospect that any British merchant will find conditions sufficiently attractive to induce him to open a branch here.

*Banking.*—The only foreign bank in Tsinan is the Deutsch-Asiatische Bank, but it is said that it has never made enough profit to pay for the imposing building in which it is housed. On the outbreak of war the manager—a Prussian Officer of the reserve—adopted a policy of "frightfulness" towards his British clients, with the result that the bank lost its business more rapidly than might otherwise have been the case. Its sole resource now is funds of the Salt Gabelle, and the branch is run at a heavy loss. Most of the foreign firms now bank with the Bank of Communications and the Bank of China—both purely Chinese institutions—which seem to answer all requirements. There is no likelihood that any British bank will find it worth while to establish a branch here.

*Imports.*—The principal imports into this district are cigarettes, oil, soap, sewing machines, cotton thread, dyes, piece-goods, matches and medicines. The distribution of cigarettes, oil, soap, sewing machines and medicines is in the hands of, or superintended by, foreigners, with eminently satisfactory results.

*Petroleum companies agencies.*—A German firm was formerly agent for the Standard Oil Company, with the result that the Asiatic Petroleum Company, with their own staff and organisation, succeeded in capturing most of the Shantung market. This agency has now been terminated and the Standard Oil Company with their own staff will compete much more keenly in future.

*Sewing cotton.*—Most of the cotton thread in Shantung comes from Japan, and there is no doubt that the British manufacturer would obtain far better results if he dispensed with German agents and established an organisation of his own.

*Dyes.*—Aniline dyes were imported from Germany but the trade has now completely stopped and there seems some likelihood of a revival of the cultivation of native indigo.

*Medicines.*—Medicines are imported mostly from Japan, and their flaming advertisements are to be seen everywhere. Certain British patent medicines which have their own foreign salesmen also find a ready sale among the Chinese.

*Cigarettes.*—The advent of the Japanese is likely to cause keen competition in the cigarette business, which, however, the British American Tobacco Company are very well equipped to meet.

### Tsingtau

Mr. Vice-Consul Eckford reports as follows:—

*Exports. Straw braid.*—The first six months of the year were disappointing to shippers and manufacturers owing to the fashions in the home markets not favouring Chinese braids, thus causing but a comparatively small demand in this market. About midsummer, however, there were signs of a revival of the China business and a number of forward contracts were made for shipment in the early autumn. Had the war not intervened it is safe to say that the latter end of 1914 would have seen a considerable increase in shipments. As it was, the trade in straw plaits became quite demoralised and all forward contracts were cancelled.

*Groundnuts.*—In the first five months of this year there was the usual volume of business through this port, but exports to Europe were probably less than last year owing to a largely increased domestic demand for the south which kept prices often above European limits.

The new season's (October to May) crop is very inferior, owing principally to damage from heavy floods and partly to the nuts being left too long in the ground in the districts adjacent to the recent military operations. Both quantity and quality have suffered from these causes. The restriction of markets in Europe, the largely increased rates of freight and the inferiority of the crop have all tended to the reduction of exports. The usual moderate demand from America, furthermore, has not been met this season as the superior quality required by that market has not been obtainable. No supplies have come to this port at all, the farmers preferring to send their productions to Shanghai and Tientsin. Also, the native buyers from the south, who usually come to Tsingtau for their supplies, are this season operating in Tsinanfu, Taianfu and Shanghai, taking their purchases by the Tsinpu Railway to the Yangtse for shipment to Hong-Kong and Canton. Owing to the decreased demand and the increased rates of freight the farmers are able to get only very low prices for their output this season.

*Cow-hides.*—The latter half of the 1914 season (January to May, 1914) was not marked by any change. More hides passed through Tsingtau than in any former season. Owing to the siege there was nothing done in 1914 season hides until December, when they reached the highest price ever known in Tsingtau, going up as high as 60 taels. This was entirely owing to Japan having secured a large contract for leather for the Russians. Japanese merchants paid any price the dealer liked to ask, much speculation was done, and many small firms had to close down. Up to the end of the year the quantity of hides arriving here was of necessity small.

## MINING EXPLOSIVES AND THE WAR

The embargoes which have been placed upon the exportation of explosives from the Allied Countries have greatly increased the demand on the United States from foreign countries. Since these embargoes also restrict the exportation of glycerine to the United States, there has been an abnormal increase in the cost of glycerine and the price of explosives has advanced very materially as a result. The immediate result of this state of affairs is that consumers everywhere are paying high prices for explosives. Therefore, the economic necessity of supplanting, wherever possible, explosives which contain very high percentages of nitroglycerin, such as blasting gelatin (which contains from 86% to 92% nitroglycerin), 80%, 70%, 60% and 50% nitroglycerin explosives with those containing say from 35% to 40% nitroglycerin, is becoming apparent to the users in all parts of the world.

In countries other than the United States a great deal more can be done towards making these economic changes than in the United States, because in the latter country consumers have for years been using the 40% grade as a standard for all ordinary work and in the United States it is well recognized that only exceptionally hard rock really requires stronger explosives, and that even for hard rock, 60% can generally be depended upon to do the work. In foreign countries, on the other hand, it has been customary to use the very high grades of explosives above mentioned. This is the result of custom; not of necessity or economy. There is little doubt but that the temporary hardships imposed by the high cost of explosives will result eventually in the adoption of lower grades, and that after the war, when the glycerine prices become normal, these lower grades of explosives will continue to be used and the resulting economy will in a year or two more than offset the temporary higher costs due to the glycerine situation. In other words, increased efficiency and a reduction in mining costs will probably have been brought about very much sooner through force of necessity than could have occurred under normal conditions.

# ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

## RAILWAYS

**300 Cars for Peking Mukden Line.**—The freight traffic of the Peking-Mukden Line has steadily increased, and the demand for rolling has been so great, due largely to the heavy traffic in coal between Tangshan and Tongho, that recommendations have been made for the addition of two hundred 30-ton coal cars, one hundred 30-ton covered-goods cars, and 12 locomotives. The first "all steel" 30-ton cars were used during 1914, and are now the standard of that type of car on this line. The tonnage capacity of freight cars of all classes was 62,554 in June, 1914, as compared with 58,711 in June, 1913; and there was an addition of eight locomotives during the year. The ratio of working expenses to earnings was 36 per cent for the year ended June 30, 1914, as compared with 27 per cent for the previous year; and the earnings for 1913-14 were $400,184 gold less than for 1912-13.

**Taokou-Chinghua Earnings.**—There was an increase of about 12 per cent in the amount of freight carried by the Taokou-Chinghua Line in 1914 over the previous year. The total receipts in 1914 were $247,381 gold, as compared with $228,388 gold for 1913. Coal forms by far the largest part of the freight carried by this road. Other commodities transported are timber, salt, kerosene oil, bamboo, ginger, tobacco, machinery, medicine, and grain.

**Electric Tramway for Harbin.**—It is reported that the directors of the Chinese Eastern Railway have awarded a concession to the Russian firm of Barski & Co., at Harbin, to construct an electric tramway between the Pristan and Old Harbin, via New Harbin, and with a branch line to Fuchiatien, the Chinese city. The total length of the line will be about 7 miles. A local newspaper stated that the construction of the tramway was to begin immediately.

**S. M. Ry. and Russian Coaches.**—With regard to the order for railway carriages by the Russian Government, which has been a subject of communication between Japan and Russia for sometime, the South Manchuria Railway Company has now accepted a contract for the supply of 1,500 carriages. It is proposed to enlarge the Company's factory at Dairen so that it may be enabled to turn out 300 carriages a month. The total cost of the order is estimated at Y.30,000,000. Most of the materials will have to be imported.

**Szepingchieh Line Agreement.**—The loan agreement between the Yokohama Specie Bank and the Chinese Government of $3,400,000, for the construction of the railway between Szepingchieh to Chiengchiatung, the length of which is 52 miles, is said to be based upon the Tientsin-Pukow line agreement according to Peking Press reports. The negotiations for the construction of the five railways in Manchuria and Mongolia, the privileges for which were given to the Japanese some time ago, have been carried on for some time and it is believed that a satisfactory arrangement is being arrived at between the two Governments.

According to Japanese reports, it was understood at the time of signing the Ssupingkai-Chengchiatun Railway agreement that the construction work shall be begun in June and completed in three years. Owing to the lateness of spring in the region along the proposed railway, it is usually well into July before the thawing process is completed. For this reason, the actual commencement of construction work is expected to be somewhat deferred. The process of the work should be rapid as the major portion of the proposed line traverses a level country.

The distance is about 52 miles. This route has been surveyed twice but a construction survey will have to be made taking about a month. The construction expense is expected to be less than Y60,000 per mile, on which basis the total outlay is about Y3,200,000. The heaviest outlay will be for the four bridges. The one over the Liao River will be about 2,000 feet long, and will cost between Y400,000 and Y500,000, which estimates are likely to be exceeded owing to the recent sharp rise in price of iron and steel.

**Taonan-Urga Line.**—The Living Buddha of Outer Mongolia is now a strong advocate for the construction of the long proposed line connecting Taonan in Fengtien and Urga in Outer Mongolia which has been delayed by lack of funds. The Living Buddha has suggested that if the Chinese Government determines to build the line, the Urga Government will be quite willing to supply half of the funds. The total cost of the line is said to have been estimated at $60,000,000.

**Railway Construction in Chekiang.**—The Railway makes but slow progress towards Shaohsing, says a correspondent of the N.-C. Daily News. Only a hundred men are at work on the line between Tsaongo and Shaohsing city and these have been concentrating on a cutting at Bahtayang, a place lying some twelve miles distant from here. No work has been done on the section between Shaohsing and the Chientang river; even the necessary land has not yet been acquired. The local papers reported that the line was going ahead this year with a Chinese engineer over the section Shaohsing—Tsaongo, an English engineer to be over the Shaohsing—Hangchow section. According to reports the city station site has been chosen outside the West Gate despite its inconvenience.

**Shantung Railway.**—In the course of a little over a year since the Shantung Railway passed into Japanese management, the traffic earnings of the Line, if coal freights are considered, have been raised somewhat above the figures under the German regime. For the last twelve months of the German regime the Line is said to have yielded Y13,000 per day, which represents the actual receipts of the Railway at present. There is no denying the increase of both imports and exports in Shantung and the annual receipts of the Railway may be put at about Y3,500,000. If the coal receipts are added, the total will reach about Y5,000,000.

The estimates of the Railway for the next fiscal year, both capital expenditure and working expenses combined, amount to about Y2,600,000, part of which sum will be employed for the improvement of the Line, construction of new locomotives, etc. Furthermore, the operation of Chinlingchen Iron Mine has been decided upon, and for this purpose about Y300,000 is separately asked for. This mine possesses 200,000,000 tons of ore. Working this when domestic demands for iron reach 1,000,000 tons, as against only about 300,000 tons put out, will make a great difference to Japan.

**Chefoo-Weihsien Railway**—The Peking Daily News states that the Government has granted the request submitted by the Chamber of Commerce in Chefoo for the joint construction of the line connecting Chefoo and Weihsien by the Government and merchants. This line will be semi-official in nature, and its estimated cost is $10,000,000. It has been decided that $6,000,000 of the sum will be borne by Chefoo and another $1,000,000 by the six hsiens along the proposed line, $2,000,000 by the province of Shantung, and the remainder will be financed by other provinces and the Central Government.

**Road for Kueichow.**—Kueiyang citizens were much elated over the news that sanction had been given for a provincial loan for Kueichow of $1,000,000 to be used in the construction of a big road for vehicular traffic from Kueiyang by way of Anshunfu to Paichengho, and for clearing the river from that place down through Kuangsi, so that it will be navigable for motor-boats. In the absence of railway communication in Kueichow the plan seems to be an excellent one.

**New Chinese Lines.**—It is reported that the Ministry of Communications has decided to construct several lines of railways during 1916. They will include lines from Kalgan to Shuiyuan 317 li; one from Lanchow in Kansu to Ili and from Sian in Shensi to Lanchow in Kansu, 500 li. With the exception of the line from Lanchow to Ili, these lines have been surveyed.

**Double Track for Japan Line.**—The Imperial Railway Bureau has completed the purchase of land along the railway track between Ofuna and Yokohama for the construction of a double track line. The work has been begun and is expected to be finished by the end of this year. After the completion of the work, the railway service between Tokyo and the naval port will be greatly improved.

**Favor Broad Gauge for Japan.**—The special committee in the Railway Board has completed an investigation into the question of whether on the railways the present narrow gauge shall be continued in use or broad guage tracks shall be adopted. The investigations were started, it is reported, during the presidency of the late Dr. Sengoku, and have just been completed. It is reported that members of the committee have discovered the continuation of the present narrow guage system is not advantageous, and that the other system should be adopted. Since such a change requires a great deal of money, it is a question whether the government will agree to any immediate change.

**P. I. Government to Buy Manila Railroad.**—The negotiations between the Insular Government and the Manila Railroad Company for the purchase of the latter have resulted in the departure of Mr. Fisher Nesmith, the

special representative of the holding interests of the Manila Railroad Company in the United States, for New York with a draft of a proposed agreement between the Government of the Philippine Islands and the road owners, signed by President H. S. Higgins of the Manila Railroad and the Governor-General, for the purchase of the lines by the Philippine Government. The papers carried by Mr. Nesmith are said not to bind either party but it is known that the personal views of the Governor-General on the subject are also the views of Mr. Osmena, Speaker of the Assembly, and of the Board of Public Utilities Commissioners. Although nothing definite has been stated concerning the sum the Government is willing to pay for the road, it has been learned that the price will not be far from 50,000,000 pesos.

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**Australian Tramway.**—The local Council at Footscray (Victoria) is considering the question of a local electric tramway service, covering a distance of about six miles. The name of the consulting engineer may be obtained by United States manufacturers and contractors interested from the Department of Commerce and by British Manufacturers from the Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, London E.C.

There is a difference of opinion whether, if the holding interest in the States agree to sell at the proposed figure, it will be necessary for the Insular Government to secure Legislative ratification or whether it has authority to act independently. It is stated that the administration can purchase the railroad without going to the Legislature as funds are available in the gold standard fund and various sinking funds, which the chief executive is empowered to invest. Therefore he could take up the controlling interest in the railroad stock without going to the people but it is thought that the ratification of the Legislature will be asked.

Certain important matters with regard to existing stock and bond issues of the original and holding companies must be adjusted by the owners to meet the requirements of the Government. Other readjustments are necessary in connexion with the present liability of the Government for the payment of interest on construction bonds. But if the owners are willing to meet the Government requirements in this regard and at the same time to accept the offer tentatively made, there is every indication that the deal will be closed. A definite answer from New York is expected by about the end of February.

## RIVERS AND HARBORS

**West River Conservancy.**—Mr. Tan Hsueh-heng, Director of the River Conservancy Work of Kwangtung, has submitted to the President a new map of the rivers of Kwangtung drawn up by the conservancy engineers. With this map as a basis, he has formed plans for the building of dykes at important places along Peikiang and Sikiang so as to prevent the recurrence of floods such as were experienced in Canton and other cities last summer. The funds for repairing and building the dykes will be contributed by the merchants of Kwangtung but the Conservancy Bureau will send engineers to make detailed plans and superintend the work.

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**Saigon to Improve Harbor.**—Saigon, like other ports of French Indo-China, is nominally under the control of the central Department of Public Works, but by a decree of January 2, 1914, it was granted a certain degree of autonomy and a local administrative council. This Council of Administration, consisting of 12 members and assisted by the chief engineer of the Cochin China division of the Department of Public Works, has a separate budget and votes improvements and money subject to the veto of the governor of Cochin China. This council met for the first time August 7, 1914. The first task of the new council was to consider an extensive system of improvements for the harbor of Saigon, whose facilities are inadequate for the accommodation of its commerce. At a recent meeting the following programme was agreed upon, to be put into operation as soon as possible:

1. The construction, in common with the navy yard, of a drydock 300 meters (984 ft.) long, at a cost of about $1,600,000.

2. The installation of an electric towpath along the Canal of Derivation, from Saigon to Cholon (4 or 5 miles), at a cost of about $200,000.

3. The acquisition of a floating crane, at a cost of about $30,000.

4. The construction of docks for the mooring of small boats, at a cost of about $20,000.

5. The construction of warehouses and an inclosing wall for the customs along the quay of Khan-hoi. The estimated cost of this work is fixed at $30,000.

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**S.M.R. Co. Harbour Works Office.**—Construction of Concrete Blocks. The manufacture of concrete blocks for the construction of the quay wall of the Third Wharf and the Northwest Breakwater will be resumed in April. Last year's output was 1,200,000 cubic feet consisting of about 1750 blocks weighing between 20 and 50 tons each. The monthy average number is 250 and odd.

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**Reconstruction of Singapore's Wharves.**—The contractors, Messrs. Topham, Jones and Railton, Limited, of London, have made satisfactory progress during 1915 with this work notwithstanding some delay, necessitated by the design of the quay wall being altered owing to the nature of the ground and the quality of the material for filling behind it. As 1,900 feet of the main wharf is now out of use, it has been handed over to the contractors. Considerable delay is being incurred in obtaining the steel construction for the godowns to be erected on the reconstructed wharf.

In comparison with the the previous half year, the gross earnings of the wharf department show an increase of $97,258, the net earnings an increase of $45,336, and the tonnage an increase of 103,972 tons. The expenditure on repairs and renewals was $141,497.92, an increase of $60,310.60 on the preceding half year. Of the total interest paid or due to Government, viz., $956,958.73 for the half year under review, $595,679.08 was in respect of interest account, the capital cost of the undertaking, debentures and loans at call, redeemed, the balance of $361,279.65 being in respect of new works; the total of $956,958.73 being an increase of $19,950.66 over that of the previous half-year ($937,003.07).

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**New Pier for Zamboanga.**—Construction work on the new concrete pier at the port of Zamboanga has been begun under the supervision of H. F. Cameron, the department engineer for Mindanao and Sulu. The project involves an expenditure of about P55,000, and will be of great benefit to the commercial development of the southern port.

We have been informed by the District Engineer that the plans for the dock extension are expected to arrive from the bureau of public works by the first mail from Manila, and that work will immediately be resumed and carried forward to completion without delay. The present delapidated and dangerous pier is to be replaced by a concrete structure and carried out to thirty feet of water. The pier head is to be 250 feet long which is ample for all vessels plying in these waters.

## MINING

**Mining Progress in New Guinea.**—Previous to the outbreak of war the mining position in British New Guinea had reached an interesting point, where high values reported as a result of the small amount of lode mining seemed likely to insure its being tested on a scale proportionate to the values and wide occurrence of gold reported. The period antecedent to the war was, however, very unfavourable for raising capital, and since that date interest has turned towards evicting the Germans from the neighbouring half of New Guinea and preparing a hasty rummage of the new territory. Official statistics recently available show that the recorded output for the twelve months to the middle of 1914 declined somewhat, amounting to 14,666 crude ozs., compared with 18,247 crude ozs. in the corresponding earlier twelve months.

The Kulumadau mine continues the only producer of importance, and returned for the year 3,696 crude ozs. from 13,175 tons crushed. The property is described by the Warden of the field as a very valuable one, but needing larger capital than it possesses. The figures for some of the small shows are spectacular, but, of course, the scale of working prevents any certainty as to their real value. The Woodlark King returned just on 1,600 crude ozs. from 372 tons of ore crushed. The Federation mine at Busai showed a value of over £1,100 from a little over 200 tons of ore, and gives promise of being most valuable.

Another property in the same field, the Murua United, has opened up a lode which is said to assay about 6 ozs. to the ton. The efforts of the owners of these and adjoining properties have been mainly directed to seeking capital, and in most cases they are restricted to working with one or two white men and perhaps twenty natives. The bulk of the gold won is still alluvial, and an increasing interest in dredging is to be observed.

On the Yodda a dredging plant has been sent out, but as it has to be transported over 70 miles of track, progress is necessarily slow. Dredging areas are also understood to exist on Mambare, Gira, and Lakekamu rivers. Twenty-one dredging claims have been taken out, and others applied for. Despite the failure of the Great Fitzroy or Mount Morgan to realise their option on the Laloki mine, development has continued, and a considerable amount of "payable ore" has been blocked out—payable, we must presume, under improved conditions of transport, as at present the exports are confined to between 20 and 40 per cent. copper ore, while the average grade of the Laloki has been reported at 3 per cent. All transport at present is by mule or, in the dry seasons, by waggon.

Quite a number of claims have been applied for, the most promising after the Laloki being the Dubuna and Astrolabe. The amount of copper ore shipped last year was 1,150 tons, valued at £19,733. In the Murua field, on Woodlark Island, the presence of copper country over a large area is undoubted; in the event of mines being developed the nearness of deep water would insure cheap working. On the Astrolabe field little can be done without railway construction, but with that a production of 60,000 tons of ore annually is estimated for.

The country, however, is one which cannot possibly develop itself. So far production has been almost entirely alluvial by individual prospectors, and capital on a considerable scale is now required to test the lode formations. The total white population at the end of June last year was only 1,186, of whom 159 were miners, while the natives so employed numbered no more than 1,015.

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**Mining Output of Malaysia.**—The present year, from a Federated Malay States mining standpoint, opened with the price of tin standing at $69.50; there was a

gradual rise, with fluctuations to $86.00 on the [illegible]th of March, during which month the average price was about $81.58; in May it dropped to $79.75; in June it was $81.71; and since then the market has shown a downward tendency. The average price for the whole period was $79.23 per pikul as against $80.86 for the first half of last year. The drop in price as compared with 1913, the last normal year, has been accompanied by an increase in the cost of placing tin on the London market and the working of a few properties has been affected; but the circumstances of the industry as a whole, under war conditions, may be said to be satisfactory.

The output for the first half of the year, reduced to a metallic basis, was 391,738 piculs, being 20,007 piculs less than for the similar term in 1914, but approximately the same as that for the first half of 1912. The decrease in the value of tin exported amounted to $3,278,208.

**Tungsten Exports of Malaysia.**—War requirements have led to an abnormal increase in the demand for tungsten ores for use in the manufacture of high speed steel and various forms of hardened steel, and the price in the United Kingdom has risen to fifty-five shillings per unit of tungstic acid, at which price it is being requisitioned by His Majesty's Government. The export of tungsten to places other than the United Kingdom and the Straits Settlements is prohibited. With a view to encouraging an increase in the Federated Malay States' production, the export duty on wolfram has been temporarily suspended and other attempts are being made to ascertain if other measures can be taken to effect any considerable increase in production.

The railway connection to the Malayan Collieries, Limited, is practically completed, the opening up and equipment of the mine is in an advanced stage, and before the end of the year a steady output of coal may be expected. Further trials of the coal from this Colliery have demonstrated its suitability for a variety of uses, and it is understood that experiments in briquetting are being undertaken.

The Raub Mine continues to be a steady producer of gold, and maintained its normal output.

**Metal Markets of 1915-1916.**—The following annual report on the metal market of the United Kingdom for 1915 and the outlook for 1916 has been furnished by Messrs. William Jacks and Co. of London and Birmingham.

The fluctuations in prices during the past twelve months will in themselves make the year 1915 a memorable one in the Metal Trade. Looking back we can see the effects of the formation of a standing Army of some four million men, a Navy with one million, and the remaining available labour of the country mainly engaged in producing Munitions of War, combined with the great and growing scarcity of shipping, brought about by the duplicating at various points on the map of our initial Expeditionary Force, and the consequent enormous rise in freights. In ordinary times trade demands contract as prices rise, and practically vanish as the advance is carried beyond a certain level, but all past experience counts for nothing under present conditions. The War profits which have accrued to our American friends have led to a sharp revival in the Home demand there which has gone far to accelerate the upward tendency that has prevailed throughout the entire year.

*Iron.*—Cleveland prices sagged early in the year on the general slackness prevailing in the Foundry Trade and stocks increased, but the rising freights made importations of American iron impossible, and with the rise of 50s. per ton in Hematite and similar advances in Coal and Coke it was impossible for Cleveland Iron not to follow.

*Copper* has had wide fluctuations, due no doubt partly to American manipulation of the Warrant market, to assist them in marketing their increasing output of Electrolytic at two to three times its cost of production. With the Russian demand absorbing the bulk of the Japanese output as well as a considerable portion of the Australian output, their task has been an easy and profitable one.

*Tin* has only been affected indirectly by the War, and the fluctuations have been chiefly caused by the giving and withholding of Export Licenses by the Government. The fact that no Homeward Bound Tin has been sent to the bottom during the year must be a source of great satisfaction to Consumers and Underwriters—if not to Speculators.

*Lead* has moved both ways like Copper, depending largely upon the Russian demand earlier in the year, and later on the rapid rise in Atlantic freights, which, of course, is reflected in Lead to a much greater degree than in Copper or Spelter.

*Spelter* rose £87 in the first six months of the year, principally on the fact that all Sheets used in the Camps throughout the country were supplied galvanised. By the time a suitable substitute for Spelter was discovered by the Government in Bituminous Paint the price of Spelter fell £60, but later on firmed again on the increasing demand for Munitions.

1916. For the New Year it is impossible to predict, as everything depends upon the duration of the War. As we write, freights have advanced further, and as the new recruits are called up costs of all raw material produced in this country are bound to increase.

*Iron* is more affected than other Metals by this question of labour, but with a falling off in general demand and increasing difficulties in the way of rail and shipping facilities, consumption seems to us to have reached its maximum.

*Copper.*—The Transatlantic freight contracts at 17s. 6d. per ton are a thing of the past, and freights are now three to four times that figure. The block at New York and the scarcity of shipping facilities are likely to prevent any serious set-back in prices of Electrolytic Copper, and stocks of Standard Copper are small and easily manipulated.

*Tin.*—There seems no reason to look for important fluctuations in this metal, as supply and demand seem evenly balanced, and the Government have taken steps to insist that stocks in this country are kept at a reasonable level. This metal is also less affected by Peace prospects than any of the others.

*Lead.*—It seems to be doubtful whether the position in Mexico has really improved or not, but any prospect of more settled conditions there would appear to us to make Lead at £30 seem on a high basis.

*Spelter.*—It is to be hoped that producers in this country will be able gradually to increase their production in conjunction with our Australian friends and so make us independent of outside supplies, but this will take time, and under present conditions it does not seem probable that America will allow the position to ease.

**Government to Supervise Mining.**—Hitherto the antimony mines of Kuangsi have operated by private individuals under special permission of the Government. It is now decided, says the "Peking Gazette," that the mines are to be operated under the supervision of the Government and a sum of $200,000 has been set aside in connexion with this purpose.

**New Coal Fields in Manchuria.**—New coal fields are reported to have been discovered near Station Manchuli by the local chief of police. The fields are located about 5 miles from the Station Manchuli and 2 miles from the railway line. The discoverer has offered to sell his right in the deposits to the Chinese Eastern Railway which is investigating the amount and quality of the coal.

**Japan's Lead Imports.**—The demand for lead in Japan is about 20,000 tons a year, and the supply from home mines is only about 3,000 tons, or 15 per cent. of the amount demanded. Since the outbreak of war, the only source from which Japan has been able to obtain a supply was Australia, but it is reported that a strike in the mines there is expected to curtail the output by half. The demand for lead this year is greater because of the manufacturing of munitions of war for Russia. The supply of ores contracted for or in the course of arrangement for the year are as follows:

| | tons | from |
|---|---|---|
| For Kamioka mine ...... | 5,000 | Australia |
| ,, ........ | 1,500 | China |
| ,, ........ | 3,000 | Asiatic Russia |
| For Osaka Zinc Refinery | 7,000 | Australia |
| Refinery in negotiation.. | 10,000 | ,, |
| Available for other refineries .................... | 5,000 | ,, |
| Total.................... | 29,500 | |

The ore when refined, is reduced by about half and the above ores will produce nearly 15,000 tons of lead. The home output of 3,000 tons, added to this, would make 18,000 tons in all, available for consumption for the present year. The average demand being 20,000 tons a year, and 4,000 tons being in demand for munition manufacturing, the total demand this year will amount to 24,000 tons. Supposing it is possible to curtail the consumption for regular purposes still there will be a shortage of supply of lead of about 5,000 or 6,000 tons. This has caused the market to harden, the present quotation being 25 yen for immediate delivery, and 23 yen for time bargains.

**Japanese Steel Works to Expand.**—At a recent general meeting of the shareholders of the Sumitomo Steel Works of Osaka it was unanimously decided to change the company into a joint stock company, with capital of 6,000,000 yen. The Sumitomo Steel works now has representatives traveling in the United States and England to buy up-to-date machinery to be installed in its works. As soon as the new equipment is installed, production on a larger scale will be started and an additional increase of capital, which the company proposes to open to the general public, will be announced. Baron Sumitomo is president of the company.

**Chinese Work Russian Mines.**—In view of the special conditions created by the war, the Goldmining Committee of the Ministry of Trade and Industry has declared in favour of provisionally suspending the regulation forbidding the employment of Chinese labour in the mines of East Siberia and the adoption of measures to facilitate the transport of Chinese workmen to the gold diggings.

**S. M. Ry. Plans Steel Works.**—It is again reported that the South Manchuria Railway Company plans to start a steel plant, using material from the mines along the zone of the railway. Mr. Kabayama, a director of the company, who is coming to Tokyo from Dairen is reported to be commissioned to get consent of the authorities there.

**Indian Output of Coal.**—India is now producing more coal than all British Dependencies, but Japan has got well ahead of her with an output of 21 million tons and is actively competing in the markets of Ceylon, the Straits Settlements, Sumatra and Java. India must naturally remain a practically non exporting country until the countries around become better developed industrially; under present conditions she consumes within her own borders 93.9 per cent of her production.

The railways of the country alone took about $4\frac{3}{4}$ million tons of Indian coal, supplemented by nearly 300,000 tons of foreign coal; and their total consumption at the beginning of the quinquennium was only $3\frac{3}{4}$ million tons, we have here an index of expansion in railway traffic in this short period. In 1913, the total quantity of foreign coal received in India amounted to 645,000 tons, the sources of supply being, in order of volume, the United Kingdom, Natal, Japan, Australia; some other countries also contributed to a total extent of 175,000 tons. Total exports for 1913 amounted to about 760,000 tons, out of which 426,000 tons went to Ceylon and 108,000 tons to the Straits Settlements.

**Market for Graphite.**—In view of recent discoveries of graphite in China, the following from India may prove of interest. Before the war a large quantity of the plumbago exported went to the continental ports, Germany being the biggest buyer. With the outbreak, the trade was more or less at a standstill as the export of the article was prohibited except to England and the allied countries; but England not being a large buyer, the prices fetched were very low. Later the Government sanctioned the export of the article to America and prices improved a great deal. Since of late not America only has been a big buyer, but also England and Russia, the latter country up to October 31 having taking 39,961 cwt. against 79 cwt. in 1914. The greater demand is from the American market which has imported up to that date 186,509 cwt. against 136,562 last year, while the United Kingdom has imported 86,952 cwt. against 84,000 in 1914. The price fetched is about R1,000 per ton and denotes a much sounder state of affairs than even during the extraordinary boom in 1800 when the price went up to R1,100 per ton. There is an excellent demand for all grades and both the large and small producers are being benefited. Most of the small pits that had been closed have been reopened and certain restrictions that were imposed by government in consequence of the recent riots are being relaxed. All the plumbago to Russia goes via Vladivostock.

## SHIPPING

**New Line for Manila Run**—According to reports from Manila, the Philippines and San Francisco are to be brought within twenty-two days of each other by a line of direct freight and passenger vessels. This is the outgrowth of the purchase of the remaining seven steamers of the Pacific Mail Company by the American International Corporation of New York. The new line will start with five steamers, leaving San Francisco every three weeks and making the trip to Manila in twenty-two days.

**New Nippon Yusen Kaisha Steamer.**—The N.Y.K. S.S. Tokiwa Maru, which was successfully launched on the 9th instant at the Mitsubishi Shipbuilding Yard, Nagasaki, where she had been built, is intended for a cargo-boat for the Company's European service. Her keel was laid on May 5, 1915, and she is expected to be completely equipped about the middle of next May. Her general descriptions follow: Length (over all) 445 feet: Breadth (moulded) 58 feet: Depth 34 feet: Gross tonnage 7,252; Speed 14 knots: I. H. P. 5,800: Carrying capacity 12,000. She has four cylindrical single-ended boilers, a through double bottom, seven watertight bulkheads, two through decks, five holds, and fourteen winches and derricks, and is 100 A.1, as required by Lloyds. A unique feature of her engine is her Parson Turbine of the Impulse Reaction System.

**Japan Building Submarines.**—According to Japanese press report the Kawasaki Dockyards have obtained all the rights and privileges to build all future engines and machinery for torpedo boats and submarines of the F. I. A. T. type, if they so desire in Japan. All the plans and details are to be furnished them.

A further contract has been signed which gives the Company the exclusive rights to manufacture in Japan the Fiat type of Diesel oil engines. These engines are applicable not only to submarines, but are now proving successful and economical factors as marine engines even in larger vessels. For the construction of the hull of the first submarine and for instructions as to operating, several Italian engineers will go to Japan. The Kawasaki Dockyards Company will send a number of technical experts to study in the Fiat works in Turin and in Spezia. The Dockyards has entered into a contract with the Fiat San Giorgio Company of Turin for the construction of one latest model submarine of the Laurente type. This boat displaces 700 tons when on the surface and 1,070 tons when submerged. In speed it is as fast as any modern battleship and can travel over 6,000 miles without replenishing its supply of oil. The length is 75 metres. It carries five torpedo tubes, three in the bow and two in the stern, besides anti-aircraft submersible guns and other up-to-date appliances. The hull of this submarine will be built in Japan. The machinery and engines, &c. are to be built and sent from Italy. The vessel will be completed within 24 months.

**New Japanese Dockyard.**—Plans are being made to establish a dockyard off Tsurumi, Tachibana-gun, Kanagawa prefecture, by Mr. Asano, president of the Toyo Kisen Kaisha, Mr. Yasuda, president of the Yasuda Bank, and a number of other business men of Tokio, with a capital of 5,000,000 yen. Mr. Asano and others obtained permission from the Government to reclaim ground for the purpose some time ago. When the dockyard is ready Mr. Asano expects to build five passenger liners, each similar to the liner Hongkong Maru which the Toyo Kisen Kaisha sold to the Osaka Shosen Kaisha some time ago. After the completion of these steamers another passenger boat with a displacement of 25,000 tons will be constructed. All these steamers will be placed on the Toyo Kisen Kaisha San Francisco-Hongkong Line. All materials, which are to be used in the new dockyard for the construction of these steamers, will be procured in Japan as far as possible.

**China Mail Names Agents.**—Mr. G. J. Petrocelli has been appointed agent in Shanghai of the newly formed China Mail S.S. Co. and assumed his new duties on January 1. He has no advices as yet as to the company's plans except that it will make Shanghai a regular port of call.

**P. I. Cable Ship Sold.**—Application has been made by the Tabacalera Steamship company to the public utilities commission for authority to issue capital stock of a par value of P375,000 to the Compania General de Tabacos de Filipinas in part payment for the cableship Rizal. The consideration for the transfer by the government to this corporation of the Rizal, consisting of the sum of P210,000 in cash and the transfer of the steamer Bustamante, has been paid by the Compania General de Tabacos de Filipinas.

**Dollar Buys New Steamer.**—Robert Dollar, head of the Dollar Steamship Co., has announced that his company has purchased the British steamer *Strathardle* from Burrell and Sons, Glasgow, and will bring the vessel out here to operate between Vancouver and the Orient. The *Strathardle* is of 2,829 tons net, built at Dumbarton in 1910.

**C. P. R. Resumes Steamer Service.**—The Canadian Pacific Steamship line has announced that the Empress of Russia would leave Hongkong for Vancouver, via Japan ports, on February 24, followed by the Empress of Asia on March 23, and that a steamer of the company would leave Hongkong every four weeks thereafter. This puts the complete oriental service of the company back in operation. The matter of calling at Manila has not yet been definitely settled.

## TRAMWAYS

The Japanese tramways date back from 1880, when in February an application was tendered for the construction of the Tokyo Horse Tram Co.'s line. The application was sanctioned, and the line was completed and opened for traffic in June, 1883. This was soon followed by others in rapid succession, and especially since 1888 every year witnessed application for four or five horse tramway undertakings. The result was the promulgation of the Tramway Regulations by Law No. 71 on August 23rd, 1891, by virtue of which horse tramways and similar means of transportation to be lain on public roads for general traffic came to be authorized subject to the special sanction of the Minister of Home Affairs. On October 22, 1908, it was further provided by Imperial Ordinance No. 206 that applicants for the construction of tramways on the Tramway Orders should also obtain the sanction of the Minister of Communications, whereupon the control of the tramways as to their construction and working came under the charge of the Imperial Government Railways. The following are the results of working during the year:—

| Item | | Electric tramways | Steam engine tramways | Petroleum motor tramway | Horse tramways | *Kikisha* tramways | Total |
|---|---|---|---|---|---|---|---|
| No. of tramways ... ... ... | | 55 | 23 | 1 | 35 | 12 | 126 |
| Mileage... | Open | 565.28 | 203.34 | 29.51 | 260.72 | 70.64 | 1,138.49 |
| | Under construction | 262.11 | 66.05 | 9.84 | 19.46 | 1.41 | 359.77 |
| Capital (*yen*) ... ... ... ... | | 249,207,380 | 5,170,000 | 1,000,000 | 2,163,060 | 601,500 | 258,231,040 |
| Cost of Construction (*yen*) ... | | 242,007,716 | 5,042,808 | 1,121,536 | 2,288,212 | 650,522 | 251,110,794 |
| Rolling Stock ... | Locomotives | 3 | 116 | 55 | 1 | — | 175 |
| | Carriages ... | 3,506 | 196 | 30 | 535 | 96 | 4,363 |
| | Wagons ... | 184 | 251 | 105 | 587 | 430 | 1,557 |
| Staff ... ... ... ... ... ... | | 20,610 | 1,003 | 247 | 1,374 | 625 | 23,859 |
| Passengers carried | No. ... ... ... | 558,431,706 | 6,384,694 | 1,907,730 | 9,212,380 | 293,174 | 576,229,774 |
| | Earnings (*yen*) ... | 22,454,673 | 698,820 | 142,707 | 631,844 | 29,080 | 23,957,214 |
| Goods hauled | Tonnage ... ... | 420,017 | 205,694 | 47,269 | 229,829 | 285,460 | 1,188,269 |
| | Earnings (*yen*) | 239,759 | 119,617 | 37,996 | 190,885 | 157,144 | 745,401 |
| Revenue (*yen*) ... ... ... ... | | 31,061,076 | 1,085,414 | 105,107 | 887,340 | 350,511 | 33,580,438 |
| Expenses (*yen*) ... ... ... ... | | 21,635,020 | 808,684 | 127,029 | 788,608 | 298,604 | 23,657,945 |
| Profit (*yen*) ... ... ... ... | | 9,426,956 | 276,730 | 68,168 | 98,732 | 51,907 | 9,922,493 |

### TRAMWAYS NOT YET OPENED FOR BUSINESS

| | Electric tramways | Steam engine tramways | Petroleum motor tramway | Horse tramways | *Kikisha* tramways | Total |
|---|---|---|---|---|---|---|
| No. of tramways... ... ... ... | 26 | 9 | — | 16 | 8 | 59 |
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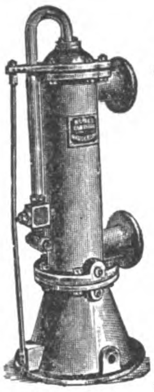

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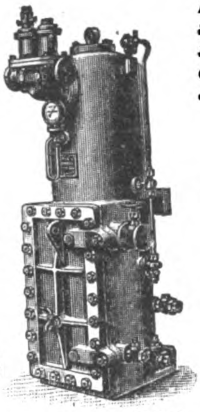
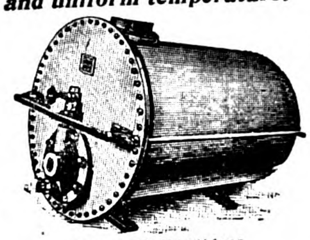
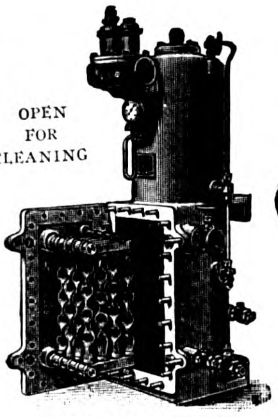


EVAPORATOR for FEED MAKE UP

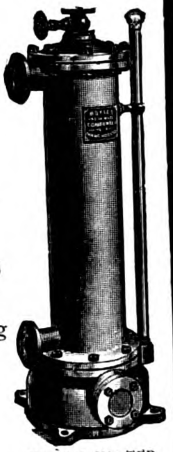


STORAGE PATTERN. CALORIFIER for BATH WATER SUPPLY

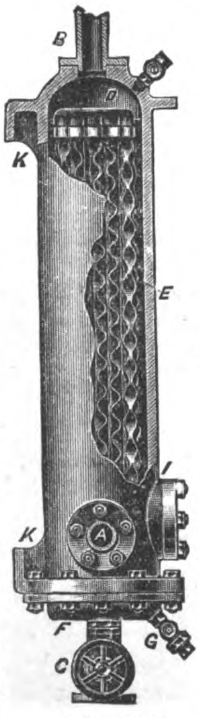
OPEN FOR CLEANING



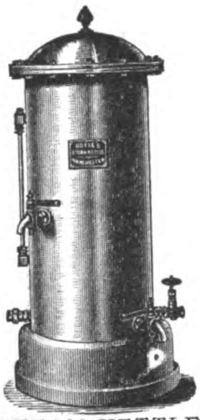
EVAPORATOR. Can be opened for Cleaning without breaking any pipe joints.



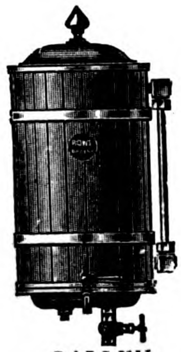
FRESH WATER CONDENSER. Made to BOARD OF TRADE REQUIREMENTS.



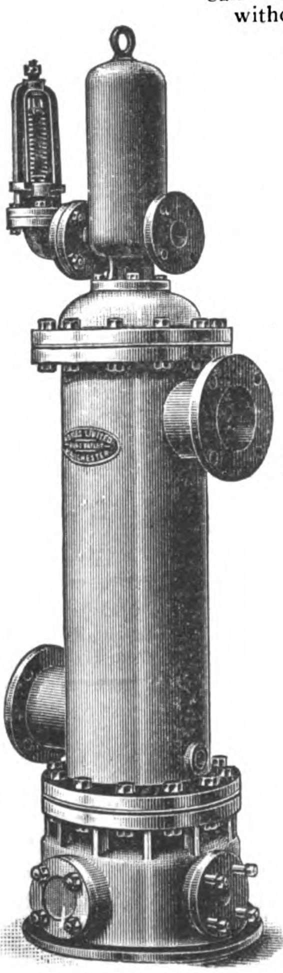
LIVE STEAM FEED WATER HEATER.



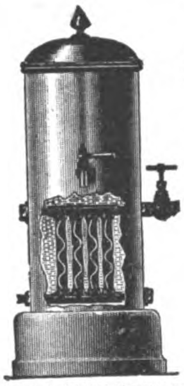
STEAM KETTLE. CLOSED PATTERN



GALLEY KETTLE



EXHAUST STEAM FEEDWATER HEATER.



STEAM KETTLE

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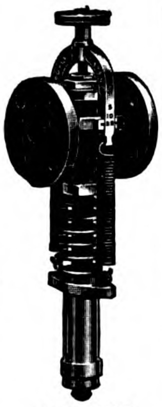

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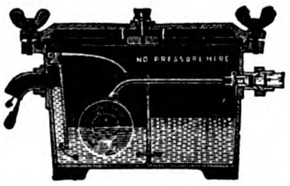

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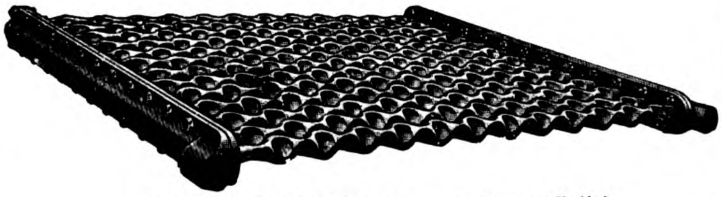

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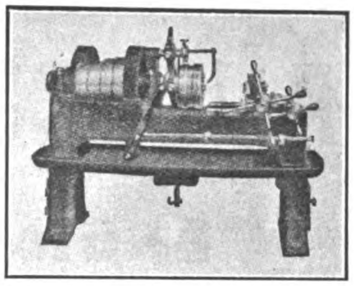
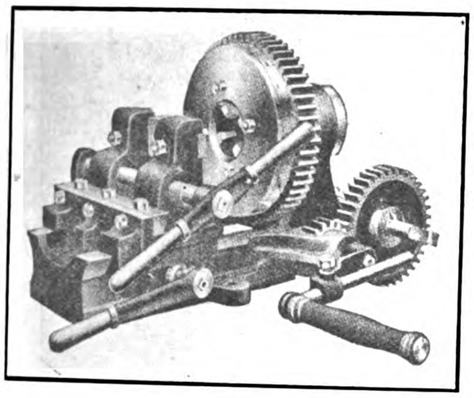


The illustration opposite shows our 2 in. size Single Head Patent Automatic Screwing Machine, which is one of a complete line of Single and Multiple Head Bolt Screwing Machines embodying the very latest labour-saving features and devices. It has Hand and Automatic Releasing Motion to the Die Head, Automatic Closing Device, Die Adjustment whilst in motion, etc. We claim that the Patent Steel Die Head these machines are fitted with is the most solid, simplest and best Releasing Die Head on the market. The Dies are operated mechanically. Springs with their attendant troubles, or other delicate mechanisms, do not enter into the construction in any way.



The illustration below shows our improved Universal Screwing Machine, which will screw Pipes, Bends and Short pieces up to 2 in. diameter, and Bolts when required up to $1\frac{1}{2}$ in. diameter. This type of machine is also made for working by Power as well as by Hand, and in several larger sizes for dealing with Pipes up to 8 in. diameter. Of the 2 in. size illustrated we have during the last few years supplied over 2,500 machines, amongst which are many repeat orders.

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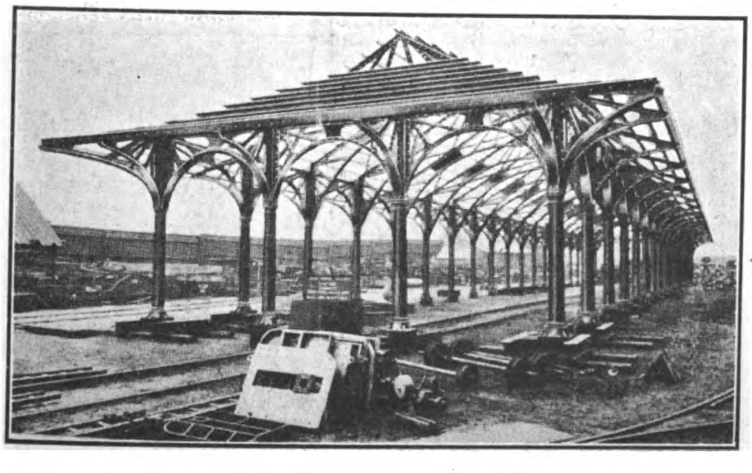

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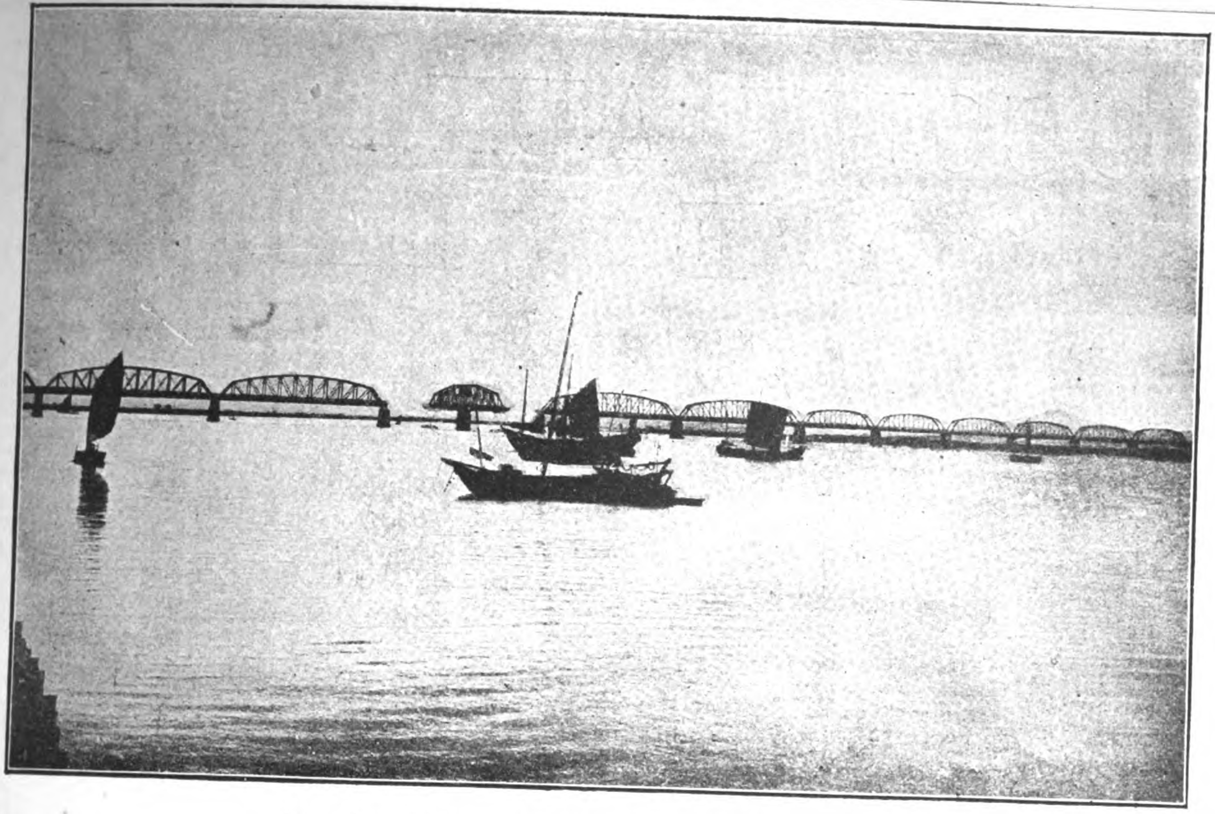

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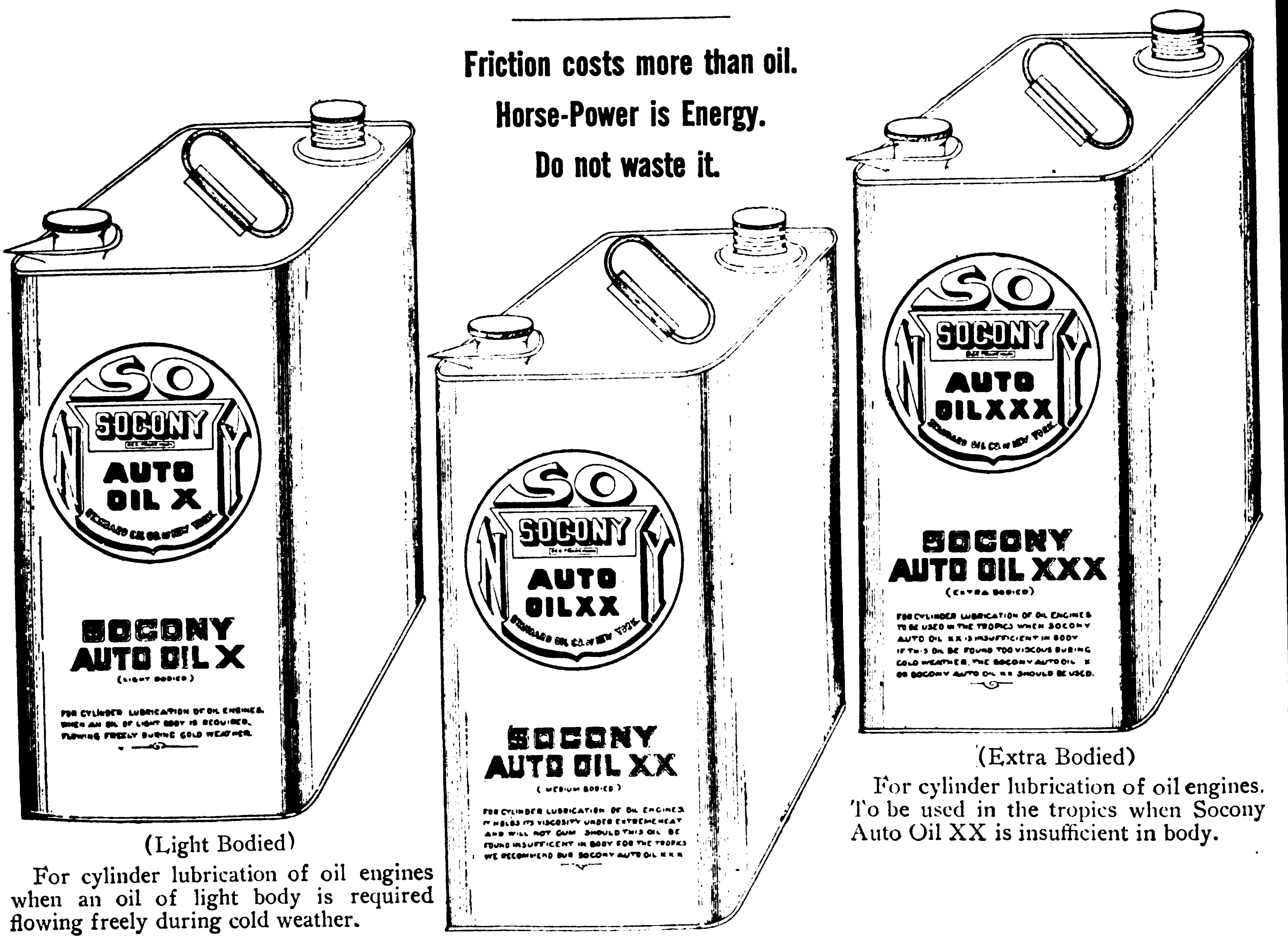


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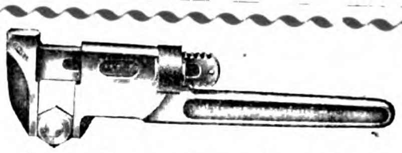

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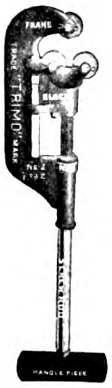

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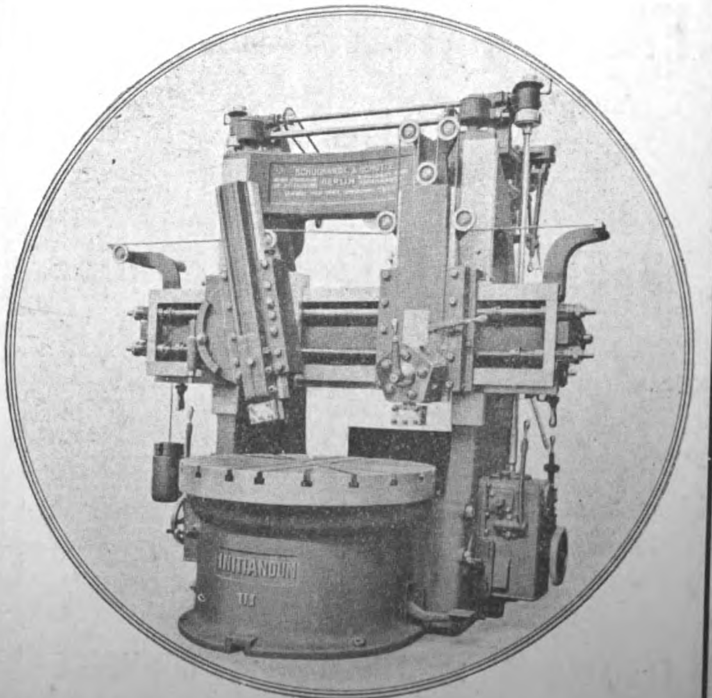

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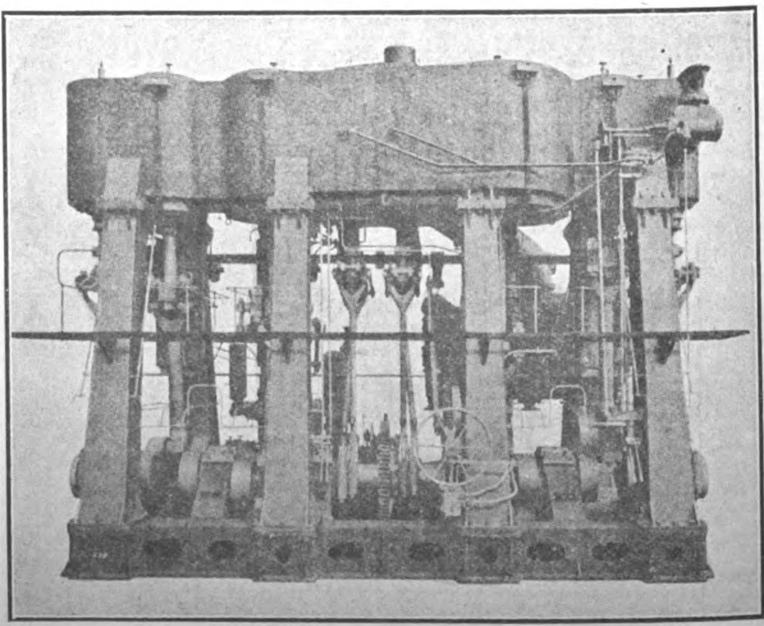

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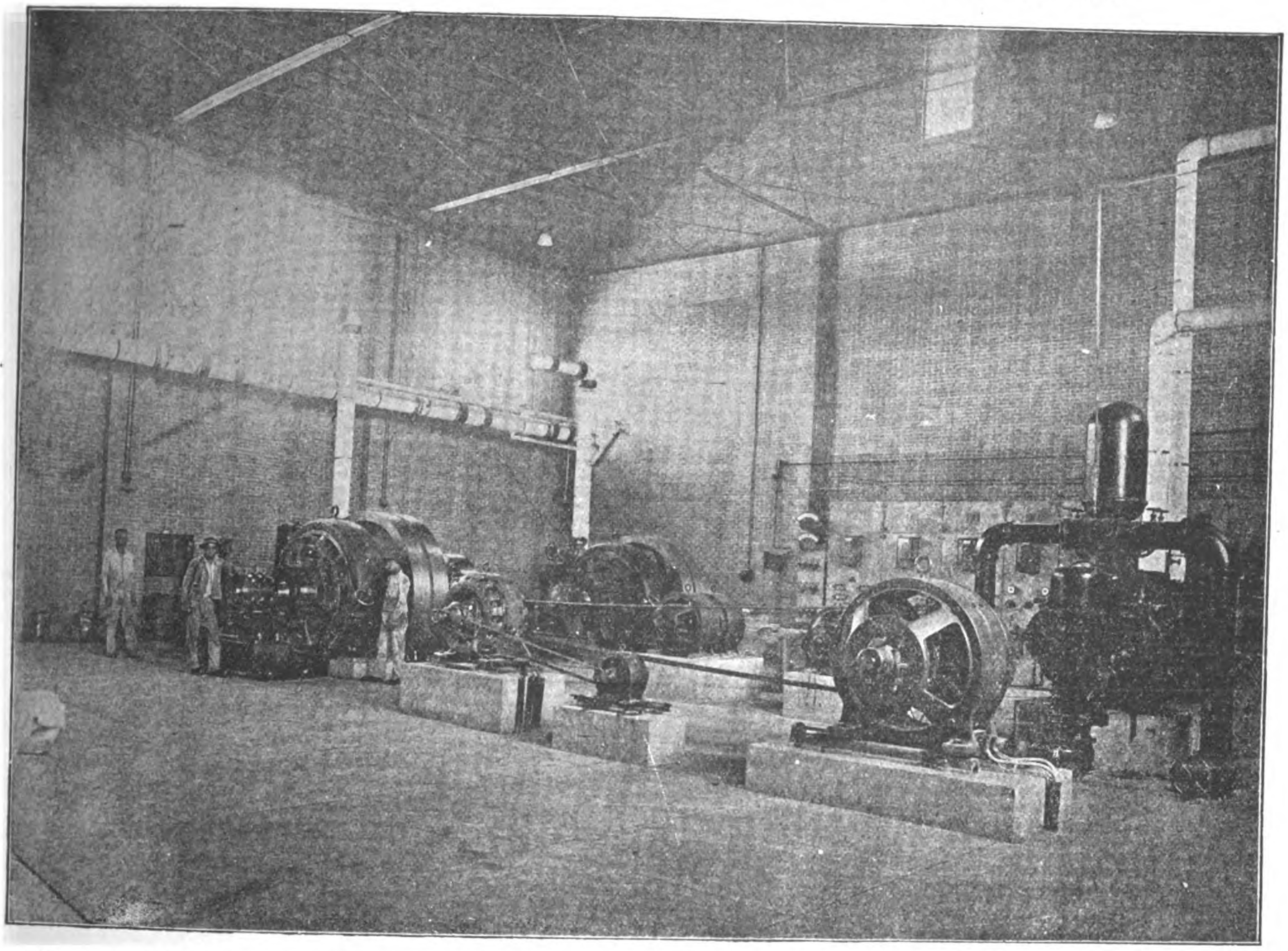

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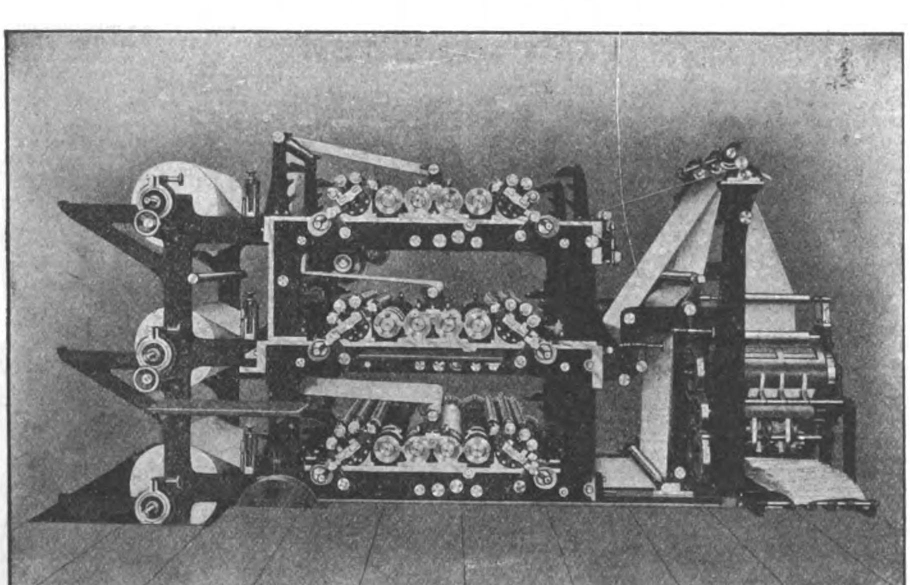

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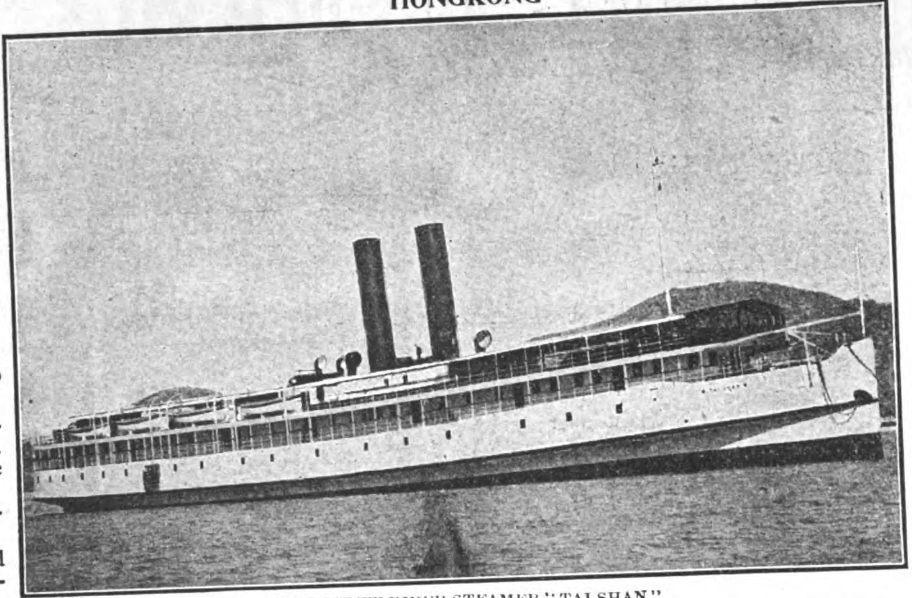

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| **KOWLOON** | *Feet* | *Feet* | *Feet* | *Feet* | *Feet* |
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| No. 2 Dock, Kowloon | 371 | 74′ | 18′ 6″ | 7′ 6″ | —— |
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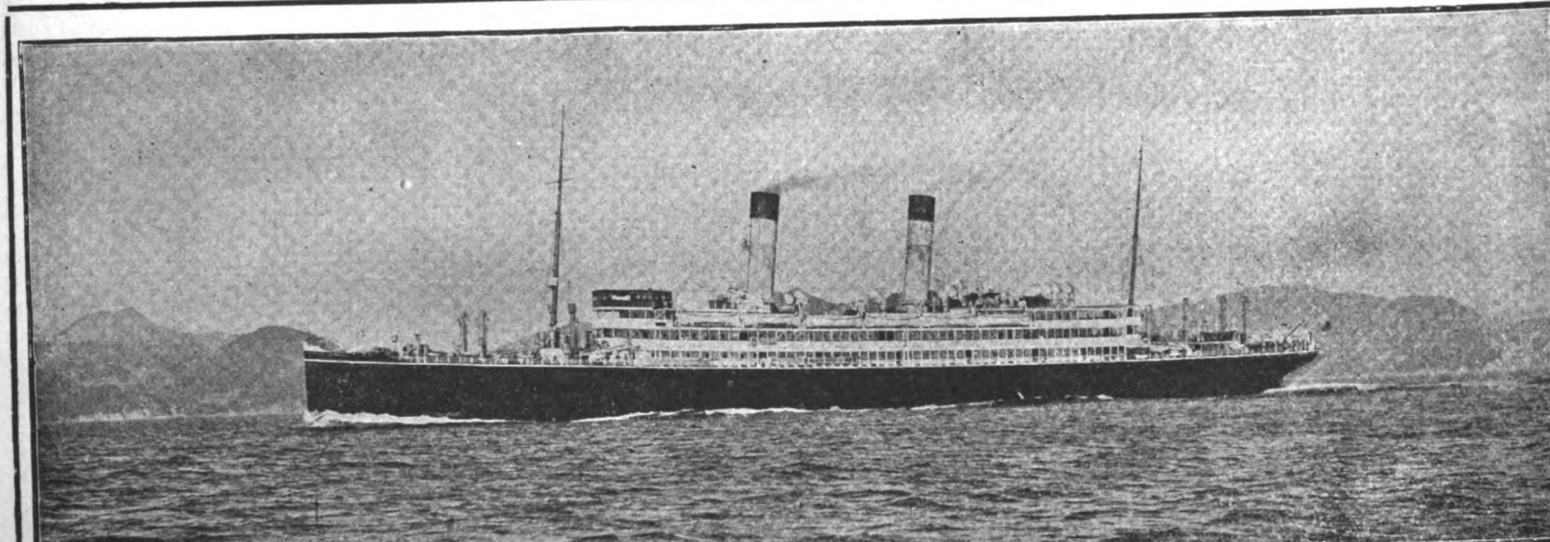

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|---|---|---|
| Extreme Length | 523 | Ft. |
| Length on Blocks | 513 | „ |
| Width of Entrance on top | 88 | „ |
| „ „ „ Bottom | 77 | „ |
| Water on Blocks at Spring Tide | 26½ | „ |

**DOCK No. 2.**

| | | |
|---|---|---|
| Extreme Length | 371 | Ft. |
| Length on Blocks | 360 | „ |
| Width of Entrance on top | 66 | „ |
| „ „ „ Bottom | 53 | „ |
| Water on Blocks at Spring Tide | 22 | „ |

**DOCK No. 3.**

| | | |
|---|---|---|
| Extreme Length | 722 | Ft. |
| Length on Blocks | 714 | „ |
| Width of Entrance, top | 99½ | „ |
| „ „ „ Bottom | 88½ | „ |
| Water on Blocks at Spring Tide | 34½ | „ |

**THE BEST EQUIPPED SHIPBUILDING PLANT IN THE FAR EAST,**

**With Special Facilities for Handling the Heaviest Castings and the Repairing or Building of Ships, Engines and Boilers Also Electrical Work.**

**LARGE STOCK OF MATERIAL, AND FITTINGS ALWAYS ON HAND**

**The Powerful Salvage Steamer "Oura-Maru" (712 Tons, 700 I. H. P.) Equipped With Necessary Pumps And Gear, is Always Ready at Short Notice.**

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Head Office:

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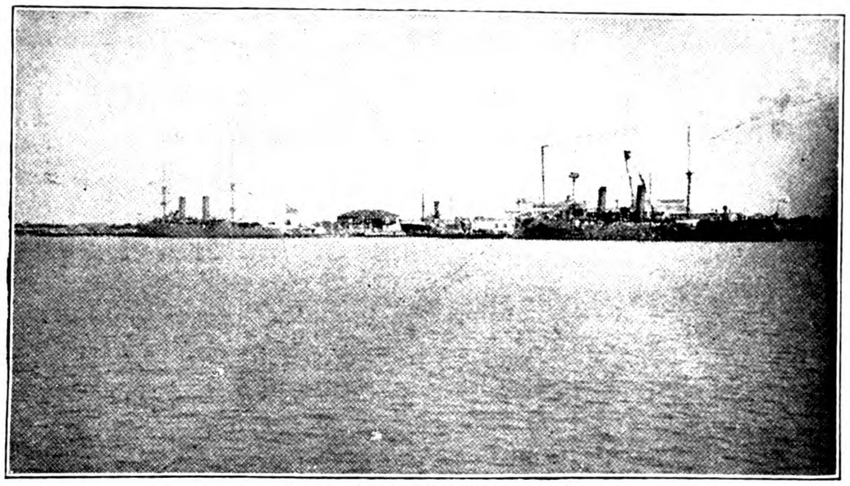

VIEW OF INTERNATIONAL DOCK
showing "M. S. Dollar" in Dock and the Chinese Cruisers "Hai Chi" and "Hai Yung" alongside Dock Co's. Wharf.

## Boilermakers, Dock Proprietors, Shipbuilders, Engineers and Electricians

**FIFTEEN REVENUE CRUISERS BUILT FOR THE QUARTERMASTER'S DEPARTMENT U. S. ARMY—MANILA, P. I.**

**The Model was exhibited at St. Louis Exposition and awarded the Gold Medal in 1904**

**The Sea-going Salvage-vessel "General Weeks" 148 feet long Built for the same Department, in 1910**

**Low Pressure Hot Water and Steam Heating Installations**

The Docks are five in number, ranging in length from 355 feet to 532 feet on the Blocks, and breadth of entrance from 53 feet to 77 feet, with a depth of water on the sill of from 16 feet to 24 feet.

The Dock charges are the most moderate in the Far East

The Company's Yards and Docks cover 96 acres. The Water Frontage is about 1⅛ miles in length. Wharves and Pontoons are arranged where steamers can moor during repairs; and slips for hauling up small vessels are provided. Sheer legs capable of lifting 65 tons are placed at the various Docks.

The extensive Shipbuilding yards and workshops, lit by Electric Light, are provided with the latest improvements, such as traveling cranes of 60 tons' capacity, hydraulic and pneumatic machinery and tools.

Light railway lines are laid throughout workshops and yards.

A Staff of Divers, and powerful salvage appliances, and Floating Cranes ready for any emergency at short notice. Enquiries immediately attended to.

Estimates given for all classes of work; Coast Steamers, Side and Stern-Wheelers, Tugboats, Launches, Steam Barges, Dredgers, Floating Cranes, and Lighters a speciality.

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Motor, Land and Marine Engines and Boilers, Centrifugal, Mining, and other pumping machinery always in stock or in progress, also power driven Machine Tools. Engineer's Hand Tools, Steam, Gas, Oil, and Electric machinery and Engineering accessories generally.

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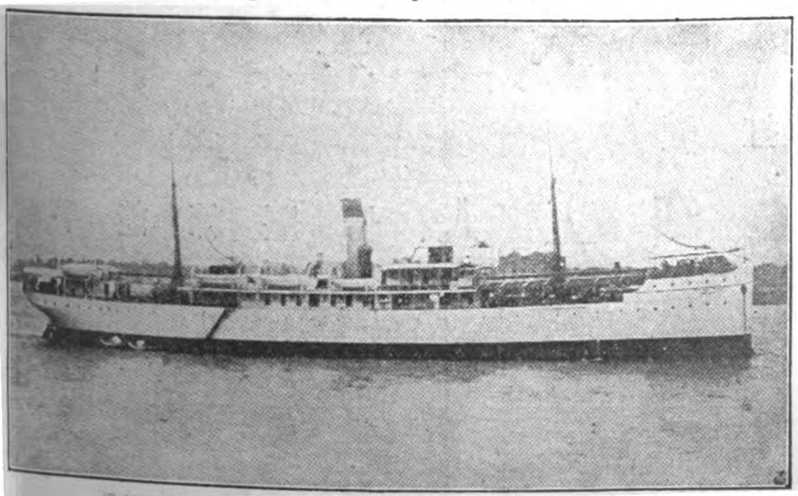

U. S. ARMY TRANSPORT "MERRITT" 300' 0" × 45' 0" × 28' 3"
Built for United States Government in 1912.

PARTICULARS OF DOCKS

Able to accommodate any vessel that can reach Shanghai

| Names | Length on Blocks | High Water | |
|---|---|---|---|
| | | Breadth of Entrance | Depth of water on Sill |
| Cosmopolitan Dock | 532 feet | 77 feet | 24 feet |
| International Dock | 528 „ | 77 „ | 23 „ |
| New Dock . . . | 450 „ | 74 „ | 21 „ |
| Old Dock . . . | 399 „ | 53 „ | 16 „ |
| Tunkadoo Dock . | 350 „ | 67 „ | 16 „ |

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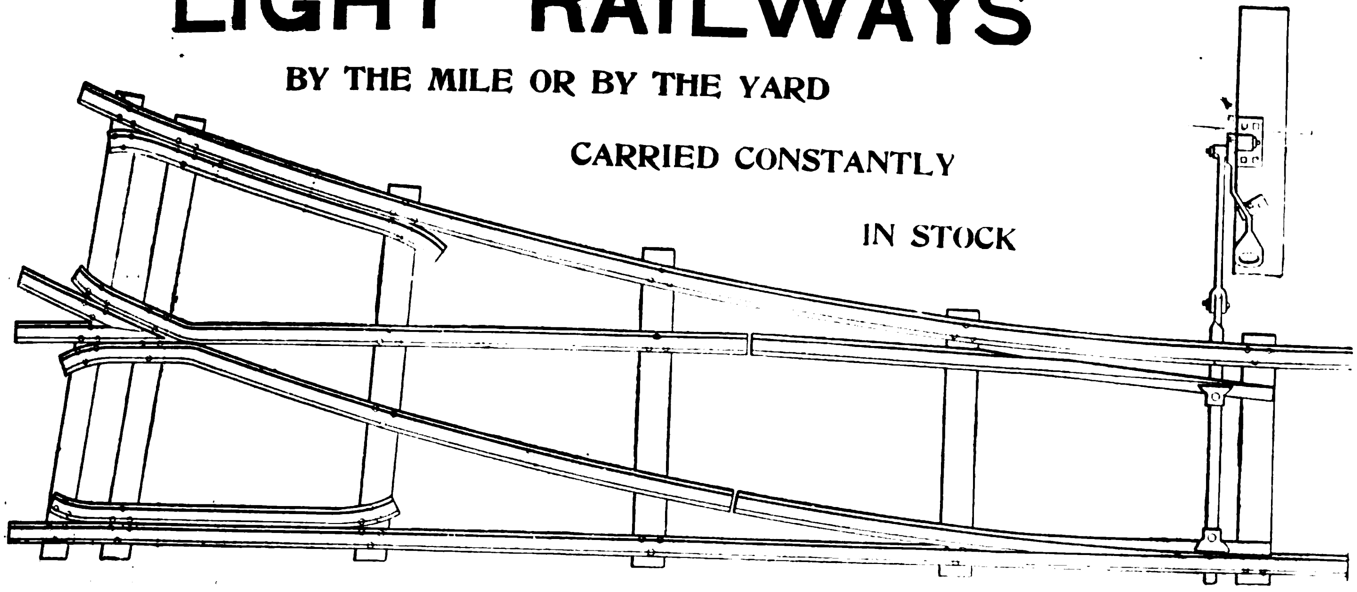

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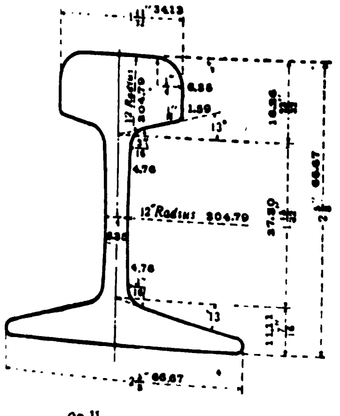

20 lbs. per yard.
9.92 kg. per meter.
31.43 gross tons per mile of single track.
19.84 tonnes per kilometer of single track.
168 ft. of single track per gross ton.
50.4 meters of single track per tonne.

Our Exhibit in the Palace of Manufactures at The Panama Pacific Exposition shows the manufacture of this material from the Ore to the Finished Product.

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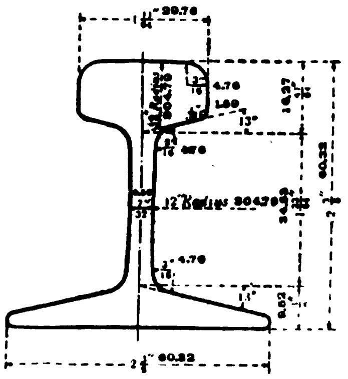
**RAIL SECTION 1640**



16 lbs. per yard.
7.94 kg. per meter.
25.14 gross tons of single track per mile.
15.88 tonnes per kilometer of single track.
210 ft. of single track per gross ton.
62.97 meters of single track par tonne.

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SUITABLE FOR ALL INDUSTRIES, AND FOR BURNING ANY KIND OF FUEL

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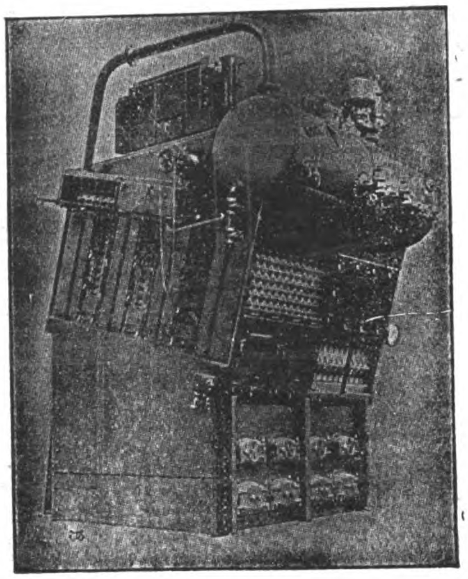

Babcock & Wilcox Marine Boiler

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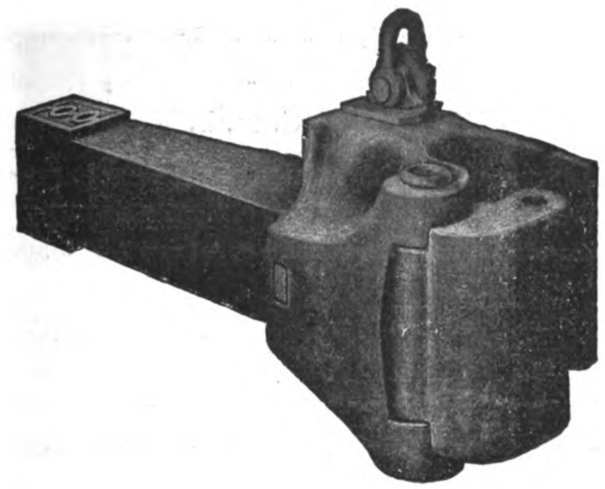
The

# JANNEY-PENN Coupler



THE latest development of the Janney type of M. C. B. Coupling originally introduced and promoted by this company. This coupler has all the simplicity of the early type of the Janney coupler, and also has the up-to-date features of a "Lock-to-the-Lock," "Lock-Set," and a "Knuckle-Opener," and complies fully with all the requirements and recommendations of the M.C.B. Association of the U.S.A.

***Lock-To-The-Lock***—The locking pin cannot climb, being held in the locked position by a trigger the lower end of which projects into a recess in the coupler head, thus preventing accidental uncoupling.

***Lock-Set***—Lock setting is accomplished by the locking block resting on a seat on the inside wall of the coupler head when raised to the uncoupling position, from which seat it is dislodged on the closing movement of the knuckle in the act of coupling.

***Knuckle-Opener***—The knuckle-opener pushes the knuckle open to the fullest range of movement from a fully closed position, or from any partially open position, and its path of movement is such as to insure easy and complete opening of the knuckle.

The lock has an extra large bearing surface in contact with the knuckle in the coupler, being approximately five square inches. No portion of the locking block extends beyond the bottom wall of the coupler.

This coupler has the desirable feature of easy accessibility of parts, thus facilitating the making of repairs.

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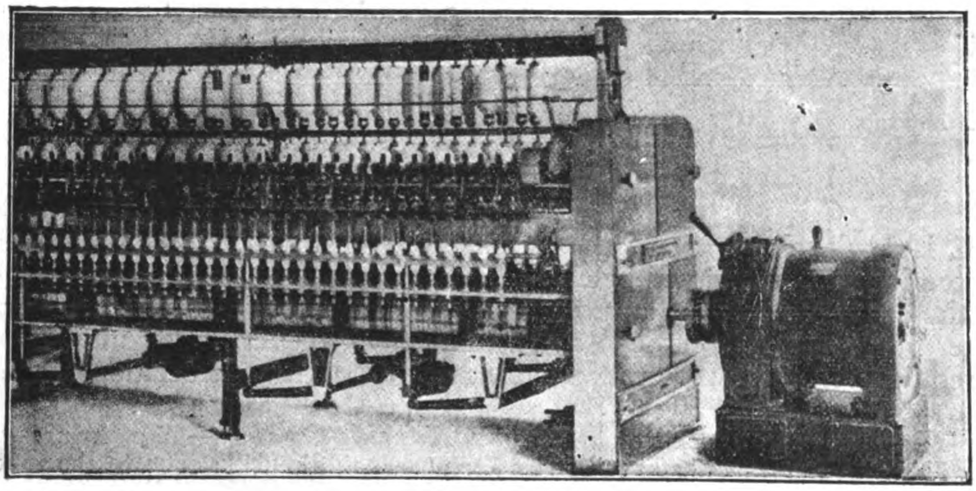

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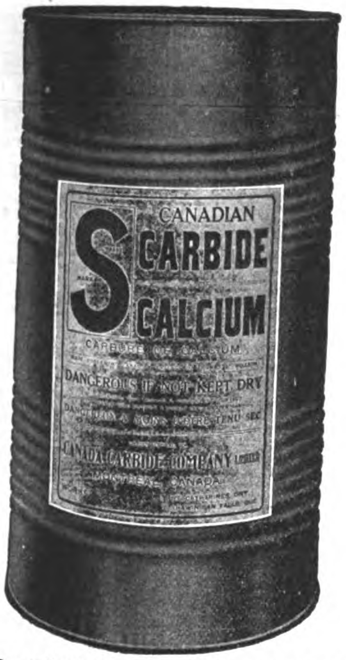


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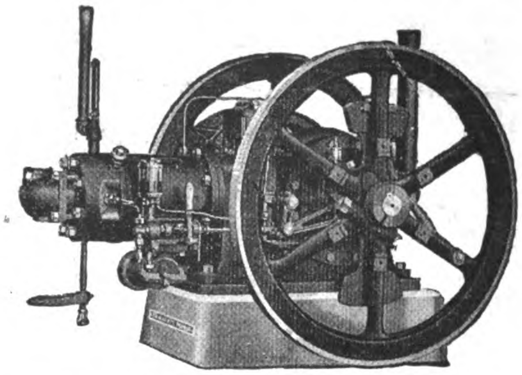

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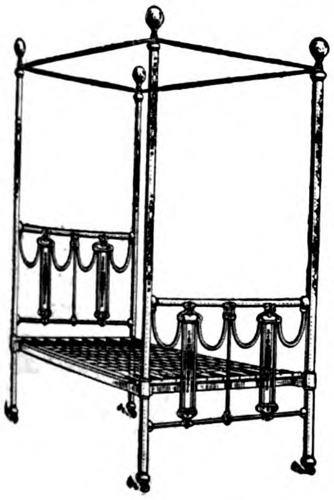

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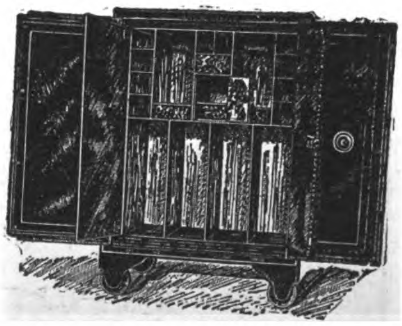

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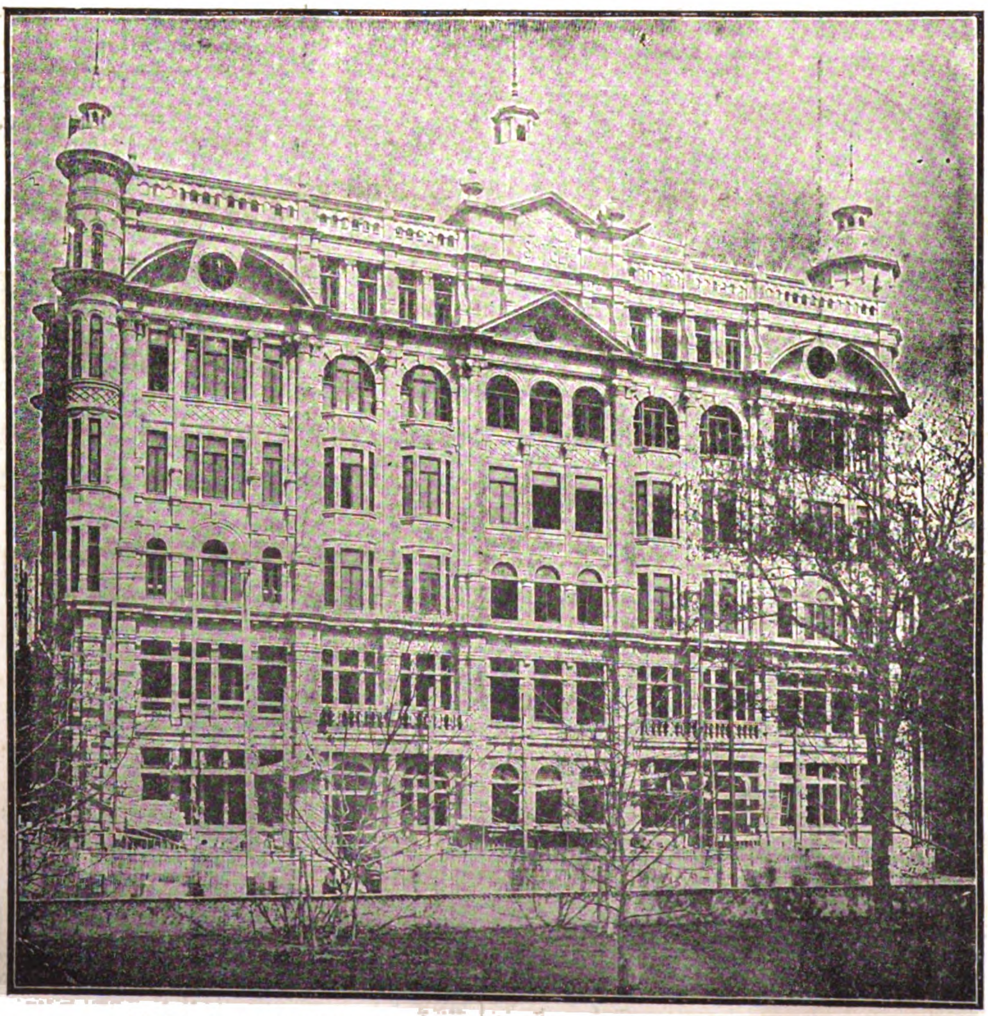

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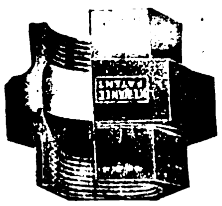

The Air-tested Union with no Inserted Parts
The "Safety-First" Union

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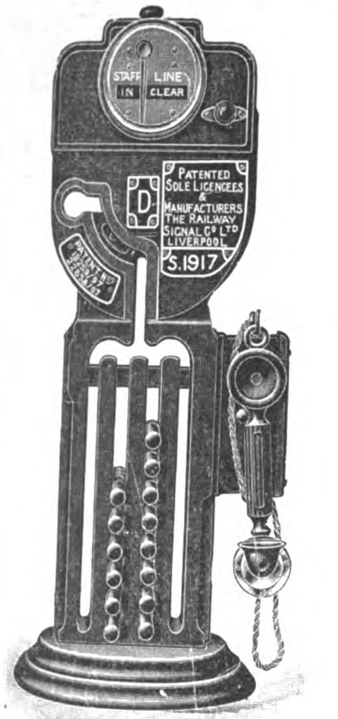
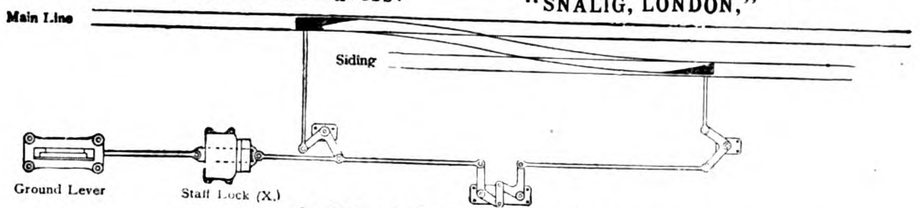



S Type Miniature Train Staff Instrument, with L Type Indicator and Telephone, for the block working of Single Line Railways.

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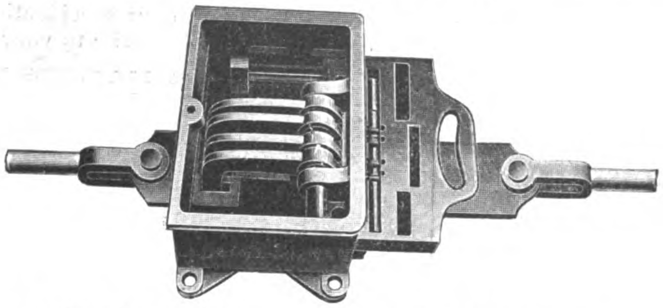
When a train is required to enter or leave an outlying siding the staff is placed in the top slide of the lock, which is then pushed in.
The lower slide, which is attached to the ground lever, is released, thus allowing the ground lever to be operated.
When the points are set for the siding the train staff is securely locked in the box.



Staff Lock (X) with cover removed, for Outlying Sidings.

SOLE LICENSEES AND MAKERS OF,—

The WEBB-THOMPSON System of TRAIN STAFF INSTRUMENTS for Single Line Railways & Tramways.

(PATENTED.)

Schemes to suit special conditions of traffic working will be submitted on receipt of FULL Particulars.

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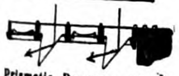
Have Daylight & Fresh Air & clean, bright places!



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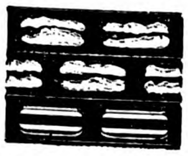

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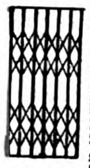

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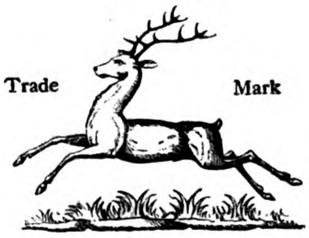

Mark

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Walter E. Olsen & Co.

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本公司開設卜呂宋爰司考耳打二十七號

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本公司創設於一千七百八十九年專製註册之鋼繩蔴索特造鋼絲繩索小呂宋及蔴繩等物供應英國海軍部幷各國政府及各屬地

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總公司英國鈕開塞爾太愛更塞屋

# 美國鋼鐵出產公司廣告

本公司所出鍍鋅彈
簧鐵釘久為光顧諸
君所歡迎蓋以之釘
屋頂實較勝於螺釘
螺蓋螺圈也且價格
又廉此四面之釘圖
卽本公司之出品長
二吋四分之一諸君
若購用之則屋頂不
滲漏貨物不致損壞
且省修理費若欲購
者請向上海江西路
愛字二十四號門牌
可也

THE UNITED STATES STEEL PRODUCTS COMPANY.



# 曲模脫製造公司

Trimont Manufacturing Co.

曲模牌螺旋管鉗早經為使用者所歡迎今
又發明新件名護螺具加於鉗上其大小不
同為鋼質所造不易損壞
護螺螄具之功効能使螺螄運動工作時不
致受意外之不測且能使所用之器具有百
分中之二十五分之效用
曲模螺旋管鉗備有木柄者其大小有六寸
八寸十寸十四寸共四種備有鋼柄者其大
小自六寸至四十八寸
曲模螺旋管鉗內之各附屬物均可互換調
用柄中所用之齒若用壞可更換新製之齒
使鉗仍可保用
若欲知詳細請來函索取本公司之第二百
二十三號目錄書可也
本公司開設鮑思頓勞克司白來



# 特立司代而公司廣告

Drysdale & Co., Ltd.

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及扇機等物
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各外國海軍部之
包造家
總公司開設蘇
革蘭革來司嘝
上海經理處在
九江路九號凱
衛倫公司



# 海華氏有限公司廣告

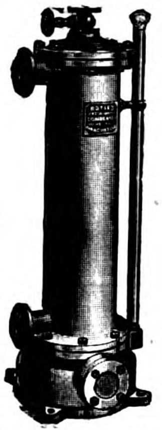
Haywards Ltd.

本公司所製房屋中之各種器俱
幷鐵件等物無不恰合衛生故人
樂為購用今將各種着名之物約
略陳之以便各界諸君採擇焉
道傍三角鏡燈攤邃等物自鎖之
煤板及圈件明瓦透氣翻板出氣
洞馬房鐵柵好華氏鐵樓梯直形
曲形均備幷有避火之樓梯鋼質
可開關之窗架窗槅好華氏改良
無油灰之屋頂鋼質欄板較膠省
百分之二十五溝渠或屋頂之邃
氣具幷窗櫃或門戶所用之外鐵
門若欲知詳細或購買者請來函
掛號索取目錄第一號目錄載路
燈及推邃第二號載煤板及圈件
第三號載鐵樓梯直曲均有第四
號載出氣具室內或屋頂第五號
載馬房鐵件第七號載鋼質欄板
第八號載發光具及爐鍋等物第
十號鋼質窗架窗槅及可開關之
門等物第十一號載花片玻璃第
十二號載改良透光屋頂燈籠等
物第十三號載避火之光銅片
總公司倫敦合衆衕

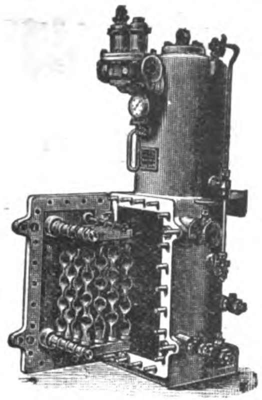
# 老來司有限公司
ROYLES LIMITED

本公司所製煖水器俱色夫尼亞汽筴蒸汽俱汽弇壓機回焰爐鍋引熱機均供愛桂丹尼亞輪船所用幷爲宮庭中所賞識英國及外國之軍艦商船等無不購用各種之生熱機及消冷機無不用註册之老來司管故聲譽日隆其功效遠過於普通之管因物質堅固輕巧易舉迥非他公司所可覓得者也欲知詳細請來函索取樣本可也

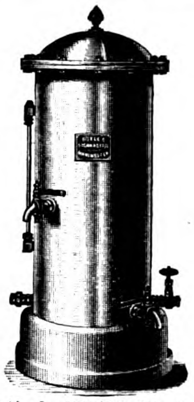
此管專適用於穢水且能除去管底之齷齪較普通式之管其功效不啻倍蓰



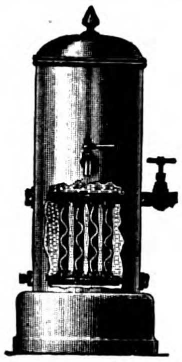
淡水壓機圖
此項壓機特爲商部所造以供其用



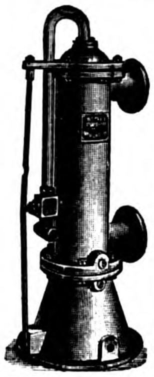
此圖即拆開修整之形
蒸機可任意拆去以便整理且各管不致損壞



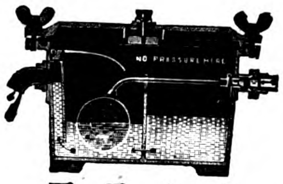
汽鍋關閉之形



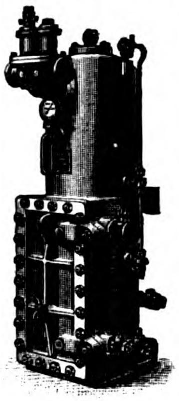
汽鍋圖



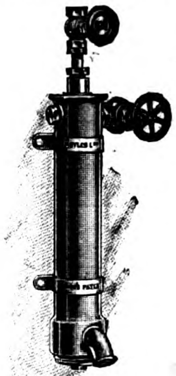
引熱機直形



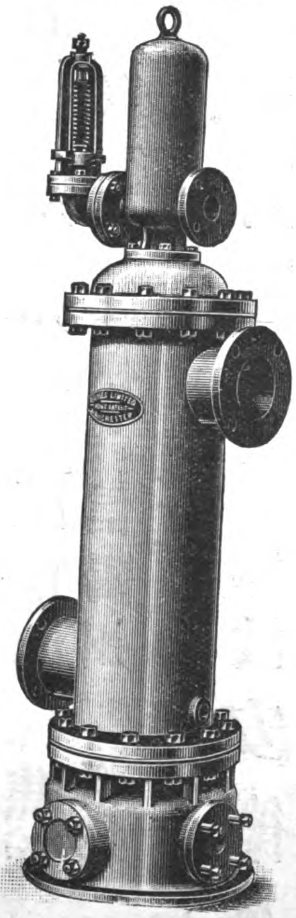
色夫尼亞
(註册商標)汽筴各處行
用者不下十三萬具



蒸機
以作添水之用

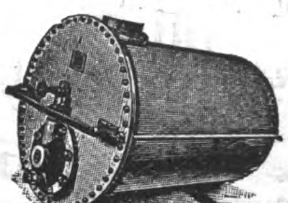


立時生熱之水機圖
專供船中沐浴之用

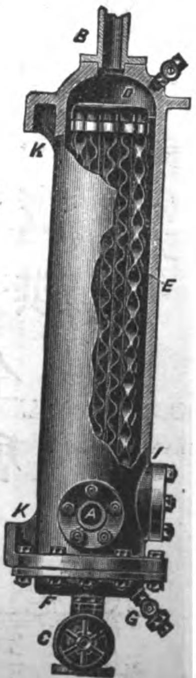


吸汽添水熱機圖

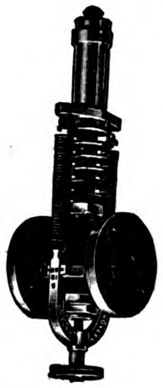
回焰爐鍋



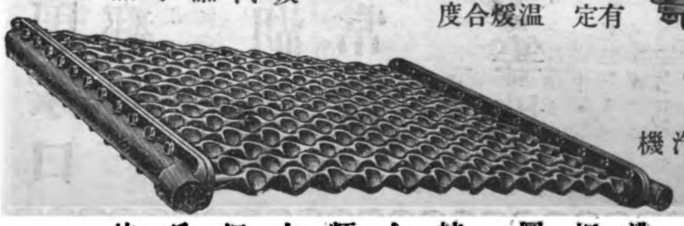
沐浴用之引熱機儲蓄形
(注意)此項引熱機藉水汽
之力能自由運行且能出水
有定溫煖合度



生熱添水汽機



連結之安全汽弇
圖壓力合度包管
便利汽或空氣或
水均合用



沸板圖　較金類之繩爲佳

Telegrams: "ELYOR,CADISHEAD,ENGLAND."

# 交通銀行廣告

BANK OF COMMUNICATIONS

本銀行資本一千萬兩專辦銀行一切交易各項存款無論定期活期其利息均照議給付并滙劃中國各處以及押款等事 總行開設北京 分行東三省 牛莊 奉天 長春 吉林 哈爾濱 遼陽 蓋平 孫家台 鐵嶺 錦縣 新民屯 直隸 北京 天津 張家口 保定 海甸 順德 唐山 北通州 豐鎮 勝芳 石家莊 山西 大同 陽高 陝西 澠池 山東 濟南 濟寧 棗莊 烟台 德州 河南 開封 焦作 周家口 漯河 道口 彰德 鄭州 信陽州 洛陽 鄱陽 江蘇 上海 蘇州 無錫 鎮江 揚州 浦口 板浦 徐州 清江浦 浙江 杭州 寧波 安徽 蕪湖 蚌埠 江西 九江 湖北 漢口 宜昌 沙市 湖南 常沙 益陽 衡州 湘潭 常德 寶慶 廣東 廣東 特別處 新列后 熱河 歸化 香港 新加坡 大連 等等地方

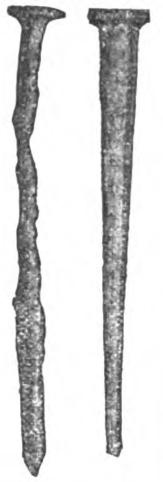
總經理 張思仁 史拉克

副經理 徐寶琪

仝啓

# 美國展轆冶鐵工廠廣告

The American Rolling Mill Co.



新舊兩鐵釘之比較方形熟鐵釘可用三十八年鋼鐵釘可用十一年

本公廠爲國家所特許稟准立案爲萬國鐵廠所賞識因所鑄之**奧姆可**鉄耐用且爲新發明格致術可免生銹之患鐵性本易生銹而本廠獨得妙法使其免銹二十年前無人知其原性故有歐美著名之冶金學士研究其生銹之故及免生銹之法至今日大工已成查得首時所用之鐵爲純潔之質故耐用後因有雜質如鎂及硫礦等物故欲免其生銹必須將雜質冶去而後可至免鋼生銹之法亦然當將雜質及炭質冶去

由研究試驗而得一定例如電池之例一律若電內放雜質則電流不順本廠之**奧姆可**鐵能免生銹因按格致之理而溶鑄者也其雜質均摒棄

凡鉄質之面既有不同故生銹之處亦有多少故凡鑄鐵具務須厚薄均勻寬鬆合度

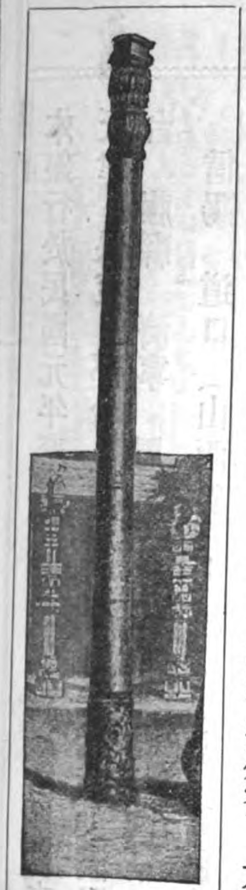
本廠開設美國哇哈哇省

密特兒登電報用奧姆可三字

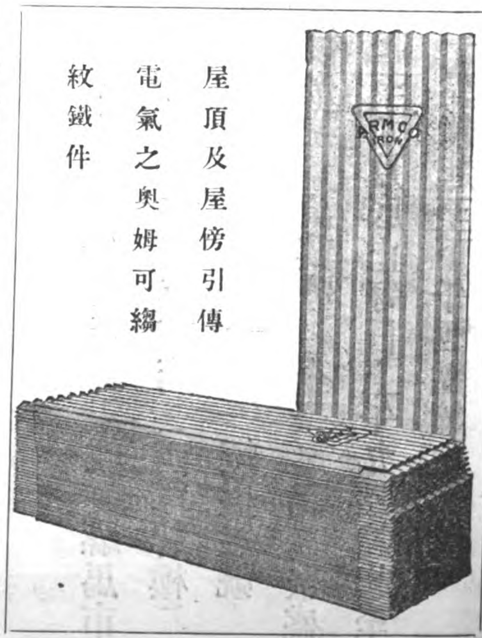
**欲索取詳細目錄可將英文告白之下面角紙裁下送來可也**

英國經理倫敦馬銳公司　小呂宋經理非列賓　大西洋海灣太平洋公司

ARMCO IRON



此圖乃印度國特而希之大鐵柱建於紀元前九百年爲純鐵所鑄之柱



屋頂及屋傍引傳電氣之奧姆可縐紋鐵件

奧姆可縐紋鐵溝大道鐵路陰溝最適用貨眞耐用欲知目錄請來信索取可也

# 中國銀行廣告

THE BANK OF CHINA

本銀行於民國元年奉　政府命令設立兩年以來信用昭著總行設於（北京）分設（直隸省）天津　保定　邢台　灤縣　唐山　滄縣　濮陽　磁州（山東省）濟南　青島　煙台　藤縣　濟寧　周村　惠民　益都　臨清　臨沂（河南省）開封　周口　彰德　漯河　信陽　道口（山西省）太原　運城　歸化城（江蘇省）上海　南京　鎮江　無錫　蘇州　揚州　清江浦（安徽省）安慶　蕪湖　大通　徐州　下關　蚌埠（江西省）南昌（福建省）福州　南台（浙江省）杭州　寧波　蘭谿　嘉興　湖州　溫州　紹興（湖北省）漢口　沙市　宜昌（廣東省）廣州　江門　汕頭　瓊州　韶州　潮州（東三省）奉天　營口　安東　錦縣　大連　鐵嶺　長春　吉林　哈爾濱　齊齊哈爾　等處享有發行鈔票代理國庫之特權並辦理匯兌買賣生金銀往來存款定期存款抵押放款貼現放款代各公司商號或個人收取本埠及他埠票據款項保存有價證券及一切貴重物件至匯兌一項無論通商大埠蕞爾遐陬凡本行已經分設者均屬便利所收匯費無不格外克己以副光顧諸君之雅意再本行發行鈔票準備充足凡完糧納稅發俸放餉官款出納商民交易以及應付鐵路輪船郵電一律通用現爲便利商民行使本行鈔票起見特於北通縣（海甸鎮）設立兌換所並於本京內外城商店繁盛之區委託殷實商號代兌本行鈔票如有多數鈔票請逕向（西交民巷）本行兌換可也茲將代理兌換處所開列於下

▲注意▼（東四牌樓）寶源銀號（安定門）會源銀號（東珠市口）隆茂源銀號（騾馬市）恆裕金店（西河沿）仁昌金店（後門）永通誠布店（新街口）益泰成布店（西單牌樓）和順公布店（後門）平易銀號（西單牌樓）益大銀號（又珠寶市爐房十家）恆盛銀號　同元祥爐房　德順號　聚起號　祥瑞興記　源豐號　復聚號　萬興號　全聚厚記　聚盛源爐房　再本總行營業時間開列如下　陽曆四月一日起至九月底止每日上午九點鐘起至下午四點鐘止由陽曆十月一日起至三月底止每日上午十點鐘起至下午四點鐘止

# 瑞生洋行

## 設分行在漢口天津北京等處

本行開設在華歷有年所承
蒙 官商訂購各種機器或
全廠或零售無不價廉物美
屢承 嘉許遐邇皆知凡
官商諸公購辦機器務祈惠
臨敝行估開價目繪呈圖說
格外克己上海漢口兩處另
設機器陳列所陳列各種最
新式樣機器及五金器具鋼
地軸皮帶輪掛脚等以備
諸公駕臨觀覽特此佈告
上海瑞生洋行謹白

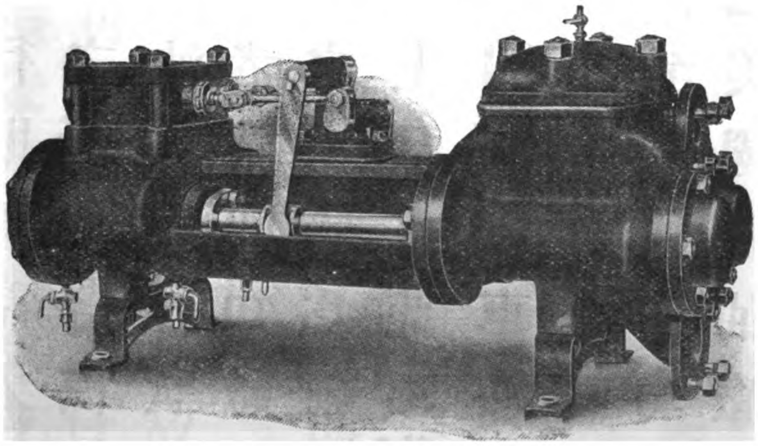
Shanghai Machine Company



# 魏廷敦起水機器有限公司

Worthington Pump Company, Limited.

本公司起水機器亦在各國著名
賽會得有金牌
本公司亦有製造廠在以下之國
英國　法國　美國　澳國
德國　印度國



本公司亦有辦事處在以下載明
之各國
比利時　南亞斐利加　坎拿大
澳大利亞　中國　葡萄牙
墨西哥　巴西國　俄羅斯
阿珍甸　西班牙　義大利

中國總辦事處在上海九江路第三號

# 美孚油行廣告

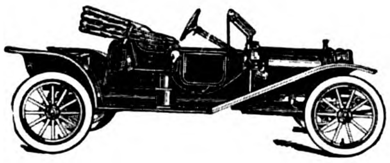
Standard Asphalt Block Filler. Standard Oil Company of New York.

本行製造地瀝清砧塞俱其效用能使所鋪之地不能因天時之更換而改易幷使砧面上之黏性合度且棉軟而能減少噪聲本行之地瀝清砧塞俱其功效有如此之大故凡美國來往行人最多之處鋪以此物其功效則顯而易見故人多稱道之若承諸君不棄欲知詳細效用幷價目者請來函詢問可也



# 美國紐約克美孚油行廣告

Pratt's Motor Spirit. Standard Oil Company of New York.



諸君費錢以購買猗司令汽車油之故必望其發生極速馬力並多走里數然欲達最美滿之目的本行則勸諸君購取敝行之猗司令汽車油若一經試用諸君則知敝行之貨物為無上上品也此項猗司令汽車油裝於箱內每叮自二加侖至五加侖均由敝行之美國鍊油廠所鍊就直接由該處運來故毫無摻雜他種物質之弊

美孚油行猗司令汽車油部啓

# 美國紐約克美孚油行廣告

Standard Oil Company of New York, Lubricating Oil Department.

謹告製造家　謹告廠主　謹告機器家　本行之鎖可聶油爲格致學中所研究而製成之光油且爲有名技師所精鍊而成故用之有極大之效力貴廠之機器其所負之力無論於圓輪或於弇合上若敷以本行之油無不見功不活動之機器不第不能賺錢反使其成爲源源不絕之化錢贅根若欲最高尚之機器實力非用本行完美之鎖可聶光油不爲功其初則雖價格雖略昂貴而其終則自知其便宜多多矣蓋其費既可多省而油質又佳且耗費又少有此三者諸君何不駕臨本行試購自必知本行之非自譽也

鐵道之用次等油者常使管理機器之人有無窮之困難故若用最上等之油不第可除磨擦之障礙亦可省煤火之力曾經有人試過其比率如下若取煤炭以勝磨擦之力則煤炭較次等之光油價格必多三倍若以修葺金屬品類則較次等之光油增價六倍矣

本行之經理人及分行遍佈中國各處以便諸君求近購取此佈

美孚油行光油部敬啓

# 美孚油行廣告

Socony Auto Oils. Standard Oil Co. Lubricating Oil Department.

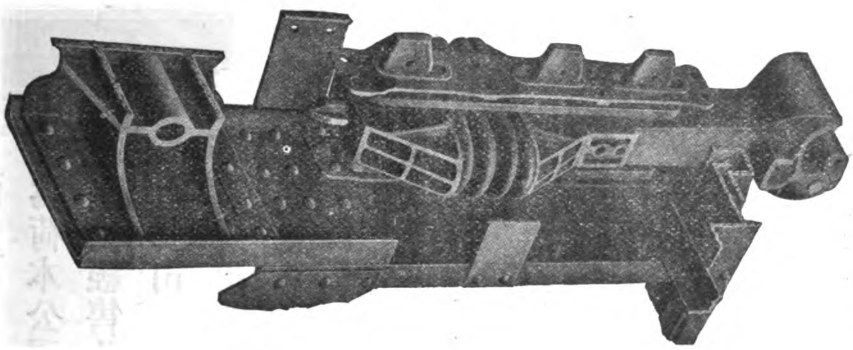
本行所出鎖可聶自轉油乃由格致考驗鍊成特供馬達家所需用且此油精緻能使馬達機器運動合度且可經久省用而免磨擦之弊蓋馬達機器若遭磨擦較用油爲費所謂機器之馬力者即殺力也不可荒廢本行之鎖可聶自轉油分三種一種爲一愛克司之油用於輕小之圓油機上於寒冷之天氣必能自由流行也一種爲兩愛克司之油亦用於圓油機上適用於盛暑之時蓋凝結合度不致汚抹倘此油因天時之故不適於用可用三愛克司之油一種爲三愛克司之油亦用於圓油機上特備爲熱地所用即兩愛克司油不足即以此油代之若承各界諸君不棄欲知詳細請來函索取說明書即汽車油之指南本行專做光油遐邇聞名以上三種油桶祈認明庶不致誤

美國紐約克美孚油行光油部敬啓

# 新民頓鐵道材料出口公司廣告

The T. H. Symington Co. Railway Material Export Corporation.

本公司所製鐵道用具爲全世
界之冠且樣式均特別新樣所
製之旅行箱及運動機件無論
內件外件無不齊備故爲美國
鐵道奉爲圭臬且通行於世界



各處中國之京張鐵路及高麗
鐵路均購用極有效力若承不
棄請通函定購可也
開設美國紐約省百老會路一
百四十九號

# 英國來大滙有限公司廣告

F. Reddaway & Co., Ltd.

本公司獨製駱駝牌
皮件專製救火皮帶
鐵甲皮帶及皮布等
件且所製皮件爲水
或汽或藥水所不能
侵入者本公司又製
造橡皮器俱以供鐵
路幷工藝廠及開礦
工作等處之用若承
各界諸君光顧請向
經商人詢問駱駝牌
可也

總公司及工廠開
設英國曼區司得

# 司帝反生公司廣告

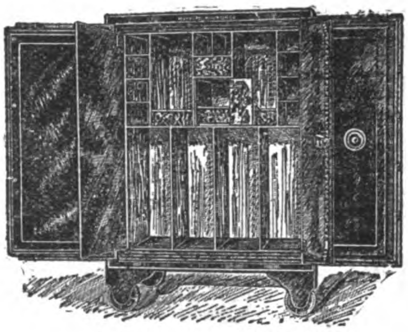
W. F. Stevenson & Co., Ltd.

小呂宋　伊羅伊羅　塞步

本公司駐小呂宋單獨經理白
弗羅匹次公司之農業機器克
老司來弟兄公司之煤汽機及
油汽機奧司丁製廠之造路機
器威廉滑脫公司之航海機器
及水鍋等
合羣愛司倍司督司東方經理處

# 晉隆洋行廣告

Herring Hall Marvin Safes. Mustard & Co.



赫令好馬文保險箱爲
上海所罕見目下陳列
於本公司之售賣間
若欲知詳細價目請來
函索取目錄幷價格表
爲荷本公司在中國爲
單獨經售此項保險箱
之公司
公司開設上海圓明
園路二十二號
電話第十五號

# 馬爾思公司

A. J. Morse & Son Diving Apparatus.

本公司創設於紀元一千八
百三十七年專製下水應用
之器俱若欲定製無不立辦
公司開設美國鮑思敦高
街第二百二十一號
經理處小呂宋弗蘭克司
決浪克

# 希米脫加熱機關車蒸機公司廣告

The Schmidt Superheater For Locomotives.

The Schmidt Superheating Co., Ltd.

本公司所製之加熱蒸機中有
四百九十多條之鐵道用二萬
八千五百架機關車之加熱蒸
機均爲倫敦及西北鐵路公司
所審定若承購買請向上海經
理處瑞記洋行定購可也
公司開設英國章司民司
得維多利亞街二十八號

# 白老頓製銅公司廣告

The Broughton Copper Co., Ltd.

本公司冶銅製造紫銅黃銅青銅管子滊冶合度堅固異常特供航海及機關車并種種用具叉製造銅塊銅條銅片及銅版并製電銅版及夾銅等物

公司開設英國曼區司得

# 安德生公司廣告

Wm. H. Anderson, & Co. Manila, P. I.

本公司專做出口進口貨物并代客買賣且爲以下所列各公司駐小呂宋之經理革林島水門汀泥公司　香港纜索製造公司　立培麥克聶立培公司　司活夫公司　勃老司活克白耳克考蘭特公司　婑磨督公司　大愛垉特保險箱光滑油溝渠管火磚火泥及羅勃老特避火之瓦若承各界光顧祈通函定購可也

本公司開設小呂宋小打克羅橋

# 麥康韋討萊公司廣告

The McConway & Torley Co. Janney—Penn. Coupler.

邇來新發明之愛姆西皮近耐形連結俱爲本公司所輸入及研究所得者此連結俱卽近耐形之化身而變成目下最通用之對鎖鎖具及肘節開具爲美國愛姆西皮會所推許玆將各所製造者一一說明於後

對鎖者卽既爲輪制所鎖住則鎖條決不向上活動因下端凸出干連結之空處免致脫節也

鎖具者卽以鎖砧置於連頭之內端俟不連結之端向上轉動時卽按節而合若欲解脫此鎖具當於連結時拔去之

肘節開具卽由最相結連之處或略分開之處開放至最大開放處其運行處自由且肘節開放完備

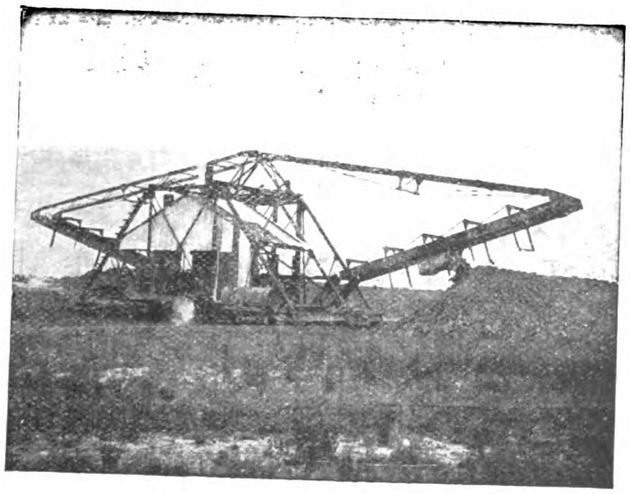
其鎖面形極大約五方吋故能使肘節附合且鎖砧大小適合於連結端之下此連結俱備有各種之附屬品且易於修理此項連結俱爲本公司所專製

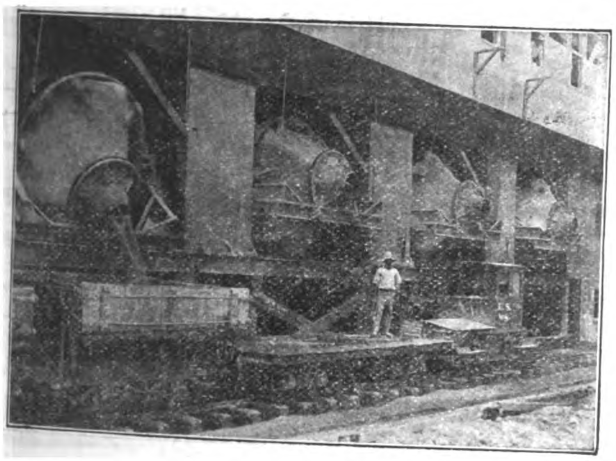
總公司開設美國本色萬尼亞省匹此勃

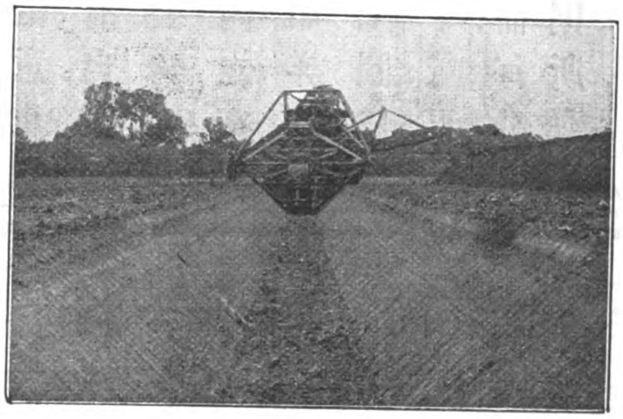
中國經理上海愼昌洋行天津協隆洋行

# 奧司丁挖渠機器公司露佈

F. C. Austin Drainage Excavator Co.







本公司製造各種機器如溉田機器鑿溝機器且一經購定即可速即裝運出口今本公司特登廣告以告諸包工家營造師以及政府中官吏因本公司已將各機器早經裝就定單一到即可運往印度緬甸錫蘭暹羅海峽殖民地埃及中國日本及遠東諸各處水脚保險均可包理

奧司丁鑿溝機器樣式及大小種類極多且各種地土均可挖鑿其兜能自傾外出其機器之料作均鋼所鑄奧司丁掘土機器能自由運動地之深淺闊狹斜側均適宜合用其兜能自傾外出圖中之奧司丁連結挖掘機器爲美國政府所用以開巴拿馬運河之用每一連機每點鐘可挖掘六十八立方碼奧司丁公司所出之機器通行於美國英國坎拿大奧司達利亞南亞非利加日本俄羅斯意大利巴西及埃其丁民主國且均由各該政府定購

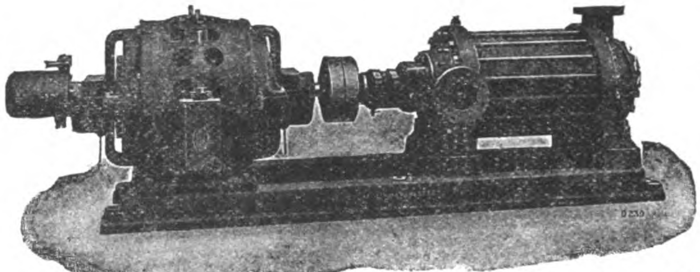
若欲知詳細章程者可函達上海遠東報主筆先生可也

本公司開設美國芝加哥省

# 麥脫拍來脫輪盤抽機公司

Mather & Platt, Ltd. Turbine Pumps.

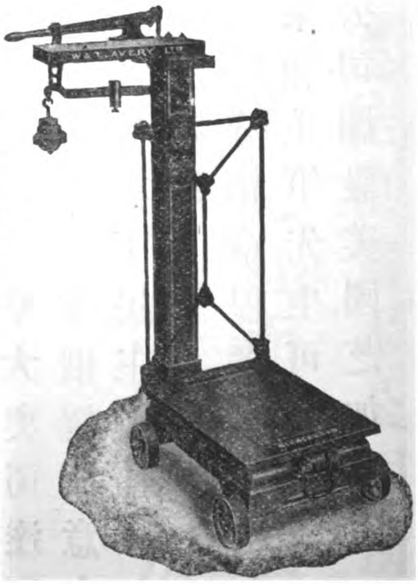
輪盤抽機爲本公司所發明且已有四十年之經驗故所出之抽機愈製愈精購用者無不樂用且無論高低均適於用此項抽機之動力或由馬達小輪汽輪速率之汽機或皮帶或繩索之力均可抽動



且一經試用則耐久非常不必再行查驗本公司所出之抽機通行於各處極多行試多年從未拆卸開視因本公司所製造之抽機美備洽意也此項抽機有自動壓勻之力裝製齊備且可增減機內之空穴價格便宜若欲購用而知詳細章程者請來函索取目錄上圖爲六筒之抽機　頭長六百十二尺每分鐘可吸六百五十加侖每分鐘可轉一千四百五十次則所動之力乃藉馬達也

# 愛物來磅秤工廠

W. & T. Avery, Ltd.　　Avery's Platform Scales



愛物來平面磅秤爲英國所製造各處通行用之以秤茶葉咖啡五穀橡皮以及種種物件無不合用今將其重量大小開列於下以便購者取擇也

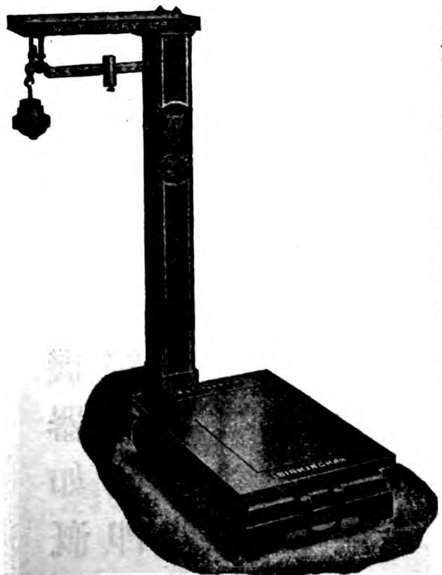
平面長二十一吋半平面闊十五吋可秤四百磅

| | | |
|---|---|---|
| 二十五吋 | 十六吋 | 六百磅 |
| 二十六吋 | 十七吋 | 八百磅 |
| 二十六吋 | 十七吋 | 一千磅 |
| 二十八吋 | 二十吋 | 一千二百磅 |
| 二十八吋 | 二十一吋 | 一千五百磅 |
| 三十三吋 | 二十五吋 | 二千磅 |
| 三十四吋 | 二十六吋 | 二千五百磅 |

本廠爲世界最大之製造權衡試驗機器之廠遐邇聞名若光顧購買方知本廠之貨物也

本廠開設於英國百銘罕城

上海及橫濱經理怡和洋行



# 橫濱正金銀行廣告

Yokohama Specie Bank, Limited

本銀行創設於紀元一千八百八十年總行開設日本橫濱資本日洋四千八百萬元收足資本日洋三千萬元公積日洋一千八百五十萬元英京倫敦各銀行如倫敦及司密夫聯合銀行倫敦聯會股票銀行及派耳銀行均爲本行之經理今將分行及經理處開列如下

安東縣　孟買　加耳谷塔　長春　大連　檀香山　香港　漢口　神戶　倫敦　來因司　遼陽　奉天　紐約　牛莊　長崎　大坂　旅順　北京　舊金山　東京　鐵嶺　天津　青島　哈爾濱　勞山及耳司

上海亦設分行　活支及定期存款利息均有銀兩洋圓均聽尊便　匯票可通日本高麗臺灣及中國各重要地方并歐洲印度美洲各通商處所并辦理各種銀行所辦各事宜

經理科大麥啟

# 克耶鎖鍵工廠露佈

Joseph Kaye & Sons Ltd., Lock Works, Leeds.

本公廠專製車門鎖鍵滑門門門精巧門鐶門鎖及門閂等以應各種用品且製造鋸齒形無縫之純鋼油管承經註冊專賣爲英國之出品供應於英國水軍者不下六萬只大西鐵路大北鐵路蘭克省及雅克省間之鐵路倫敦及西南鐵路南斐洲及印度國有之鐵路均用此純鋼油管盛油也倘承不棄請來信定購是幸

工廠開設於英國离池

# 可脫賴公司廣告

COTLITE COMPANY

## 愛式的燐燈廣告

此燈完全裝置如以鉗十燈罩十火頭十火管十故光耀無匹價洋英金十三鎊十五仙令水脚運往倫敦則由公司照付若承光顧則可運往任何處所英國羅白次橋可脫賴公司敬啟電報號碼用英國羅白次橋可脫賴字樣

# 法蘭克司屈郎機器公司

Frank L. Strong Machinery Co.

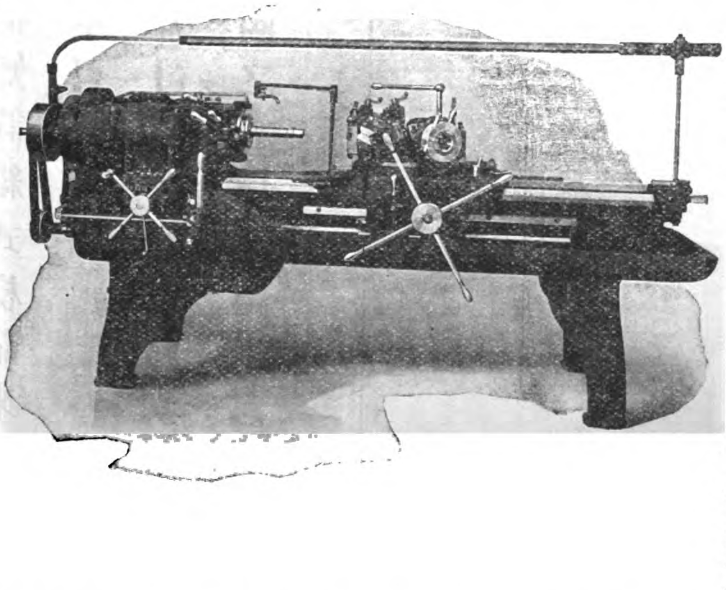
本公司開設斐列濱經理各種機器幷顧聞工程
建築營造等事下列各製造廠均爲本公司駐斐
列濱祇此一家之經理公司
總電汽公司 專製電汽應用材料器俱
四登水輪公司 專製水輪
拿皮泡公司 專製車機升機
芝加哥抽機器俱公司 專製抽氣機壓氣機及附屬品
美國器俱工廠公司 專製車機鏍子製模俱半徑鑽頭
美國白羅耳公司 專製風車風房幷通氣之器俱
白耶息比製造公司 專製研磨機器及各附屬品
鷹立球鋼鐵公司 專製鋼鐵器俱
立及悟特製造公司 專製鋸件
屈老司康克利鋼件公司 專製（康式）房屋物件
哇的司升機公司 專製坐客升機及貨物升機
押克製造公司 專製冰機
白考克威耳考克司公司 專製水管鍋爐
美國浣衣機器公司 專製浣衣機器
愛姆司鐵廠 專製汽機及鍋爐
灰衣搿安公司 專製鋸件及木工各種機器
古特立志公司 專製橡皮物件
耶耳土耐製造公司 專製鏈具及升機
查去倫公司 專製避水皮帶等件
火文哇温公司 專製（海密耳登可立司）式之汽機
克老搿轉轍俱及應用品公司 專製德律風器俱及附屬品
搿老克裝包公司
若承光顧無不歡迎電報密碼請用英字 Landstrong.



# 羣司蘭姆生機器公司

Jones & Lamson Machine Company.

此圖爲本公司所特之車床若能習學此
機完美則得利可操勝劵也此車床爲車
塔平面機其大小爲闊三吋長三十六吋
專做鐵條柄軸等各種工件故此機及其
作用　能使工人幷機器加增出
品　因用是項機器不必購用價值高貴



之小另件配製工作也
總之製造此種車床之目的　即費一
文錢得一文錢之利於購者有
莫大之利益
欲知詳細章程請來函索取不費郵資
本公司開設 美國活忙脫省司不林飛而特 英國倫敦維多利亞街九七號

# 華愛德公司

本公司代聘全球著名工程師專包辦並經理各種工程兼各式工程物料已歷有年所成效昭著爲各國官商各界所推許如蒙惠顧請向下列各經理處接洽可也

美國紐約匯業處四十三至四十九號

英國倫敦克洛克路九號

J. G. White & Company

# 潑利司脫門弟兄公司廣告

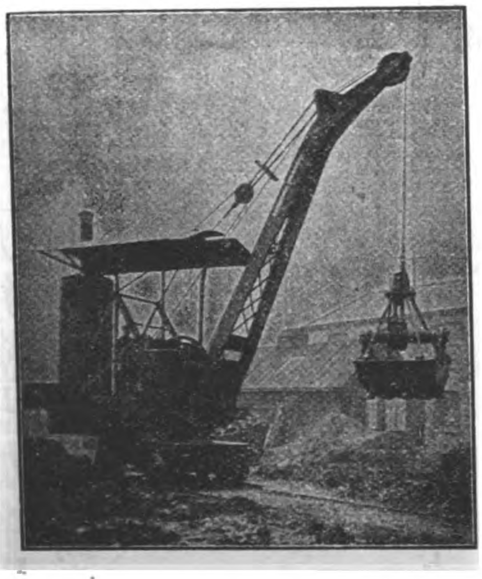
Priestman Brothers, Limited.

本公司專製掘泥機器挖泥機器及升降機器其兜之大小式樣共有一百五十種小自一立方呎起大至一百立方呎

若欲知詳細式樣請來函索取樣本可也

本公司開設英國倫敦

中國之經理處上海志大洋行



上圖爲多兜挖泥機之一爲大包工家大成公司所有

# 克來葛有限公司

A. F. Craig & Co., Ltd.

蘇格蘭丕士蘭城內

經理各項工程另有鑄鐵廠汽鍋製造廠

經理製糖機械煉糖機器各式俱備

事務所倫敦來頓好街

上海 漢口 凱衛倫洋行經理


# 交通部吉長鐵路客車時刻表

Kirin-Changchun Railway.

民國四年五月一日改定

## 由吉林至長春頭道溝

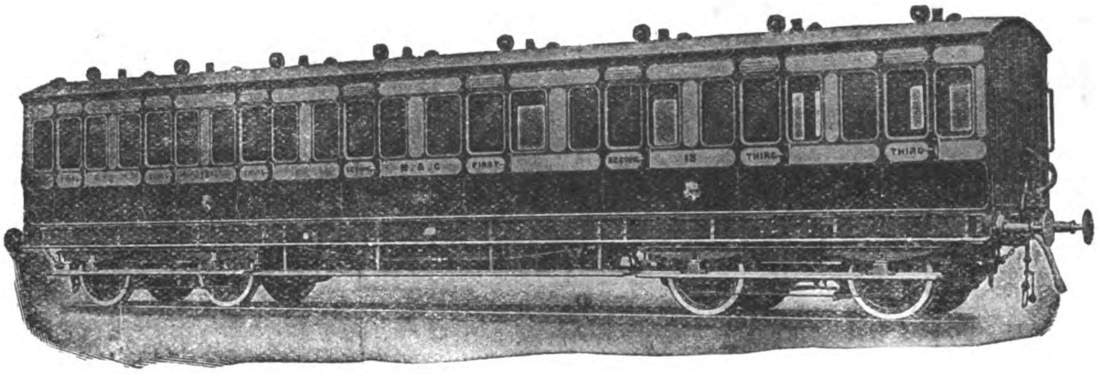
| 站名 | | 上行車 第二次 客車 | 上行車 第四次 客貨車 |
|---|---|---|---|
| 吉林 | 開 | 下午二·三〇 | 上午六·二〇 |
| 九站 | 到 | 下午二·五〇 | 上午六·四二 |
| 九站 | 開 | 下午二·五三 | 上午六·四五 |
| 孤店子 | 到 | 下午三·〇七 | 上午七·〇三 |
| 孤店子 | 開 | 午三·〇八 | 上午七·〇四 |
| 樺皮廠 | 到 | 下午三·二三 | 上午七·二〇 |
| 樺皮廠 | 開 | 下午三·二四 | 上午七·二三 |
| 趙家店 | 到 | | |
| 趙家店 | 開 | 下午三·四六 | 上午七·五六 |
| 土們嶺 | 到 | 下午四·〇六 | 上午八·一八 |
| 土們嶺 | 開 | 下午四·一一 | 上午八·二四 |
| 營城子 | 到 | 下午四·三三 | 上午九·〇三 |
| 營城子 | 開 | 下午四·三六 | 上午八·五〇 |
| 下九臺 | 到 | 下午四·四八 | 上午九·〇三 |
| 下九臺 | 開 | 下午四·五〇 | 上午九·〇五 |
| 飲馬河 | 到 | 下午五·〇四 | 上午九·二〇 |
| 飲馬河 | 開 | 下午五·〇六 | 上午九·三一 |
| 卡倫 | 到 | 下午五·二八 | 上午九·五五 |
| 卡倫 | 開 | 下午五·四〇 | 上午九·五七 |
| 長春 | 到 | 下午六·一〇 | 上午一〇·三一 |
| 長春 | 開 | 下午六·一五 | 上午一〇·三七 |
| 頭道溝 | 到 | 下午六·二五 | 上午一〇·四七 |

## 由長春頭道溝至吉林

| 站名 | | 下行車 第一次 客車 | 下行車 第三次 客貨車 |
|---|---|---|---|
| 頭道溝 | 開 | 上午七·三〇 | 下午二·二〇 |
| 長春 | 到 | 上午七·三八 | 下午二·三〇 |
| 長春 | 開 | 上午七·四二 | 下午二·四五 |
| 卡倫 | 到 | 上午八·一三 | 下午三·二〇 |
| 卡倫 | 開 | 上午八·一四 | 下午三·二五 |
| 飲馬河 | 到 | 上午八·四六 | 下午三·五八 |
| 飲馬河 | 開 | 上午八·四八 | 下午四·〇三 |
| 下九臺 | 到 | 上午九·〇三 | 下午四·一七 |
| 下九臺 | 開 | 上午九·〇四 | 下午四·二一 |
| 營城子 | 到 | 上午九·一六 | 下午四·三四 |
| 營城子 | 開 | 上午九·一八 | 下午四·三八 |
| 土們嶺 | 到 | 上午九·四〇 | 下午五·〇三 |
| 土們嶺 | 開 | 上午九·五〇 | 下午五·一三 |
| 趙家店 | 到 | | |
| 趙家店 | 開 | 上午一〇·一〇 | 下午五·三三 |
| 樺皮廠 | 到 | 上午一〇·二一 | 下午五·五七 |
| 樺皮廠 | 開 | 上午一〇·二三 | 下午六·〇三 |
| 孤店子 | 到 | 上午一〇·四六 | 下午六·一八 |
| 孤店子 | 開 | 上午一〇·四七 | 下午六·二〇 |
| 九站 | 到 | 上午一一·〇三 | 下午六·三八 |
| 九站 | 開 | 上午一一·〇五 | 下午六·四三 |
| 吉林 | 到 | 上午一一·二五 | 下午七·〇五 |

# 猛獅車輛廠

本廠開設英倫及蘇格蘭專造各種火車客車貨車電車街車汽車車輪車軸以及車上一切應用各件屢經中國津浦鐵路及歐洲各國鐵路公

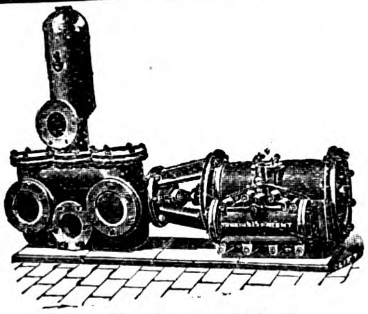


司在本廠定購貨物均承嘉許如蒙惠顧本經理定能上副雅意也

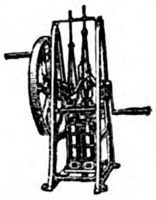
上海江西路七號

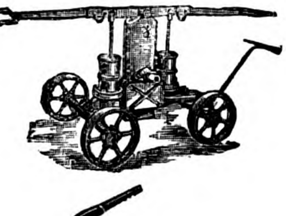
**鷹揚洋行經理**

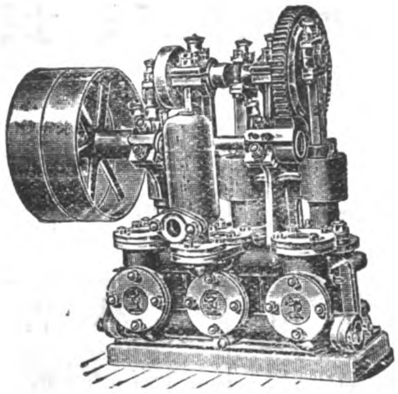
電碼 "Keelun" Shanghai　　電話二六一六　　Hurst, Nelson & Co., Ltd.

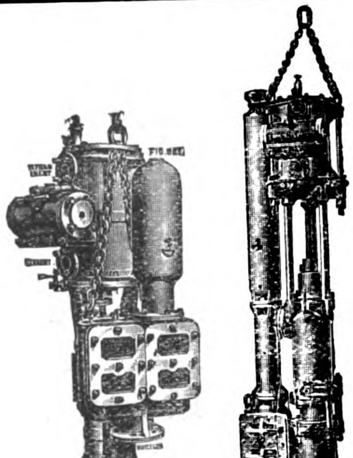


普通汽力抽水機









下垂抽水機
煤船煤礦所用

本公司製造各種抽水機專備工商各界採用各式全備不論使用何項動力如人工汽機皮帶風車水電各力之類均能適用如蒙函詢卽將東方目錄寄奉

英國華亨頓城

伊凡斯公司謹啟

Joseph Evans & Sons

# 正太鐵路客車時刻表

The Cheng-Tai Railway

## 上行各車

| 站名 | 價目 頭等 元 | 頭等 角 | 二等 元 | 二等 角 | 三等 元 | 三等 角 | 慢車 開 點 | 慢車 開 分 | 客貨車 開 點 | 客貨車 開 分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 石家莊 | | | | | | | 七 | 〇三 | 七 | 三十 |
| 大郭村 | | 五 | | 三 | | 二 | 七 | 十六 | 七 | 四五 |
| 獲鹿縣 | | 九 | | 五 | | 三 | 七 | 三二 | 八 | 〇三 |
| 頭泉 | 一 | 二 | | 七 | | 四 | 七 | 五一 | 八 | 二三 |
| 白王莊 | 一 | 五 | | 八 | | 五 | 八 | 十一 | 八 | 四六 |
| 五里鋪 | 一 | 七 | 一 | | | 六 | 八 | 二一 | 八 | 五八 |
| 微水 | 二 | 一 | 一 | 一 | | 七 | 八 | 三六 | 九 | 十五 |
| 南橫口 | 二 | 三 | 一 | 三 | | 八 | 八 | 四九 | 九 | 二九 |
| 南張村 | 二 | 五 | 一 | 四 | | 九 | 九 | 〇二 | 九 | 四三 |
| 井陘縣 | 二 | 八 | 一 | 五 | 一 | | 九 | 二五 | 九 | 十五 |
| 北峪 | 三 | 一 | 一 | 七 | 一 | 一 | 九 | 三六 | 十 | 四一 |
| 南峪 | 三 | 三 | 一 | 八 | 一 | 一 | 九 | 四七 | 十 | 五一 |
| 娘子關 | 三 | 六 | 二 | | 一 | 二 | 十 | 十八 | 十 | 十七 |
| 程家隴底 | 四 | | 二 | 二 | 一 | 四 | 十 | 三四 | 十一 | 三四 |
| 下盤石 | 四 | 五 | 二 | 四 | 一 | 五 | 十 | 五十 | 十一 | 五二 |
| 巖會 | 四 | 八 | 二 | 六 | 一 | 六 | 十一 | 〇四 | 十一 | 十四 |
| 亂流 | 五 | 三 | 二 | 九 | 一 | 八 | 十一 | 二四 | 十二 | 三六 |
| 白羊墅 | 五 | 六 | 三 | 一 | 一 | 九 | 十一 | 三八 | 十二 | 五二 |
| 陽泉 | 五 | 八 | 三 | 二 | 二 | | 十二 | 三七 | 十三 | 二十 |
| 賽魚 | 六 | 二 | 三 | 四 | 二 | 一 | 十二 | 五三 | 十三 | 三七 |
| 坡頭 | 六 | 五 | 三 | 六 | 二 | 二 | 十三 | 〇九 | 十三 | 五四 |
| 測石驛 | 六 | 八 | 三 | 七 | 二 | 三 | 十三 | 三二 | 十四 | 十六 |
| 芹泉 | 七 | 三 | 四 | | 二 | 五 | 十三 | 五六 | 十四 | 四十 |
| 壽陽縣 | 七 | 八 | 四 | 二 | 二 | 六 | 十四 | 十九 | 十五 | 十三 |
| 郭村 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 三二 | 十五 | 二九 |
| 上湖 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 四七 | 十五 | 四六 |
| 盧家莊 | 九 | | 四 | 九 | 三 | | 十五 | 〇三 | 十六 | 十 |
| 段廷 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 十八 | 十六 | 二七 |
| 東趙村 | 九 | 八 | 五 | 三 | 三 | 三 | 十五 | 三四 | 十六 | 四六 |
| 北合流 | 十 | 二 | 五 | 五 | 三 | 四 | 十五 | 四七 | 十七 | 〇三 |
| 榆次縣 | 十 | 五 | 五 | 七 | 三 | 五 | 十六 | 〇九 | 十七 | 三三 |
| 鳴李 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二一 | 十七 | 四七 |
| 北營 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 三三 | 十八 | 〇一 |
| 太原府 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 四五 | 十八到 | 十五 |

## 下行各車

| 站名 | 價目 頭等 元 | 頭等 角 | 二等 元 | 二等 角 | 三等 元 | 三等 角 | 慢車 開 點 | 慢車 開 分 | 客貨車 點 | 客貨車 分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 太原府 | | | | | | | 七 | 五三 | 八 | 〇六 |
| 北營 | | 五 | | 三 | | 二 | 八 | 〇七 | 八 | 二一 |
| 鳴李 | | 八 | | 五 | | 三 | 八 | 十九 | 八 | 三四 |
| 榆次縣 | 一 | 二 | | 七 | | 四 | 八 | 四五 | 八 | 五九 |
| 北合流 | 一 | 六 | | 九 | | 六 | 八 | 五九 | 九 | 十四 |
| 東趙村 | 二 | | 一 | 一 | | 七 | 九 | 十三 | 九 | 二九 |
| 段廷 | 二 | 四 | 一 | 三 | | 八 | 九 | 二九 | 九 | 四七 |
| 盧家莊 | 二 | 八 | 一 | 五 | 一 | | 九 | 四五 | 十 | 〇七 |
| 上湖 | 三 | 二 | 一 | 八 | 一 | 一 | 十 | 〇三 | 十 | 二六 |
| 郭村 | 三 | 六 | 二 | | 一 | 二 | 十 | 十九 | 十 | 四三 |
| 壽陽縣 | 四 | | 二 | 二 | 一 | 四 | 十 | 三七 | 十一 | 〇七 |
| 芹泉 | 四 | 四 | 二 | 四 | 一 | 五 | 十 | 五三 | 十一 | 二四 |
| 測石驛 | 四 | 九 | 二 | 七 | 一 | 七 | 十一 | 十三 | 十一 | 四七 |
| 坡頭 | 五 | 二 | 二 | 八 | 一 | 八 | 十一 | 二五 | 十二 | 〇一 |
| 賽魚 | 五 | 六 | 三 | | 一 | 九 | 十一 | 三八 | 十二 | 十九 |
| 陽泉 | 五 | 九 | 三 | 二 | 二 | | 十二 | 三九 | 十三 | 三五 |
| 白羊墅 | 六 | 一 | 三 | 三 | 二 | 一 | 十二 | 五[illegible] | 十三 | 五一 |
| 亂流 | 六 | 四 | 三 | 五 | 二 | 二 | 十三 | 〇四 | 十四 | 〇八 |
| 巖會 | 七 | | 三 | 八 | 二 | 四 | 十三 | 二四 | 十四 | 三七 |
| 下盤石 | 七 | 三 | 四 | | 二 | 五 | 十三 | 四十 | 十四 | 五三 |
| 程家隴底 | 七 | 七 | 四 | 二 | 二 | 六 | 十三 | 五七 | 十五 | 十二 |
| 娘子關 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 十七 | 十五 | 四五 |
| 南峪 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 三三 | 十六 | 〇一 |
| 北峪 | 八 | 七 | 四 | 七 | 二 | 九 | 十四 | 四二 | 十六 | 十二 |
| 井陘縣 | 九 | | 四 | 九 | 三 | | 十四 | 五八 | 十六 | 五五 |
| 南張村 | 九 | 二 | 五 | | 三 | 一 | 十五 | 十 | 十七 | 〇九 |
| 南橫口 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 二一 | 十七 | 二一 |
| 微水 | 九 | 七 | 五 | 三 | 三 | 二 | 十五 | 三三 | 十七 | 三五 |
| 五里鋪 | 十 | | 五 | 四 | 三 | 四 | 十五 | 四九 | 十七 | 五五 |
| 白王莊 | 十 | 二 | 五 | 六 | 三 | 四 | 十五 | 五八 | 十八 | 〇六 |
| 頭泉 | 十 | 六 | 五 | 七 | 三 | 六 | 十六 | 十三 | 十八 | 二三 |
| 獲鹿縣 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二八 | 十八 | 五七 |
| 大郭村 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 四十 | 十八 | 五七 |
| 石家莊 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 五一 | 十九到 | 〇十 |

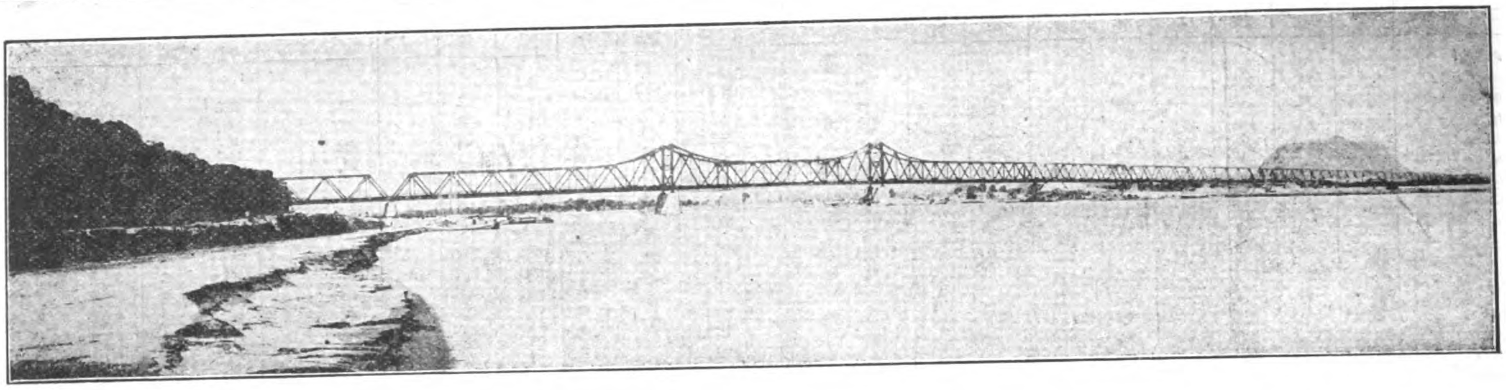

# 百祿鋼廠

專製著名奧國司的林器械鋼料

本廠在上海備有風鋼及局廠中所必需之高等生鋼開礦築路一切應用器具鋼料銼刀及鋼上繩索炮槍筒子并軍用各種火藥凡外洋國家所設局廠均立有承攬各國大省設有分行在中國設辦事處於上海江西路十號

Bohler Bros. & Co., Ltd.

# 津浦鐵路



## 津浦鐵路局改訂特別通車時刻廣告

本路特別通車上下開到時刻現經改訂與京奉膠濟滬甯等路客車上下銜接自本年十二月一日實行玆將改訂時刻暨各路銜接時刻開列如左

### 下行車

京奉路由瀋陽來之通車星期六日上午十鐘三十五分到天津東站

本路特別通車星期六日上午十一鐘二十分由天津東站開

京奉路由北京來之快車每日上午十一鐘二十五分到天津總站

本路特別通車星期六日上午十一鐘四十八分由天津總站開

膠濟路由青島來之快車每日下午五鐘五十九分到濟南

本路特別通車星期六日下午八鐘十二分由濟南開星期日下午一鐘十三分到浦口

滬甯路開往上海之快車星期日下午二鐘三十五分由南京開是日下午八鐘二十分到上海

### 上行車

滬甯路快車星期一日上午七鐘十分由上海開十二鐘三十分到南京

本路特別通車星期一日下午一鐘四十五分由浦口開星期二日上午六鐘四十分到濟南

膠濟路開往青島之快車每日上午八鐘由濟南開

本路特別通車星期二日下午二鐘三十三分到天津總站二鐘五十三分到天津東站

京奉路開往北京之快車每日下午三鐘四十五分由天津東站開其開往瀋陽之通車星期三日上午一鐘二十五分由天津東站開

### 特別注意

客商星期六日由京來津換乘本路特別通車南行者務請在總站過車勿到東站以免趕車不及

再客商星期六日上午八鐘三十分由北京起程星期日下午八鐘二十分即到上海其由上海北行者星期一日上午七鐘十分起程星期二日下午六鐘五十五分即到北京每次需時不足三十六鐘洵屬最捷之徑順此附告

Chinese Government Railways—Tientsin-Pukow Line

Hongkong & Whampoa Dock Co., Ltd.

## 香港黃埔船澳有限公司廣告

本公司承接製造各種機器鐵路火車橋梁河海明暗輪船拖船淺水火船載客運貨大小快捷毛打輪船舉凡一切水陸起重器機爐鑊鎔鑄銅鐵器具電鍍等等工程並常有大單銅鐵螺絲角鐵鋼板鐵板等料躉賣加以本公司置有大石澳六所旱排二座以便大小船艦入澳之用洵鉅製也

諸君光顧凡有船隻裝修無論大小工程莫不應期完備庶不妄費時日又且工精料美價亦相宜如蒙惠顧請問總司理人 R. M. DYER可也

茲將各澳地址尺寸開列於後

| 澳名 | 澳底長 | 澳口闊 | 水深 |
|---|---|---|---|
| 九龍第一號澳 | 七百尺 | 面八十六尺 底七十尺 | 三十尺 |
| 九龍第二號澳 | 三百七十二尺 | 七十四尺 | 十八尺六寸 |
| 九龍第三號澳 | 二百六十四尺 | 四十九尺三寸 | 十四尺 |
| 九龍第一號旱排 | 二百四十尺 | 六十尺 | 十四尺 |
| 九龍第二號旱排 | 二百二十尺 | 六十尺 | 十二尺 |
| 深水浦澳 | 四百六十六尺 | 八十五尺六寸 | 二十尺 |
| 香港仔第一號澳 | 四百三十尺 | 八十四尺 | 二十三尺 |
| 香港仔第二號澳 | 三百三十三尺 | 六十四尺 | 十六尺 |

本公司通電處乃用 MANIFESTO HONGKONG
香港寫字樓電話第二十號
本廠寫字樓電話第十三號K
呂宋代理處 FINDLAY & CO., MANILA, P. I.

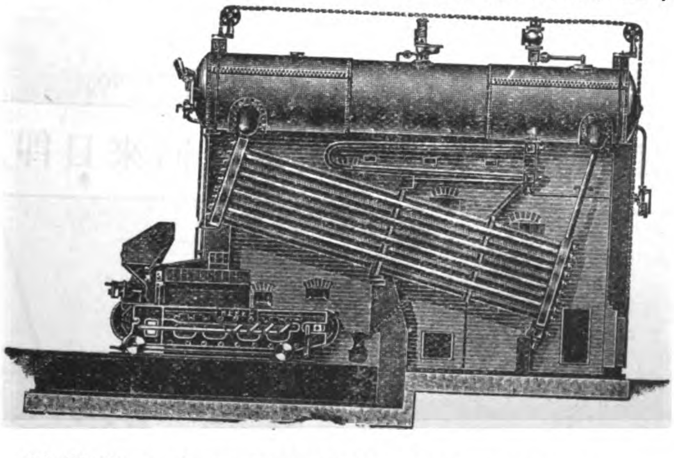
## 拔柏葛魏闍司有限公司

Babcock & Wilcox, Ltd.

## 製造特別水筒鍋鑪

此項鍋爐曾經置用或經定購者計陸地所用共有
一千一百萬四馬力輪船軍艦所用共有二百五十萬四馬力

本公司陸地所用之鍋爐與加增熱力機器及最新自行燃煤之帶鍊機器保屬相連用之於電燈紡織麵粉造紙織呢兵工造幣礦務水泥自來水等廠最為合宜



此係陸地所用水筒鍋爐加增熱力機器及
最新自行燃煤之帶鍊機器相連圖樣

本公司專造加增熱力機器自行燃煤之帶鍊機器蓄熱機器電力起重機器起卸煤之機器鋼質烟囪及輪船軍艦所用之鍋爐等

公司之中國總辦事處在上海四川路一百零三號

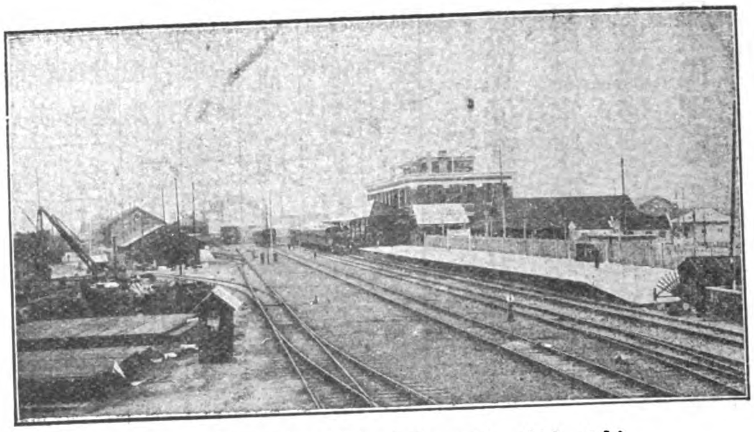
製造廠設在英德法美等國

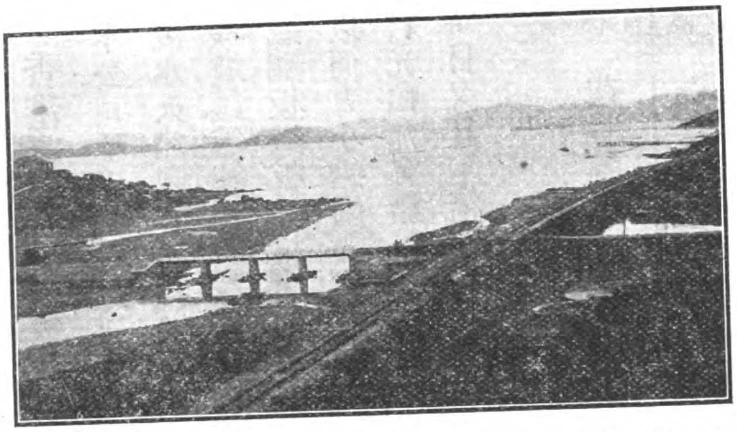
# 廣九鐵路

Canton-Kowloon Railway

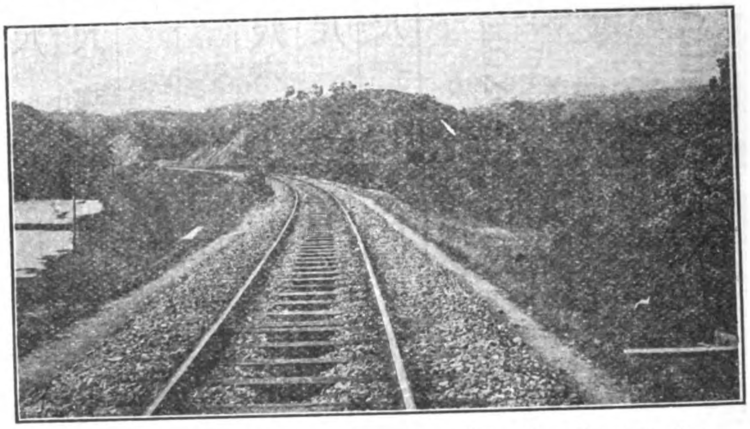
下列乃華段圖景該段八十九英里

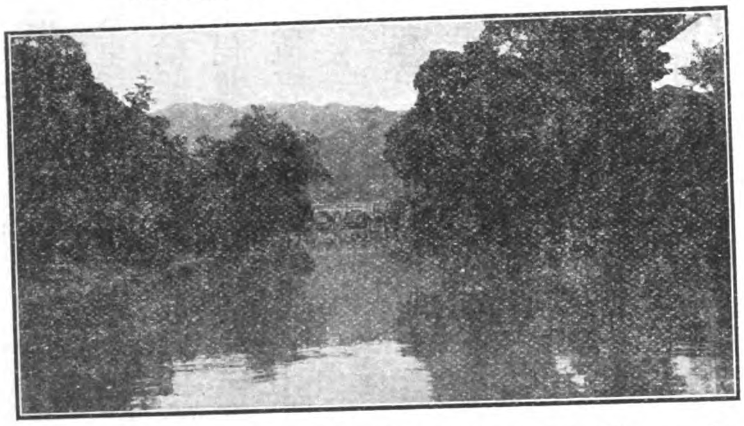
下列乃英段圖景該段二十二英里



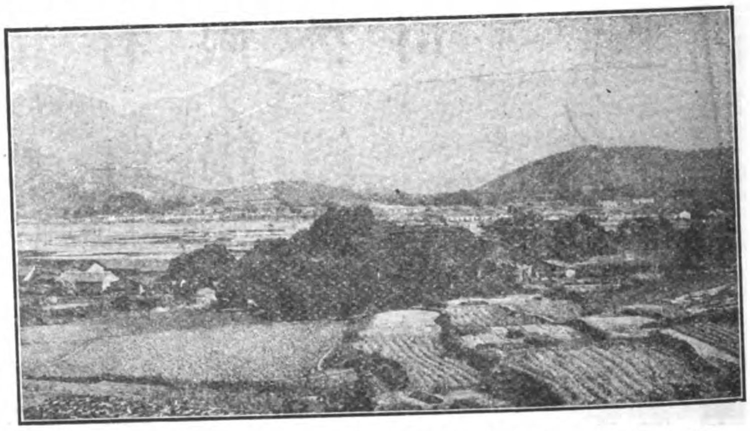


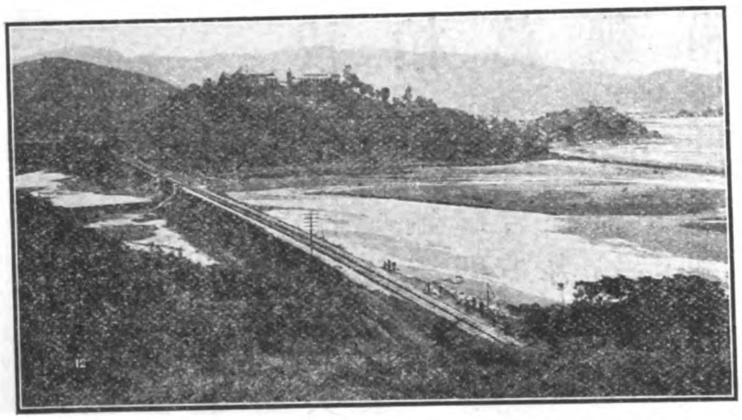
廣州香港間最捷最廉之路線兼所經各處之景緻



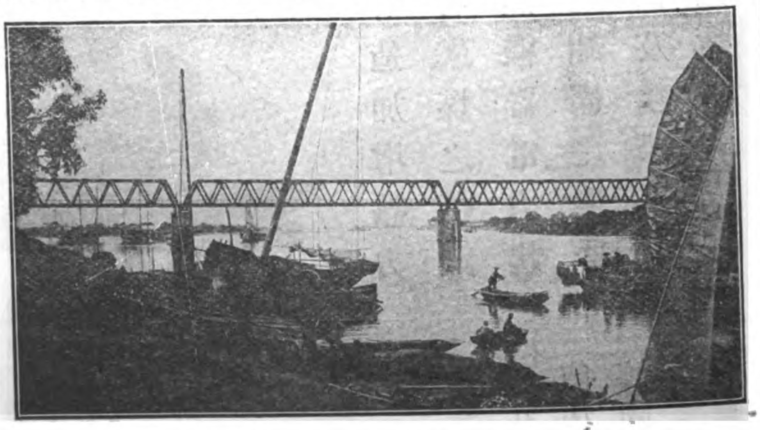


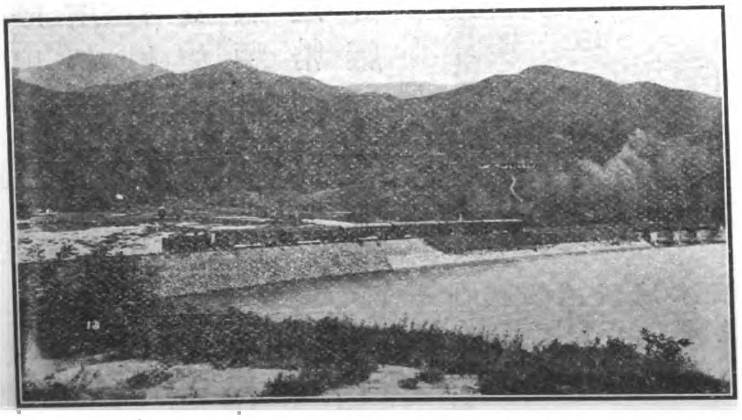
每日省港有直通快車貳次來往並有西膳茶點以備搭客不時之需





富商遊客搭快車可即日來回在港在省各有四點餘鐘之久儘可從容專辦





謹將本年夏天時刻表開列於下

香港開
上午六點三十五分快車
上午十一點十五分
上午十二點五十五分

廣東到
上午十點四十分快車
下午六點十分
上午四點三十分快車

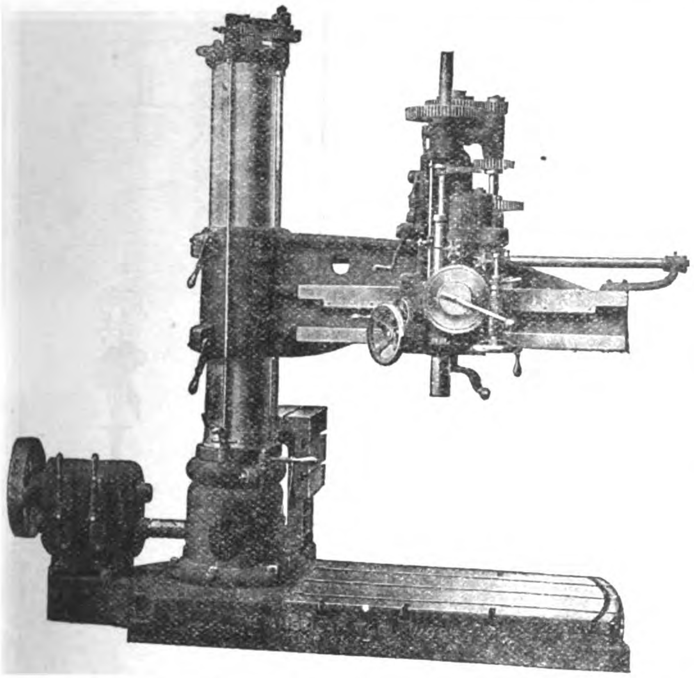
廣東開
下午七點快車
上午八點三十分
上午十二點快車
下午四點三十分快車

香港到
上午十點三十分快車
下午四點十四分
下午三點五十二分快車
下午七點五十二分快車

並備有專車租賃車費從廉如欲知詳細者請看告白或問省城及香港鐵路總局可也

# 美國機器公司

The American Tool Works



本公司專製各式車牀轉牀鉋床等久爲全球所推許無煩贅述近又新發明一種**阿美利加距半徑轉牀**其靈活便利較從前各種機牀有過之無不及且**質料堅固製造精良**以之裝配各物**分量甚準**無絲毫之錯亂可爲機器界中別出心裁最有價值之品其形式大小不一有二尺二尺半三尺三尺半四尺五尺六尺七尺不等或用皮帶或用馬帶均可應用若欲樣本請來函至本公司取閱可也

**總發行所美國哇哈華省新新納搭城**

# 愛鍊純鋼廠

在英國希斐爾特地方

## 鹿牌鋼

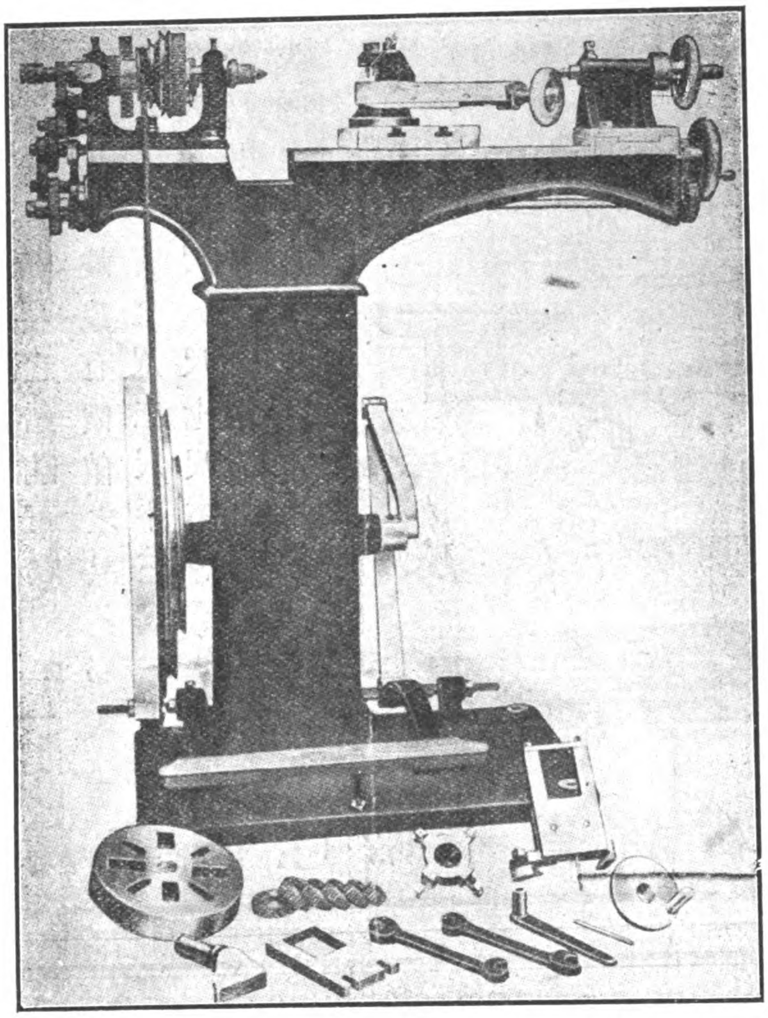
本廠專鍊各種各式尺寸鋼料爲寰球各製造局造幣廠礦務局機器廠打鐵廠等處所用並造超等鎗管鎗彈吸鐵鋼風硬器具快鋼彈簧鋼兼造銼刀快絞絲鑽鋸錘鋼條鋼片汽車特別鋼料錳質碎石鋼鐵路及電車分路叉橫軌等以及碎礦鋼料並造彈球管子水堀機器一應俱全

賜顧者請臨上海二馬路外灘B字一號接洽或函致亦可

獨家經理上海漢口泰來洋行白

Edgar Allen & Co., Ltd., Sheffield, England.

# 怡和洋行機器房廣告



本行分設滬濱數十餘載專辦各種機器如下　鐵軌　車輪　車頭　紡織機　磨麪機　搾油機　碾米機　磚瓦　鋸木牀　造紙機　印書機　鎗礮　製革機　電燈　餅乾　火力引擎　煤氣引擎　火油引擎　鍋爐　發電機　開礦吸水機及馬達引擎等並常備現貨如下

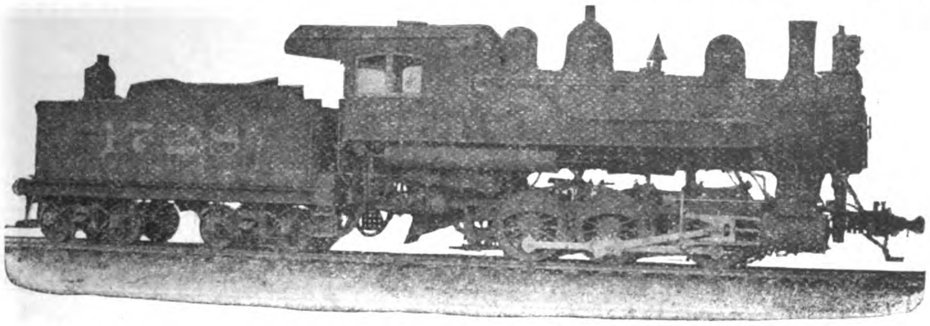
火力引擎　煤氣引擎　立式鍋爐　吸水機　手搖吸水機　大小車床　修機應用各件　淨茶機紙百　配更　皮帶等其餘一切零件不及詳載倘蒙賜顧無不歡迎定價亦格外克己請至圓明園路本帳房接洽電話一零九六

Jardine, Matheson & Co.

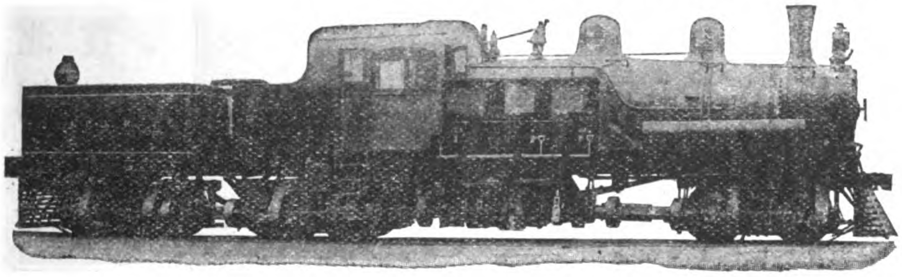
# 賚瑪火車公司

Lima Locomotive Corporation

本公司專造各種火車頭式樣玲瓏質料堅固或用橫桿式或用齒輪式務求輕便靈捷至速率及拖重力尤非尋常者所可比擬



此圖爲本公司代美國南部鐵路所造之十五輛二十寸暨二十六寸轉轍式之火車圖樣



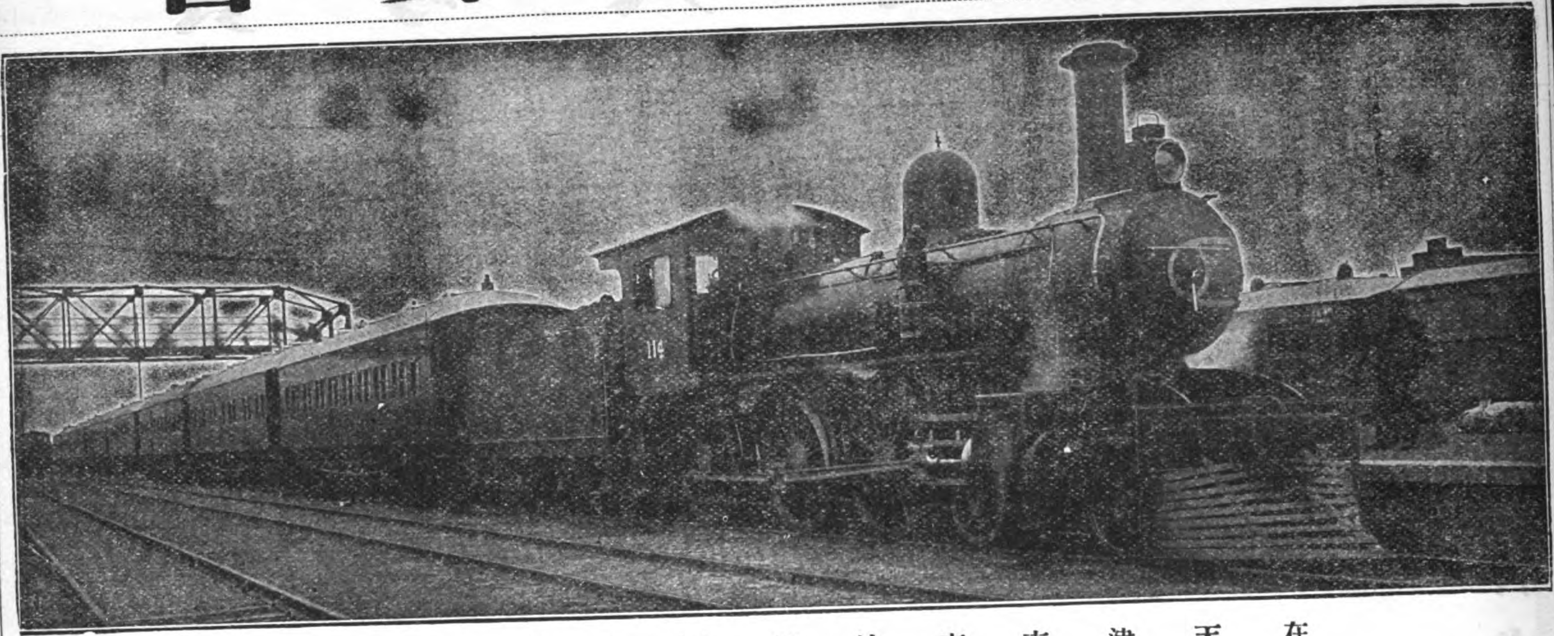
此圖爲本公司代中國京張鐵路所造三輛齒輪式一百噸重之火車圖樣

製造火車不獨求其堅固而且取其靈活本公司各種出品久爲東西各國所推許近年更大加擴張所聘工師均爲歐美著名專家所用機器亦均係新式以故所造各種車頭既能堅固復靈活而穩妥不惟於康莊平坦之大軌道能行止自如即以行駛於山嶺曲徑之小軌道亦能旋轉如意且特製齒輪式之拖重車其重力能拖十噸至一百五十噸其餘花樣繁多均載B字樣本中欲閱者來函索取當即寄奉

總發行美國哇亥俄省賚瑪城

分售處中國 香港 上海 廣東 天津 新旗昌洋行

# 京奉鐵路廣告



在天津東車站停放之床位通車

啓者本路路綫係與附近各路互相聯絡東則接連南滿路路可達歐洲南則接連京漢路可達長江一帶商埠由京漢路中心點幷可達至正太路之太原府道清路之開封府汴洛路之河南府北則與京張路綫相連可達至萬里長城四面貫通無遠弗屆本路綫所經名勝如北京

北京車站

通車頭等睡房

瀋陽之皇陵殿宇天津之北方商務總匯唐山之工廠礦務山海關之萬里長城牛莊之南滿洲商埠俱屬繁盛之區足供遊覽至京瀋直達通車每星期來往一次備有飯車睡房精潔適意以便行旅而廣招徠倘蒙
光顧毋任歡迎之至特此佈告

Chinese Government Railways of North China

# 美國紐約克美孚油行廣告

The Standard Oil Company of New York

本行所出之**鎖可聶瀝青油**爲生瀝青油由格致術所製成如欲引長其效用黏合其物質柔固其原料以及天氣溫熱度之容納無不隨心所願

**鎖可聶瀝青油**可用於任何堅硬之物不加他種之油亦合於用

下列之各處均可用此**鎖可聶瀝青油**

建築永久之道路　屋頂水路工廠地板拍球圓場　水滴管洞

用於鐵路車結處電桿電柱等處　包鋼質建築物及溝管等物

**鎖可聶瀝青油**可用於法侖表熱二百二十一度之融點故於最熱之天氣亦合用適度也**鎖可聶瀝青油**非試用之物乃合衆國多年實用之油功效最著之物品也

欲知詳細請函達上海五馬路十一十二號

美國鈕約克美孚油行光油部可也

# 克老犿德律風器俱供應公司廣告

Kellogg Switchboard & Supply Co. Kellogg system.

克老犿公司所出之各種德律風器俱為世界最完備最高上之供應公司其出品為他公司所不及者最大之電池即用多轉轍板故於各處均合時宜如工部局小鄉鎮旅館醫院鐵路礦務處工廠以及輕便手攜之德律風無不各處通行且克老犿德律風之筒能永久不壞因筒之內外非錫所包乃銅質所製以最上等之橡皮鑲嵌而成又以壓機壓實故使傳話者聽話者均聲浪清細無異面談也三十二號愛字聽筒及三十六寸電絨毛繩售價英金六仙令若欲知詳細者請來函索取本公司之器俱樣本為荷

**公司開設美國**

舊金山
支加哥
甘色斯

# 勒克洛炸藥

又名勃辣司丁泡特係**開山開礦用最大爆力之炸藥**其質共有二類一硬質一流質兩種未參合時分裝二處決無炸裂之患并無須多費存放在火藥棧倉內祇置放乾爽地方不論何處均極相宜此藥參合後**較之別種炸藥更為穩當**藥粉裝法用一布捲筒對徑六分或至二寸長六寸半或至八寸為度即可應用製造廠林洛泡特公司在美國紐約華爾街一百零六號

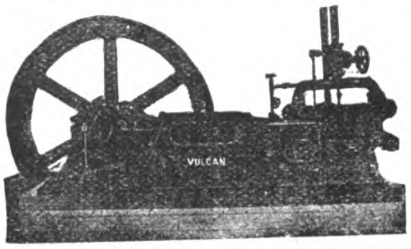
Rendrock Powder Co.

美國舊金山

# 瓦爾根製冰機器廠

Vulcan Iron Works

圖為製冰機之一種



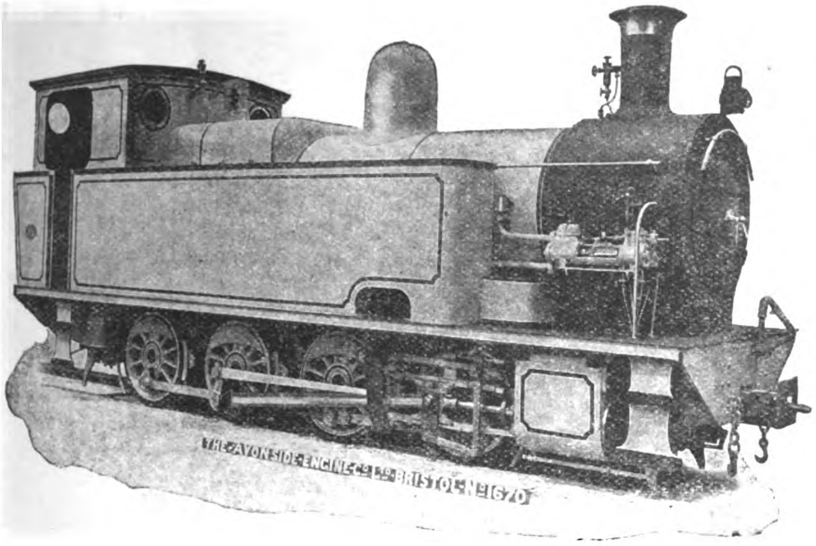
花色繁多不及備載

**本廠專造各式製冰機器運銷各地蒙購辦諸君謬加推譽稱為靈便合用本廠自當精益求精以期仰副　雅意現在製備各種新式機器或大或小花樣俱全如欲取閱樣本函索即奉特此佈告**

電碼　"Vulcan" San Francisco

# 愛望賽機器公司廣告

AVONSIDE ENGINE Co., LTD.




本公司專造汽機及引火之各種火車汽機
本公司開設英國百立司篤耳
電報用英字請看英文告白

# Roofing Malthoid

麻鐸屋頂氈已為上等工程師及繪圖師詳說之且為上等工匠用在遠東一切奇異房屋之中
麻鐸屋頂氈已試用多次實可認為屋頂氈之標準
安置此項氈時須照本公司章程鋪釘方保無虞
如要說明書及樣子請向最近之代理店取閱可也

中國代理處

上海　怡泰洋行
天津　仁記洋行
漢口　太平洋行
香港廣東　瑞記洋行

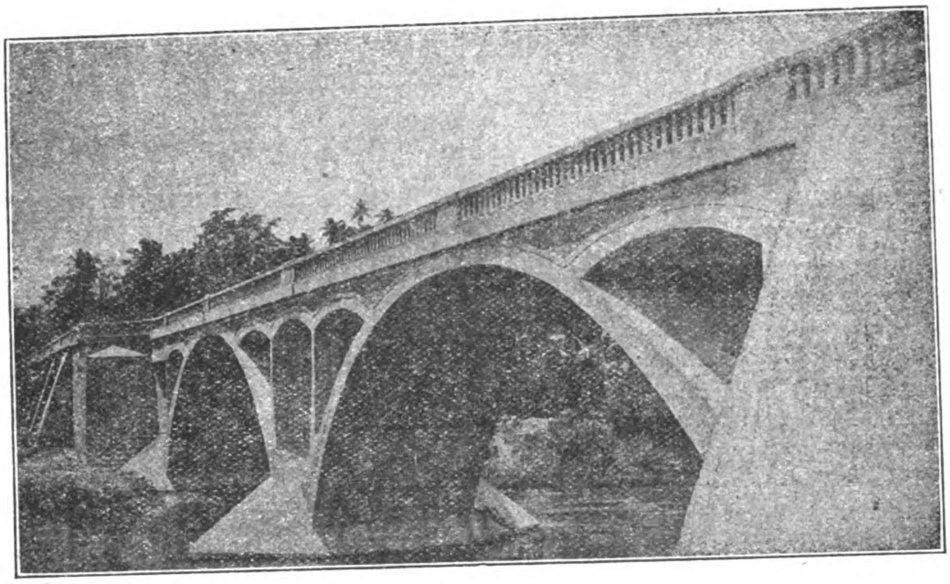
# 青洲英泥

Green Island Cement Company, Ltd.

燒青泥磚

大小明暗瓦溝

水斗等器



花階磚

大階磚

火爐磚及泥

亞路卑扒拉波歷握橋用二千五百桶青洲英泥而建成

代理分銷處

架剌吉打 端拿摩利臣公司

新加坡 士滔片民

長口及漢口壹帶渣甸洋行

仰光 希活

孟米 士片拿公司

庇能 列公司

中國海岸及臺灣渣甸洋行

本行在別埠代理處

上海支行

日本支行

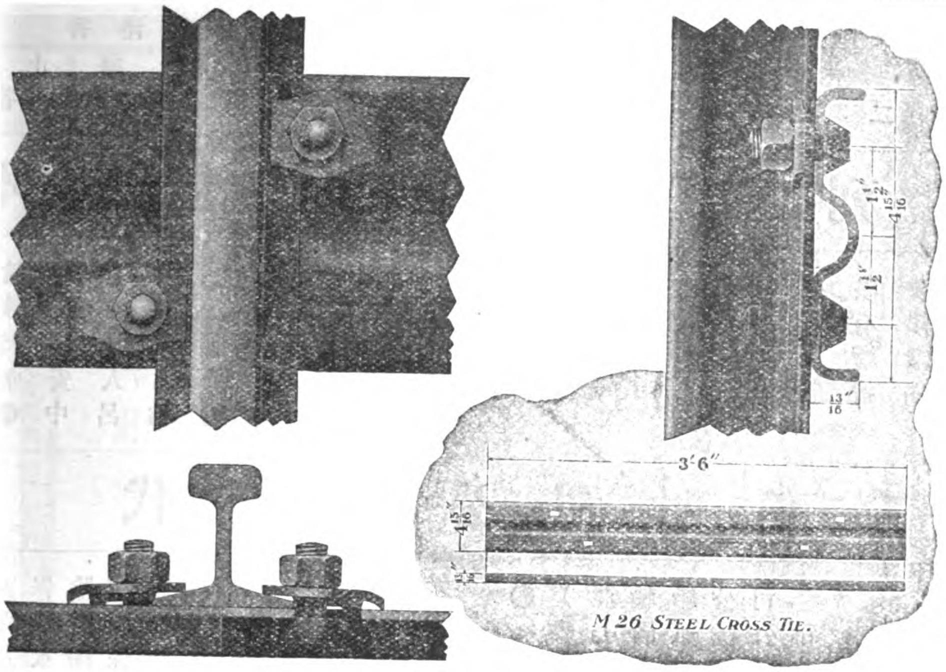
天津支行

非律賓羣島全權代辦人小呂宋威廉晏打臣公司

# 美國鋼鐵公司

上海江西路廿四號A

電碼 Steelyard Shanghai




此圖表明本公司所造各種鐵軌及繫結鋼條輕便而且堅固

鋼鐵各物取其堅固尤取其靈活非徒以笨重爲可貴也本公司所造各種鐵道及機器等件幷鍋爐上應用之各式繫結鋼條既稱堅固復能靈活久爲全球所推許玆將自製鋼鐵諸品節錄於左

鐵軌 接軌鋼條 鋼節 鋼釘
鋼板 建築所用鐵柱 鐵條
鐵板 鐵管 各式角板 火車電車車輪 鑛穴中或油井內所用一切鋼鐵機器 各式輪軸
橋梗鎔鐵爐以及各種鐵甲板

以上所述特其大略其餘名目繁多不及備載 惠顧諸君請移玉至本公司面議可也

United States Steel Products Company

# 新旗昌洋行

本行佈設英京神戶廣州香港上海天津紐約等處專辦出入口貨代理船務及抽佣經理人

香港書信箱號數第壹百三十一號卑字
上海郵政局信箱第八十四號
各枝行掛號電報碼用旗昌二字

## 本行總司理各公司列下

● 非律賓輪船有限公司
● 維新織造有限公司
● 廣州省城置地有限公司
● 永安人壽保險有限公司
● 中呂輪船有限公司
● 勢力電燈有限公司
● 青洲英坭有限公司
● 香港麻纜織造有限公司
● 均益按揭有限公司

## 代理各公司列下

● 厘拉仁士洋面保險有限公司
● 大洋海面保險有限公司
● 泗水海及火燭保險有限公司
● 英北及商務保險公司
● 羅天仁保險有限公司
● 煜舍燕梳有限公司
● 北美燕梳公司
● 上洋軟葉及紙料有限公司
● 美亞輪船公司
● 美滿航務公司
● 祁連航務有限公司
● 香港電車有限公司
● 楊子燕梳有限公司
● 地球洋面保險有限公司
● 大洋意外保險有限公司

## 上海英商新旗昌洋行機器處廣告

本行樓子房現設江西路六號電話三四八七號

本行經理各種機器如紡織碾米榨油磨麵造紙開礦墾荒抽水挖坭大小火輪全副引擎鍋爐及火車頭客車貨車鐵路材料並自來水一切物件其餘鋸木車鑽刨床各式大小引擎鍋爐及磨電機發動機煤氣引擎發煤氣機以及得律風電燈電氣應用一切另件等具色色俱全均係外洋著名廠家特別精造新式玲瓏堅固但各項名目繁多未便盡載倘承賜顧或蒙函詢當即竭誠詳細奉答價亦格外克己以廣招徠尚祈惠臨方知言之不虛也

## 在中國全權代表各公司列下

滅隨路城火車工廠
澳地士依里威滔公司
波路深孖汽喉公司
拋亞瓦斯合股有限公司
拋亞不厘有限公司
李孖普鐵廠
倫深未禪及制花利有限公司
盧爹士麼滔有限公司
船主琴實使順有限公司
所利雲機器公司
爲拉列地有限公司
華臣製造公司
和蛙連毛滔工廠

裝鐵路燈工廠
壓活公司
占士科士打有限公司
占士提邊士公司
立可父子公司
可夫文製造公司
贊鶴建臣父子有限公司
耳昔則臣父子有限公司
精建兄弟有限公司
奇布尼及則給士製造公司
廉孖車頭及機器公司
文專麥士謂及摩公司
妙千斤壓不歷其滔公司

美國布魯亞公司
美國鋼線公司
大英靴路士比電線纜有限公司
班尼士製造公司
比厘路公司
表花盧不歷鞭公司
表花盧士派士厘公司
布律端父子公司
插父子鎖鑰與銀箱有限公司
地吐律滔路公司
的有限公司
贊的建臣公司
胡路扶公司

Shewan, Tomes & Company

# 美國鋼鐵公司

United States Steel Products Co.

本公司自剏設以來歷有年所所售各種鋼鐵品久蒙交口稱譽無煩瑣述惟近來實業發達各物之需用鋼鐵者或大或小品類甚夥苟祗備其重大者而將各式細小者付之缺如則必不能應購者之用本公司花樣繁多大而至於軌輪機軸小而至於日用雜物之微凡屬鋼鐵品無不色色俱全以備貴客隨意購用至貨物之精良價目之低廉尤爲得未曾有賜顧者幸垂鑒焉此佈

## 鋼鐵軌

自最重之火車軌至各種輕便鐵道及開礦運木或電車等所用

## 建築品

鋼節鐵槽角鐵鐵鍋鋼板鐵板礦中或油井內所用鋼鐵物件以及各種車輪

## 輪軸

火車汽機及電車等所用

## 翻沙機

機器及各種附屬品

## 鐵箍及鐵皮

用以箍桶束棉花捆羊毛或皮包等物

## 鋼板

用以造船造汽鍋水鍋等件者

## 馬口鐵

可製各式雜用物或鍋爐等件

其餘如馬脚鐵鋼絲生鐵硬煤煙煤等名目繁多不及備載

上海江西路二十四號A　電碼 "Steelyard" Shanghai

# 美國派愛而車頭電燈公司告白

Pyle-National Electric Headlight Co.

## 下圖表明用二萬二千支光派愛而車頭電燈之功用

此圖的係攝自美國鐵路車站其攝影之地點相去

車頭有半英里之遙足徵派愛而燈之功用非小

派愛而燈能發有力明亮之光可使車頭司機者之視線能達半里之外且使其能瞭視一切可避危機派愛而燈之功用上已略言之矣總之人咸樂用此種燈因知其無美不臻也

# 西方電氣公司廣告

The Western Electric Co.

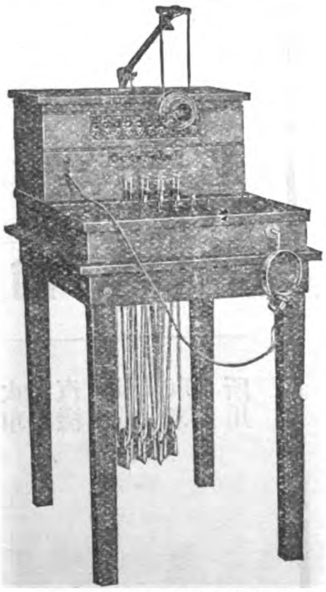
第一三一七號磁氣發電機德律風

"SAVE TIME AND FREIGHT"
WESTERN ELECTRIC COMPANY
"TELEPHONE OUR NEAREST HOUSE"

若欲研究貴處德律風機器是否傳聲清淅必須先看所用之各種器俱有否　活司得商標之牌號是否爲本公司所完全製造者本公司所製電氣器俱完美可靠全球馳名且爲世界最老最大之製造各種電氣器俱之製造廠

且德律各種機件亦爲本公司製造物品之一小自私家之德律風起大而至大城內全體之德律風如配電石板裝德律風家所用之配件防護俱線纜線件手器隔電俱等物件

中國經理處上海瑞記洋行
小呂宋經理處愛令加格令加洋行
日本經理東京日本電氣公司



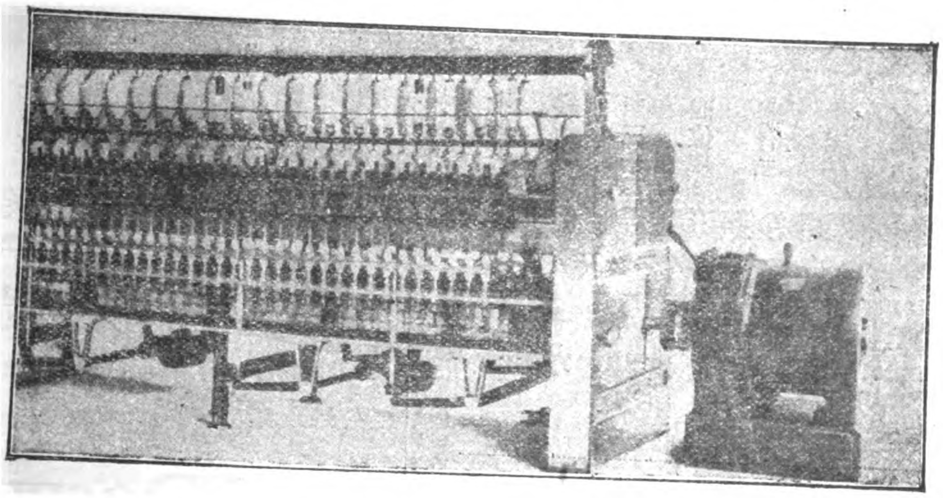
第一八〇〇號分段配電石板

EVERY "BELL" TELEPHONE IS A WESTERN ELECTRIC TELEPHONE

上海西門子電汽廠製造各項電料總公司在上海仁記路B字一號凡青島漢口天津北京香港廣州等處皆有分行且各處皆有高等工程師以備　賜顧諸君垂詢一切本公司所代表之各大公司如下

倫敦司脫福特之西門子兄弟電機製造廠
倫敦和而或區之西門子兄弟公司
柏林拿能騰之西門子考而司克公司
柏林立香別爵之旗勃路達西門子公司
柏林奴歐別爵之西門子盧荷浮•克公司

Siemens China Electrical Engineering Co.



本公司之華吞燈係世界上最光明最省電之燈本公司之泊老套電汽車用軋沙林或電汽運動此圖係三面形交流電機與引擎直接奉天吉林蘇州灤州及青島等處皆由西門子裝置此項電機

各項電機之圖畫及價單如蒙
賜顧卽可送呈

本公司製造各項電燈大力牽引各機件以及邦波轉滾起重各電機查律水汀拖朋得力風電報及透骨電光機啞重氣機海底線炭絲燈蓄電池電汽車軋沙林汽車等俱備

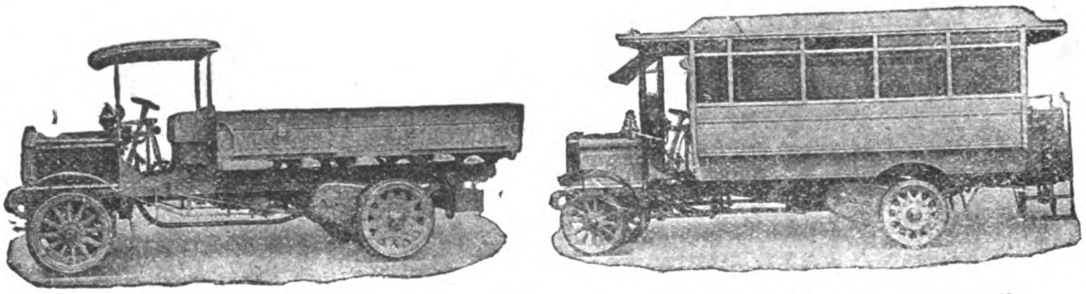
# 英國康模造車公司

Commercial Cars, Ltd., Luton, England

格言曰觀運輸機關之隆替足覘以國家之盛衰本公司專造工藝界及公家所用車輛工料堅實精良無比取價低廉如貨車灑水車救火車客車等均可按式定造必能合意所裝油機燃燒煤油或汽油在東方應用最為便適本公司總廠在英國勒頓城內英國康模造車公司謹啟

康模牌 車輛

"COMMER" CAR. REGD TRADE MARK.



此種車輛裝有汽油機大小分為十四號載重一噸至七噸載客十位至三十四位機器有二十至一百馬力

# 赫司耳電廠廣告

Hasler Telegraph Works.

本公司開設倫敦維多利亞街第二十六號專造最上等機關行程速率表及記錄表若欲購置者請函達訂購可也

# 勒特烏文公司

Owen Bros.

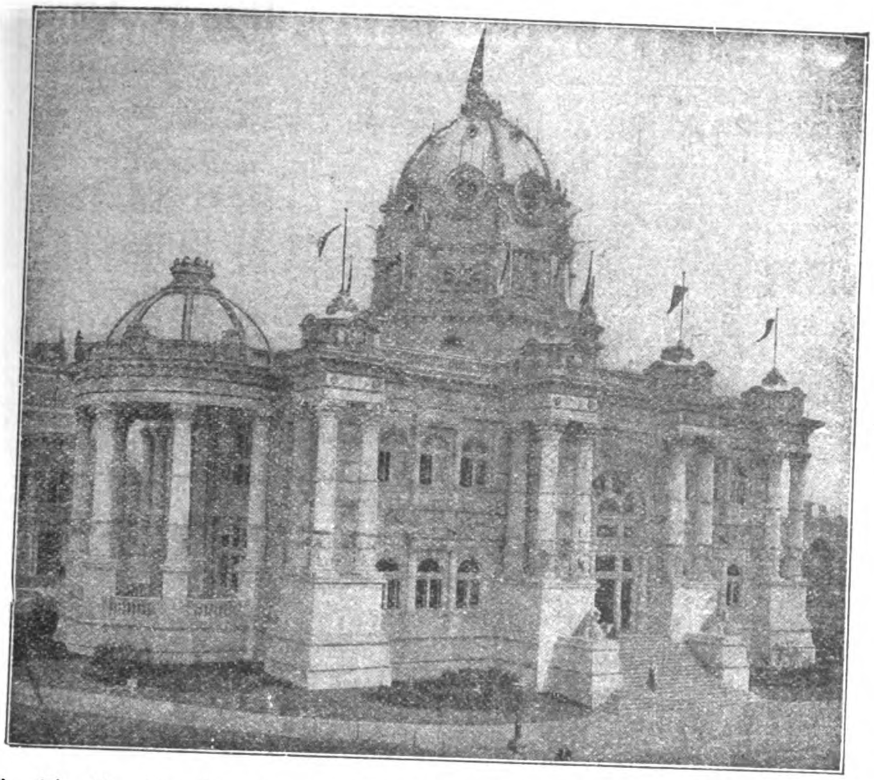
"ROSPHALTIC" REGD. NO. 336682

羅司法鐵漆敷於鋼絲鐵柱之上能永免鐵銹濕氣電氣均不能侵入天氣寒暑隨鐵漲縮此油質地純淨永保無患

勒特烏文公司

總行在英國黑耳城

上海怡和洋行總理



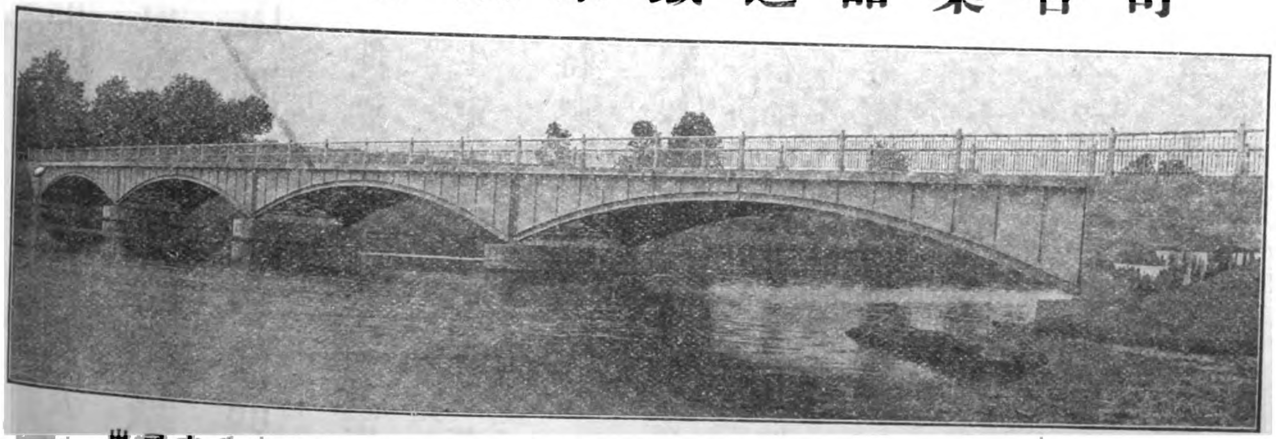
此爲巴蘭夢羅和平宮其工程之堅固久爲世界所稱譽然建築時需用鋼鐵至四百餘噸之鉅皆本公司所供給特攝之以供賞鑒

# 美國鋼鐵公司

經理處　上海江西路二十四號

電碼　"Steelyard." Shanghai

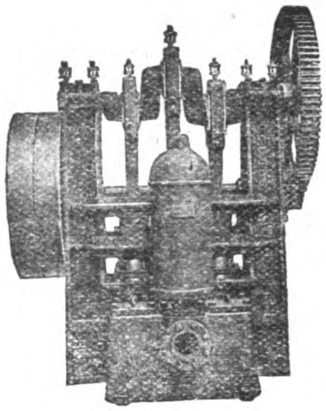
本公司專辦各種建築鋼鐵品並包造鐵橋鐵房自來水煤氣塔及各種鐵管等物無不全備



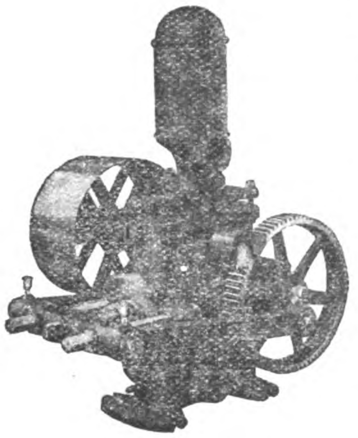
此爲美國牛查西省克那基湖哈爾門橋橋共四彎每距九百二十四寸約重二十七萬一千餘噸計用鋼鐵甚夥均屬本公司之出品

United States Steel Products Company

# 美國顧爾機器廠



本廠開設已久爲中外各國所馳名專造各種大小抽水幫浦其三角抽水機爲尋常各廠家所最爲合用之機尚有如保險公司所用最爲靈巧便利之轉動抽水機此項機器甚爲輕便備爲消防之用尤爲合宜故凡保險公司俱有備置因其得輕便之利也其餘如自來水廠船廠各機器廠並礦井內外所應用之大小各式抽水機器無不俱全本廠係專造各項抽水幫浦故比他家式樣更多製造尤爲完善凡中外各國之賜顧者悉知本廠機件之精良造具之美備也欲知詳細情形請移玉至本行接洽可也



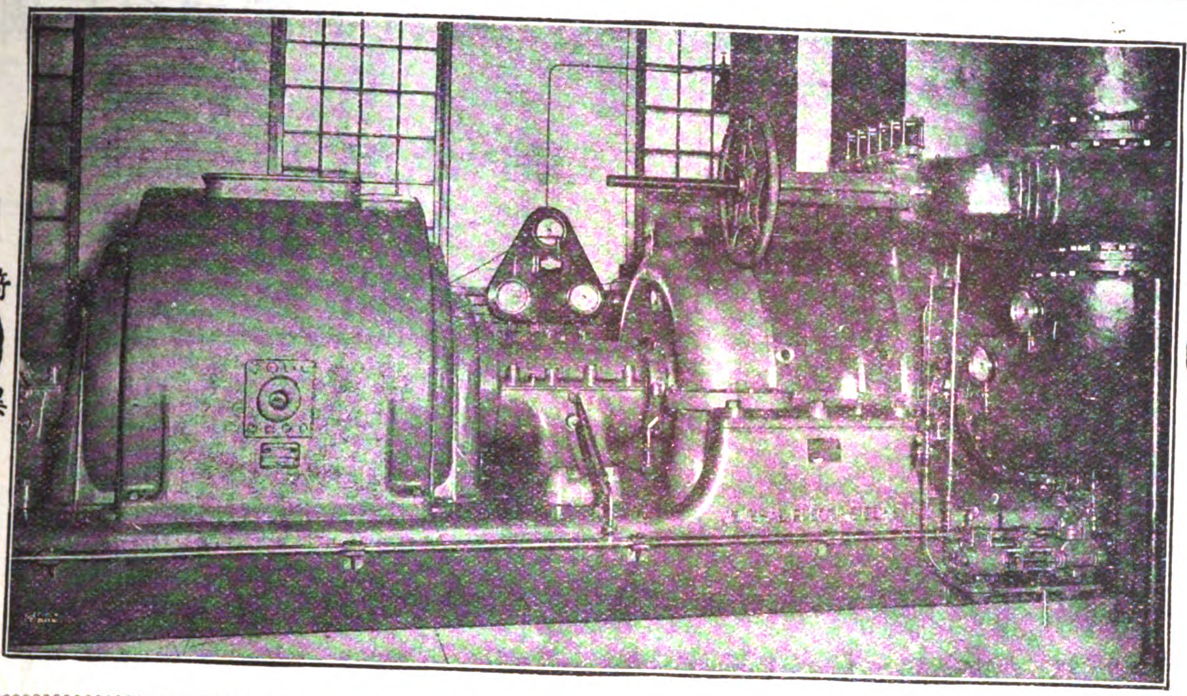
**中國經售處上海圓明園路四號協隆慎昌洋行**

The Goulds Manufacturing Co.

本行設立已久遐邇馳名專辦歐美各國名廠各種機器所有**電燈全廠機器**及**各項電機電話火車鐵路鋼軸鋼鐵各軌各式車牀刨床測量繪圖儀器**並**各種汽油機器**等件無不俱全所有本行經理之 美國愛特生電汽總公司 英國湯浦電機公司 浦特製造火車公司 漢司火車燈公司 施端林電話公司 范汽油行船機器廠 右孚亞士工程儀器廠 鄧特摩阿車刨機器廠 馬士維爾石棉廠等均係環球著名各大廠中外馳名凡賜顧者均知各名廠機器之完善美備也 諸君欲知詳細請移玉至 **上海圓明園路四號**

**中國經售處上海協隆慎昌洋行**

Anderson, Meyer & Co.




奇異商標

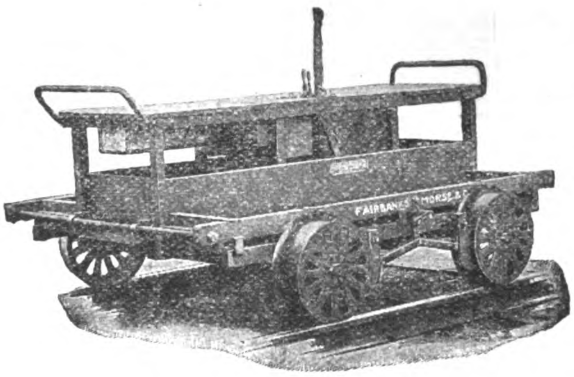
美國紐約**普通**又名**奇異電汽總公司**爲環球獨步世界第一之電汽製造廠與英國著名**湯輔公司**係屬聯號性質近年新發明一種**透頻汽機**　係與磨電機直接相連而用便利異常且自七啓羅滑脫推至二萬啓羅滑脫其汽機之工料無不堅固精良而用煤亦省使用極靈即裝置機件亦能省佔地位誠現今電廠**惟一無二之電機也**此機發明後各國爭相購用僉謂較舊式之電機其使用之利鈍相去殆不可以道里計**又新造一種光明省電之曼士達拉絲燈泡**　此燈泡乃本廠獨家創造係以數十年之電學經驗參照美國國家頒定規程研究製造而成故質地既極精良燃點尤能經久發行以後風行全球因其能省電力而光線之足備反出各種新式電燈之上因之銷路日廣愈推愈遠洵爲**電燈泡中之魁首**又**奇異商標各種電氣風扇**省電多風用久無炙手諸患可免一切危險**又電話機器**式樣玲瓏裝置簡便內地躉購且可代爲裝置餘如各種電燈全廠電機家常裝用之電汽器具並礦機鑽石機升降起重各機轉滾提鍊電機傳電器電汽船大小各廠應用之電機幫浦潔淨機貯水所發電機避電測電等機泉水發光機以及各種海陸軍用電光照遠燈電扇轉動等機凡屬於電汽各項大小機件及各樣附屬之件無不完全齊備　賜顧諸君欲知詳細請　駕臨**上海圓明園路**四號本行寫字間接洽無任歡迎此佈

**中國經理處上海慎昌洋行**

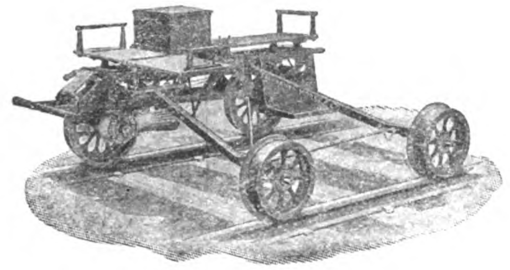
General Electric Company

# 美國反白司鐵道汽車

站工監督修路工頭及扯號旗
人所用
該車造法極爲
簡便用法甚易
穩而且快
如用載客及載
官場此車式樣
甚多大小不一
請查目錄 第九百五十六目頭 FY



# 鐵道材料



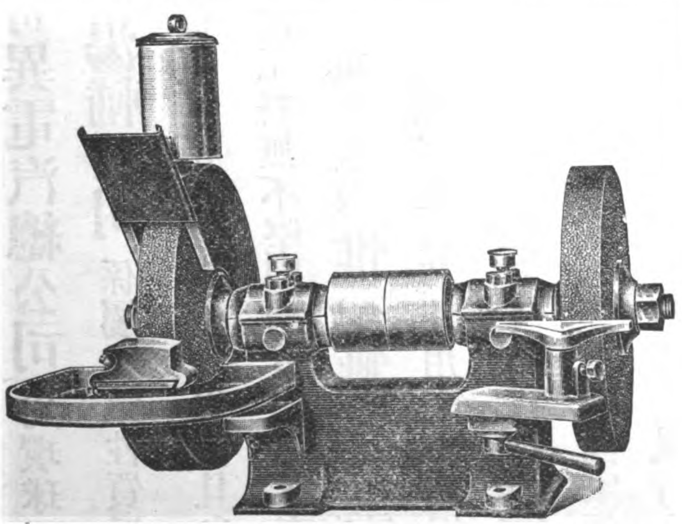
油引擎汽力及電
力抽水器電燈器
運卸煤斤機器轉
盤及吊橋機器手
車推車及一切應
用材料無不完備
請查目錄 第九百五十六目頭 GB

中國經理處 上海信亨機器公司 香港天祥洋行

Fairbanks-Morse Railway Motor Cars

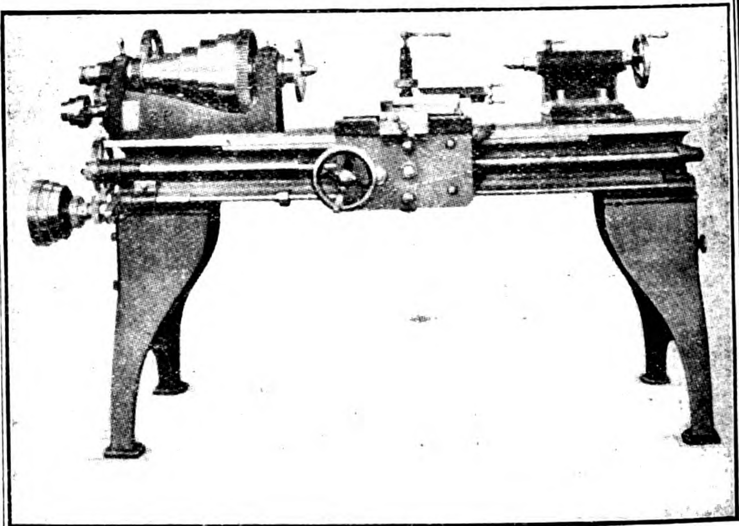
# 倫敦愛茂來工廠有限公司廣告

The London Emery Works Co., Ltd.



此圖爲雙頭愛茂來樣式
磨機其全體均爲生鐵所
製軟鋼磨心直徑一寸其
軸枕均爲白色金屬類磨
心傍有緊鬆之滑車排於
左者可磨潮濕之物因配
有水槽碗架蓋頭及墜俱
右邊則配有普通磨件倘
有最好質地之地球牌愛
茂來輪盤兩俱大十二吋
厚一吋半
此項磨機亦可大十四吋
厚二吋及大十六吋厚二
吋之輪盤
若欲知圖樣或說明書可
來函索取
工廠開設英京倫敦土丁
南英雄工廠

# 用電氣以節寶耗



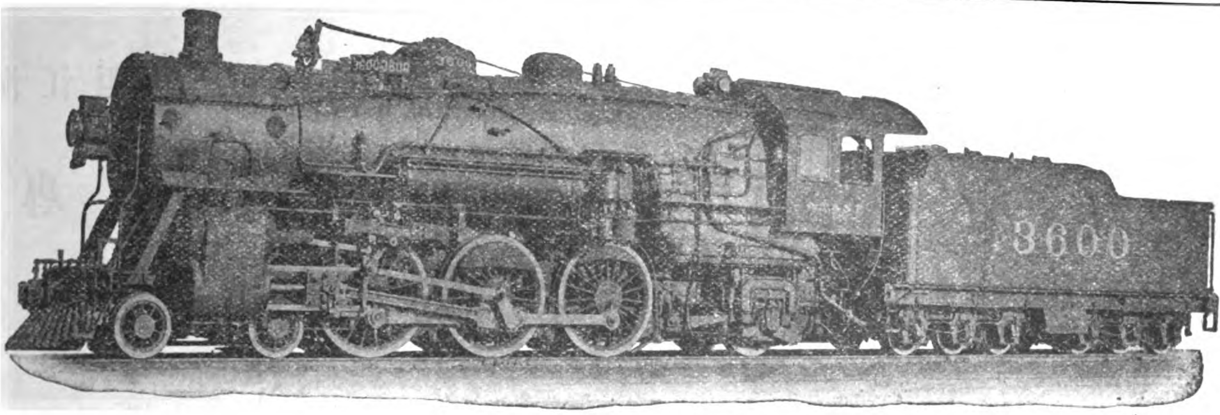
電氣一物利用
甚溥用以裝修
各項機器非特
工作較人力爲
速而耗費亦可
節省因其出貨
多而成事易也
凡各機器廠欲
裝置電氣馬托
或鑽頭磨刀機
無論活動與否
均可使之流利
活潑所需電力
或交流或直流
及電鎊之多寡
均當隨意裝配
賜顧諸君幸垂
鑒焉

德國蜀赫廠啓

Schuchardt & Schütte

# 巴爾威機器車頭廠

The Baldwin Locomotive Works



愛克生討庇格散打非各鐵路之太平式車頭

美國搭客之快車中其大半皆有本廠之太平式(四—六—二)機器車頭所拖帶此項車頭機器能載重力拖帶重車因機器內包函之力足使速率按時增高也

汽筩長二十六吋闊二十六吋　主動輪直徑七十三吋

汽機壓力二百磅　火爐佔地六十六另十分之七方呎

熱水面積四千四百四十三方呎　加重熱水面積九百八十方呎

主動輪重十七萬二千五百五十磅　機器共重二十八萬八千七百磅　拖力四千一百磅

太平式之機器車頭爲愛克生討庇格散打非鐵路所有爲近世最新式之機器見上圖

此條鐵路爲乘客最多故車行之次數亦多辦法亦妥善

此車頭用油爐特意擴充其極大之力每邊之主動輪之重限五萬八千磅

此項機器已爲本廠帶往巴拿馬萬國賽會場之物件中之一

中國經理 上海 天津 香港 漢口 瑞記洋行

日本經理東京舍爾法辣薩有限公司

# 美國鋼鐵公司

上海江西路二十四號　電碼 'Steelyard' Shanghai

## 專運美國鐵管公司各種物品

並製各式銅鐵自來水自來火蒸汽等氣管

大小自八分之一至三十寸

隨意配合無不適用

## 汽鍋上應用之鋼管

質料或剛或柔式樣或大或小尺寸或長或短

各式井內所用管子

## 無縫煤氣管或煤油鐵管

其重量能抵三千七百磅壓力

用於各種大壓力煤氣空氣亞馬尼亞及炭氣等物最爲合宜

## 空心鐵柱

用以建築電車軌道電桿德律風桿及各種電氣柱枝

其外尚有各項工程應用之鋼鐵管子

及自來火自來水龍頭等件一應俱全

United States Steel Products Company

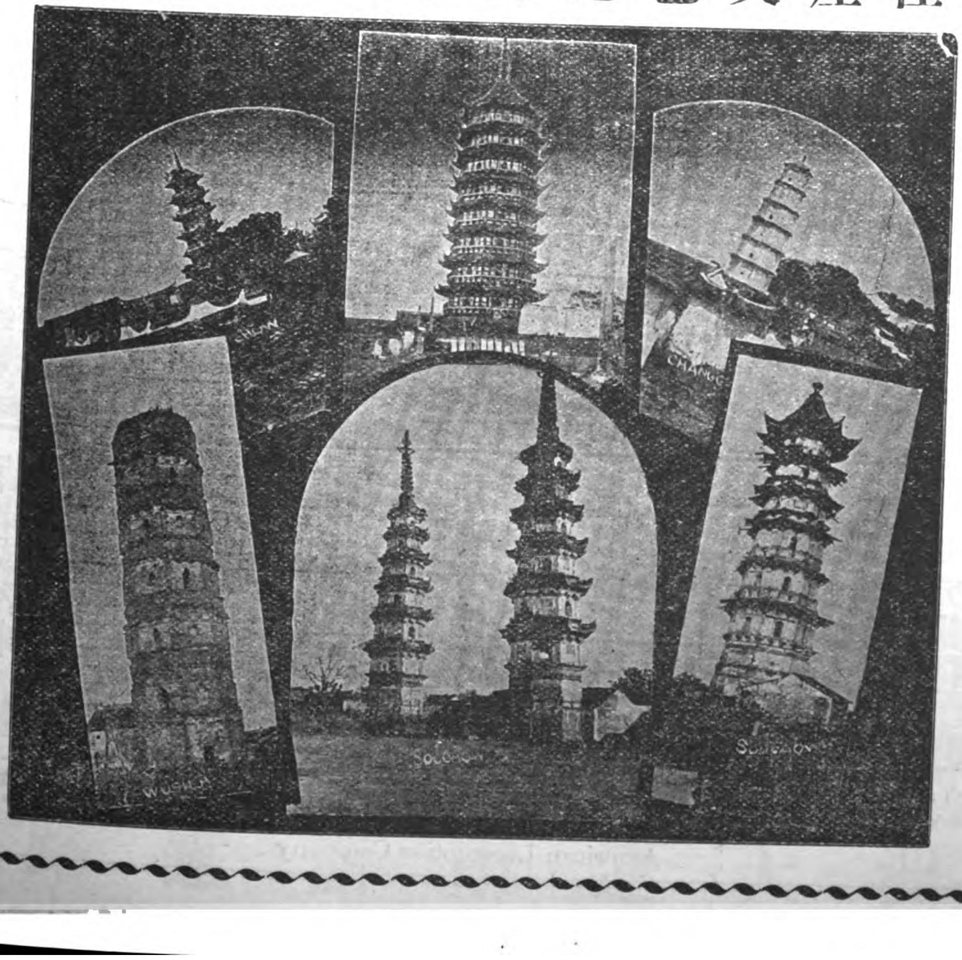
# 滬寧鐵路廣告

Shanghai-Nanking Railway

啓者本路工程均照歐西頭等鐵路最新款式建築軌道堅固車行穩捷往來時刻必依規定各站之候車客房停車月臺不但地方寬敞布置亦極周密往來搭客無擁擠窒塞之虞各等客車座位舒暢氣候咸宜頭二等之車尤爲美麗無匹電燈電鈴電扇厠所盥室色色完備並有餐車隨行以備搭客不時之需西膳茶點酒水俱全價廉物潔衞生合宜每晚加走夜車以便行人睡臥車上設有床位備客休息至淞滬一段之設施亦與幹路無異各站及車上之員司夫役招待搭客處處周到運貨亦甚穩速凡於交通上有益者無不日事改良以臻完備久蒙各界所贊譽倘承

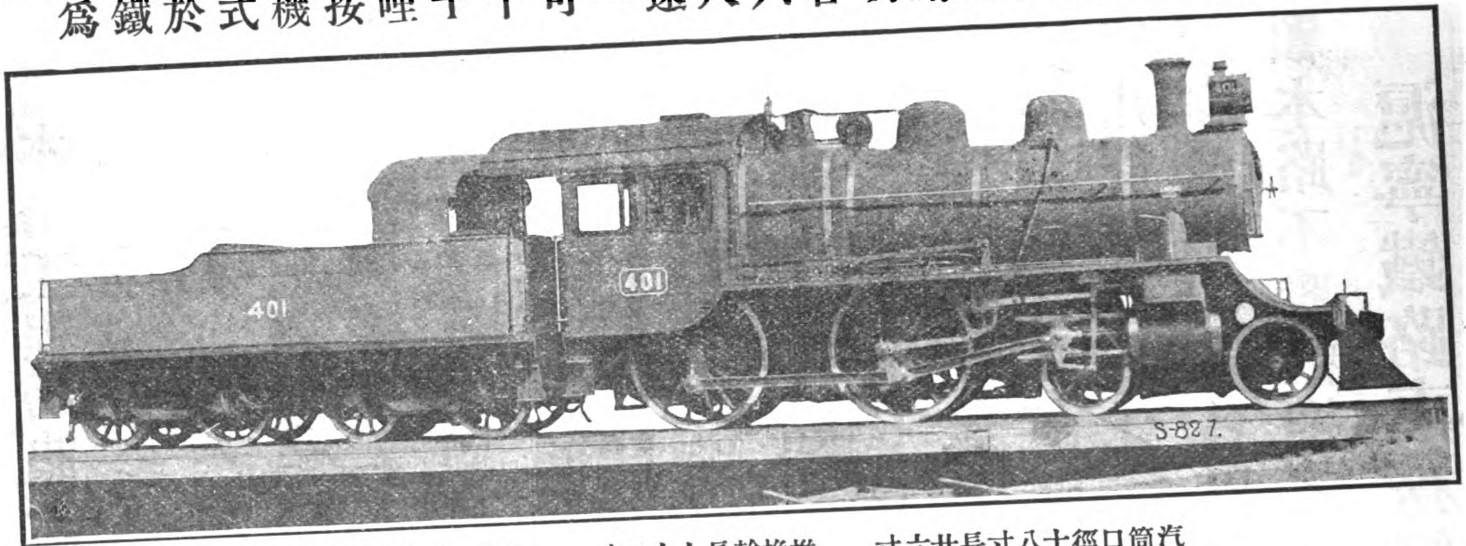
光顧本路不勝歡迎之至

滬寧鐵路車務總管敬啟



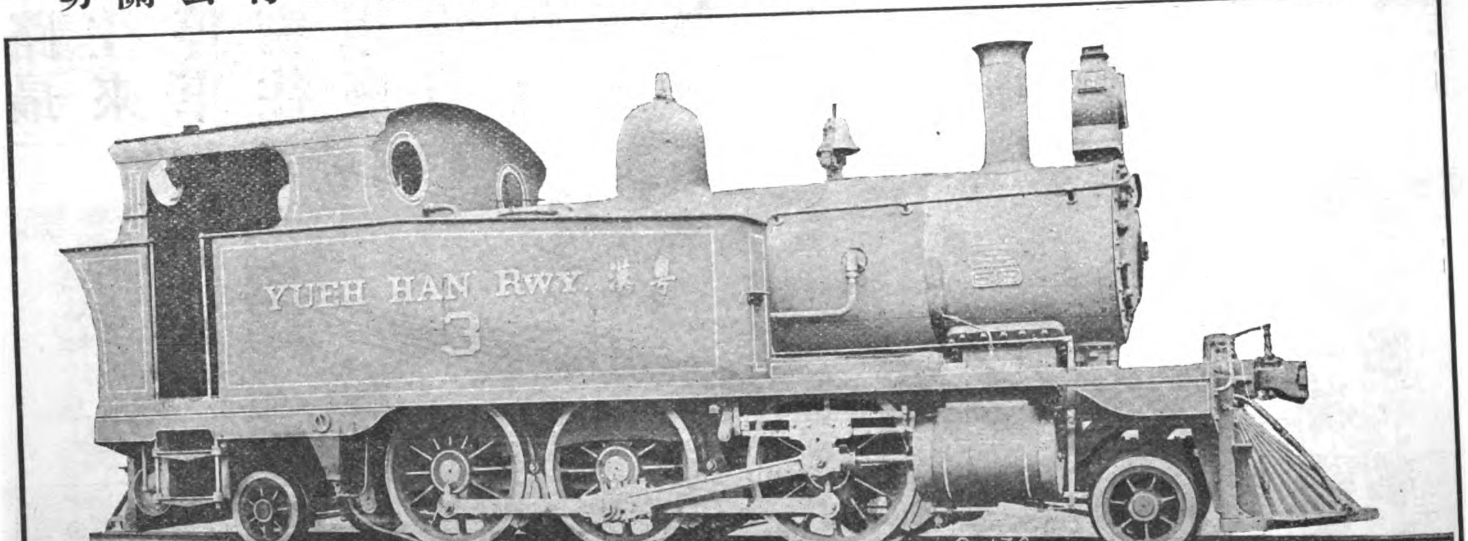
# 美國製造火車公司之火車極合用於中國鐵道

美國所製造之八輪火車頭即近時朝鮮鐵道所用之八輪火車頭甚爲合用已著明效拖客車至六輛或八輛其速力計一點鐘可駛二十至四十五英哩之遙按此種機關車式樣用於中國鐵道尤爲適宜




汽筒口徑十八寸長廿六寸　推挽輪長七十二寸　拖力一萬七千九百磅

火車頭之製造也在購辦者無不以最新式最適用爲貴而製造家亦必以最新式最適用者求合於購辦者之心爲能達其目的夫果欲合購辦者之心則必須經機關師之幾番商権始可辦理如　貴客欲與本公司在中國之經理處三井洋行面商則本公司當派機關師就商一切概不需費




中國粵漢鐵路之六輪雙水櫃車拖帶貨車或客車或貨車客車連帶之列車其速力與上圖記八輪車頭快慢有異者因此車速力較小拖帶列車之數遂少但前後有兩小輪可無旋轉機而能進退自如故駛行之時便捷多矣其特別出色之處即在此兩小輪也

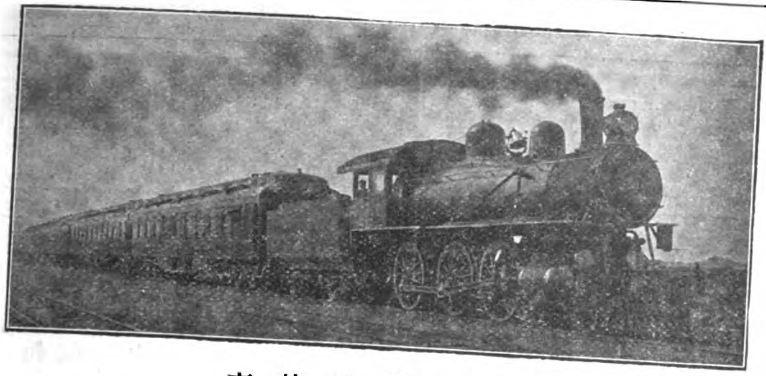
**在中國經理處三井洋行上海天津廣東漢口香港厦門盛京**

**本公司在美京紐約禮拜堂街三十號　電碼**

Locomotive New York
Annual Capacity; 3500 Locomotive.

American Locomotive Company

| | |
|---|---|
| 上海倫敦間 | 十三天半 |
| 東京倫敦間 | 十三天四分之一 |
| 東京北京間 | 三天半 |
| 大連莫斯科間 | 八天四分之三 |

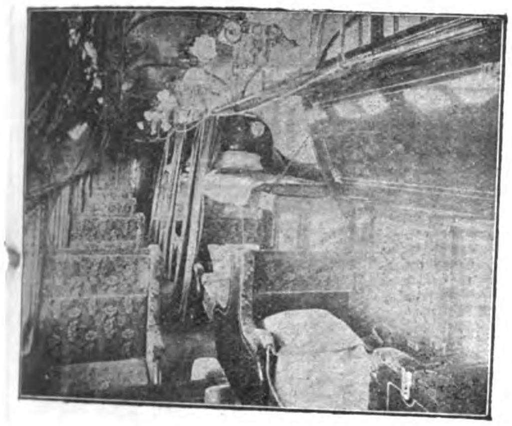


南滿鐵路快車

東亞歐洲間最短最捷最廉路線

# 南滿鐵路

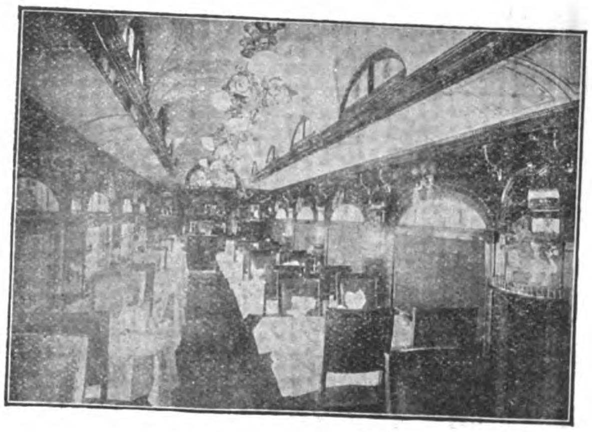
South Manchuria Railway Company, Dairen



床車

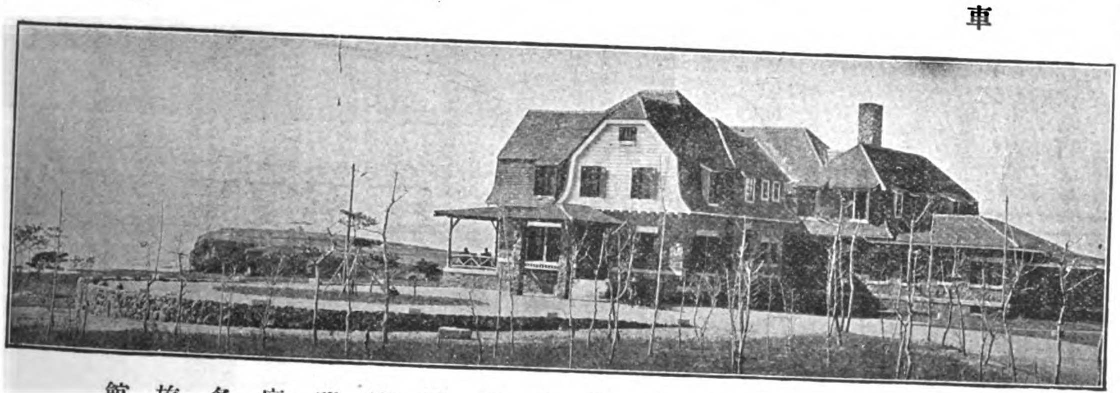
每星期開駛三次快車

本快車預備完善床車膳車並頭等客車運行大連長春間以便聯絡西伯利亞路線並上海航路



膳車

大連聯絡航路須知 凡自大連到門司神戶仁川天津芝罘青島及其他日華兩國各埠亦均有定期開行輪船彼此按日往來



南滿鐵路公司開辦大連星浦雅麻多旅館

奉天聯絡須知 凡此等快車在奉天與京奉鐵路聯絡並與新修滿韓路線長春釜山間每星期三次快車聯絡日本歐洲間旅程比舊短減兩天航程亦大就減縮

南滿鐵路公司開辦旅館 本公司在大連旅順奉天長春星浦等處開辦旅館均依西式調度完美無所不罄星浦距大連五英里爲北部瀕海地方唯一勝區開設旅館之外并添設許多平房雅潔瀟洒點在園中海山環繞風光明媚租價務從公道以應遊客貴需

歐亞各地代售車票處 本公司車船各票均在後開各處代售

萬國有床快車公司 (The International Sleeping Car & Express Trains Co.)

日本郵船會社上海分行

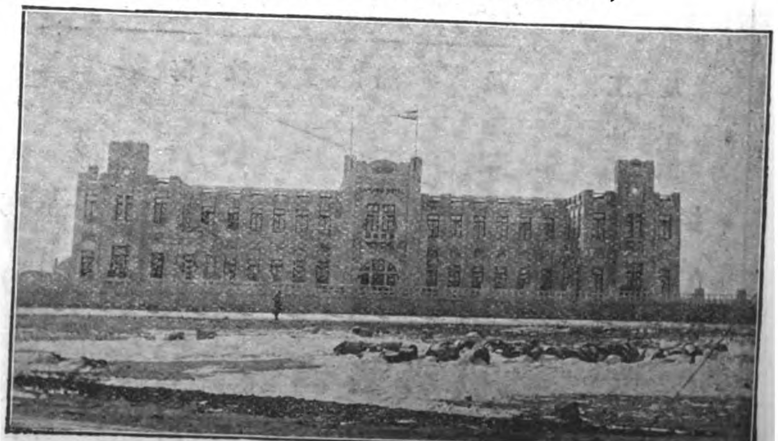
德瑪司庫克公司 (Messrs. Thos. Cook & Son.)

漢堡美國航路辦理旅客事務處 (Reisebureau der Hamburg-Amerika Linie)

挪的斯克辦理旅客事務處 (Nordisk Resebureau)

本鐵路時刻車脚表沿線便覽以及各項報告若有要需一俟告知本公司運輸科即當寄呈

南滿鐵路公司開辦長春雅麻多旅館



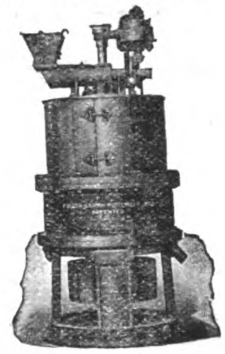
南滿鐵路公司開辦奉天雅麻多旅館

# 滿洲大連南滿鐵路公司

電報略號 Mantetsu 電報字碼書 第五版A.B.C. A.I. 李伯爾氏字碼

# 福祿氏磨機廠

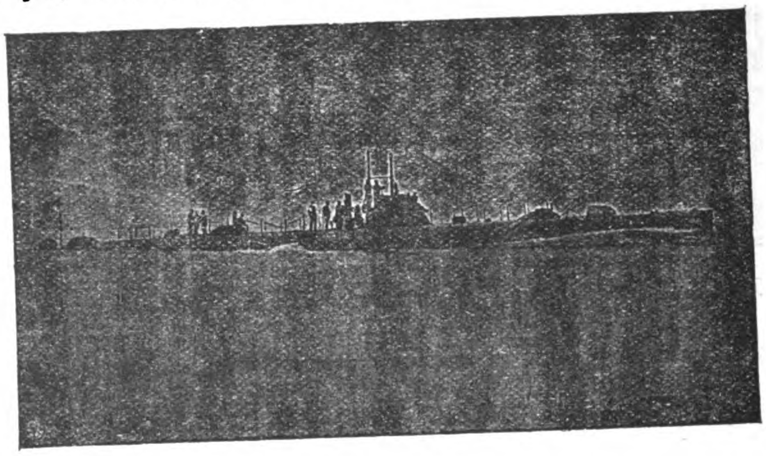
The Fuller-Lehigh Pulverizer Mill.



陳立所中所陳立之機器不下
四千架而福祿氏磨機實首屈
一指且價廉而又能磨不易磨
之各物品　如白煤　石綿石
瀝青砧　硫酸重土　炮克
石脫　烟煤　骨煤　炭精
水門汀石　水門汀磚　粉墨
炭　金苗　黃泥　煤炭
焦炭　銅苗　白雲石　肉色
之石　燒過之黃泥　粉泥石
鑄鐵板面　福祿氏土　玻
璃　金石英　黑鉛　石膏
海持來石灰　鐵苗　磁土
鎔巖　石灰　石灰石　砂石
磁鐵石　大理石　赭石
礦苗　螺蛳　漆　燐石
膏　巴得蘭水門汀　拍特立
耳礦滓　石英　壳　硅酸
礦滓　石板　雲母石　屈破
立　大小砂石　赭鐵礦　皓
金　淨白粉
諸君若欲以磨成之煤生爐請
查本廠所積之粉煤　用本廠
所製展轆壓之用本廠之火轉
乾機乾燥之用本廠之磨而粉
磨之若承各界光顧請來函索
說明書爲禱
本廠所出福祿氏牌機器如
絞縺　輓輪　齒輪　磨管
砌襯　壓機　磨機
工廠修理以及特式之鑄品
均可代辦請閱第五十號目
錄可來信索取
萊哈車子車輪車軸工廠白



# 飛愛山喬其哇有限公司出售海軍戰利品廣告



頭等淹沒魚雷艇
水雷坑道
炸藥隧道　消滅敵人水雷之用
形如浮桶之水面炸擊器
海底防範各種之軍械
各種電力發動之快行汽艇

Fiat-San Giorgio, Ltd., Spezia (Italy)



# 日本　長崎　三菱造船廠

**主要製作品**　郵客旅貨便物石油槽汽船達頻汽船快遊船各種兵船各種汽機汽鑵及電氣機械

**特許製作品**　巴遜斯式達頻同式發電機斯董式滿嘎黃銅公杜拉普羅冷汽機威耶式抽水抽氣各機暨爾特抽氣機

**海難救助船**　大浦丸（七百拾六噸）

**船渠及船架**　乾船渠叁基船架壹基而第叁乾船渠係蘇士以東最大者

**工場地基及職工數**　拾叁萬玖千坪壹萬餘名

Mitsu Bishi Dockyard & Eng. Works

# 上海耶松機器船廠有限公司

The Shanghai Dock & Engineering Co., Ltd.

電報行名

Telegraphic Address and Code

"FARNHAM"

A. B. C. 4th and 5th Editions
A.-1 Watkin's, Scott's
Western Union
and
Engineering.

密碼本用

總公司

在百老匯路廿六號

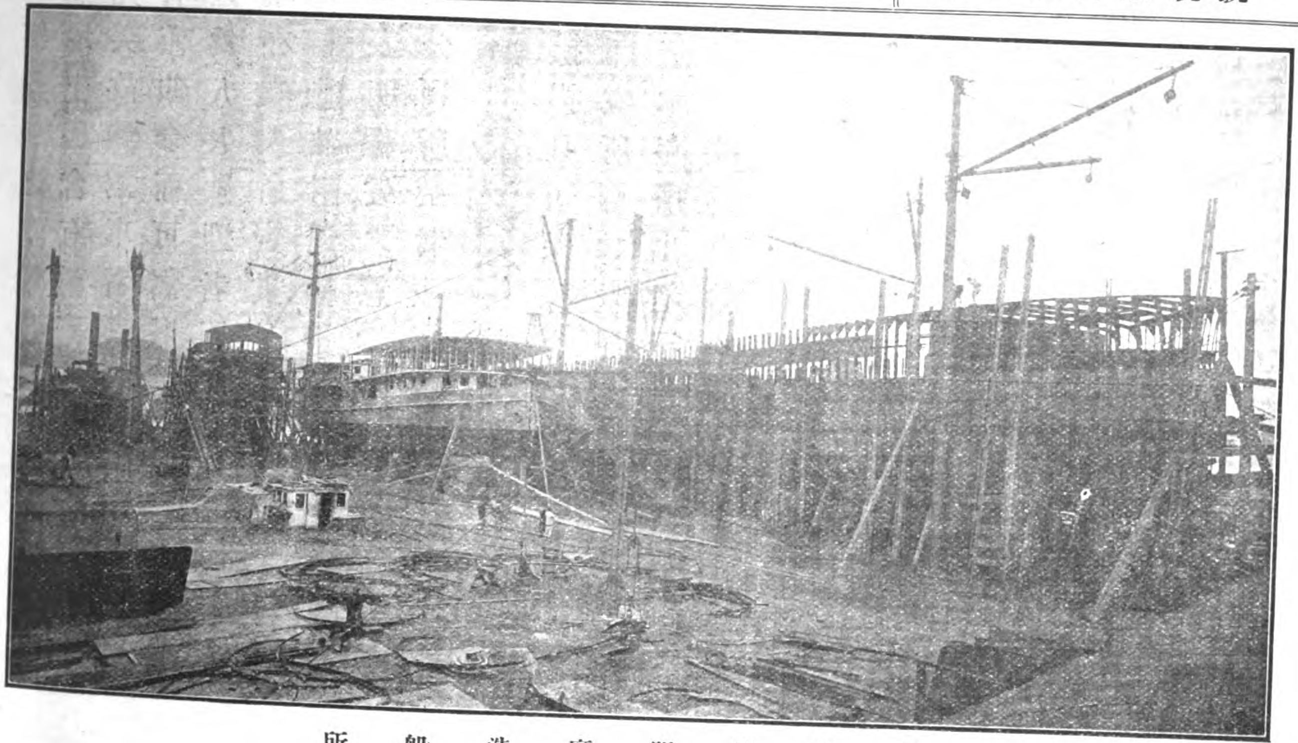
得律風第七號

;Address.

Telephone Number

電話號碼

大班處七五七號
書記處一八七七號
總辦處六七八號
幫辦處一八八七號
總寫字間七號
浦東寫字間二三號
浦東機器間一一二七號



祥生機器廠造船所

本廠所造輪船模型英一千九百零四年在美國聖魯易賽會得賞金牌

The Model exhibited at St. Louis Exposition and awarded the Gold Medal in 1904.

熱水汽管即司丁火爐各種式樣俱全

All Kind of Steam Heating Institutions.

本廠共有船塢五處長自三百五十五尺至五百三十二尺船塢口闊自五十三尺至七十七尺深十六尺至廿四尺　本廠價格可稱東方第一低廉　本廠船塢工場共有基地四百四十八畝佔有水面一英里半之長　碼頭方船均全以便各輪船修理時可以靠傍小輪修理並可拖至岸上各船塢均備有起重吊機可受六十五噸之重物　各造船處及工場均裝用電燈並有活動吊機可吊六十噸重之物並有最新式機器應用物件機器間及工場均裝輕便鐵道　本廠備有水鬼多名撈船器具及吊機浮船一遇招呼隨時應命無論海船江輪明輪暗輪拖駁小輪機器駁船挖泥船吊機浮船以及碼頭方船等如蒙詢問價目無不從速答覆　各種修理及拆舊換新等本廠均可承接並能迅速從事　本廠並有船上岸上所用機器爐子開礦機抽水機以及各種機件電氣自來火火油司丁各種機器俱全如蒙賜顧請即駕臨或函件接洽均當歡迎也

# 火石車輪橡皮公司廣告

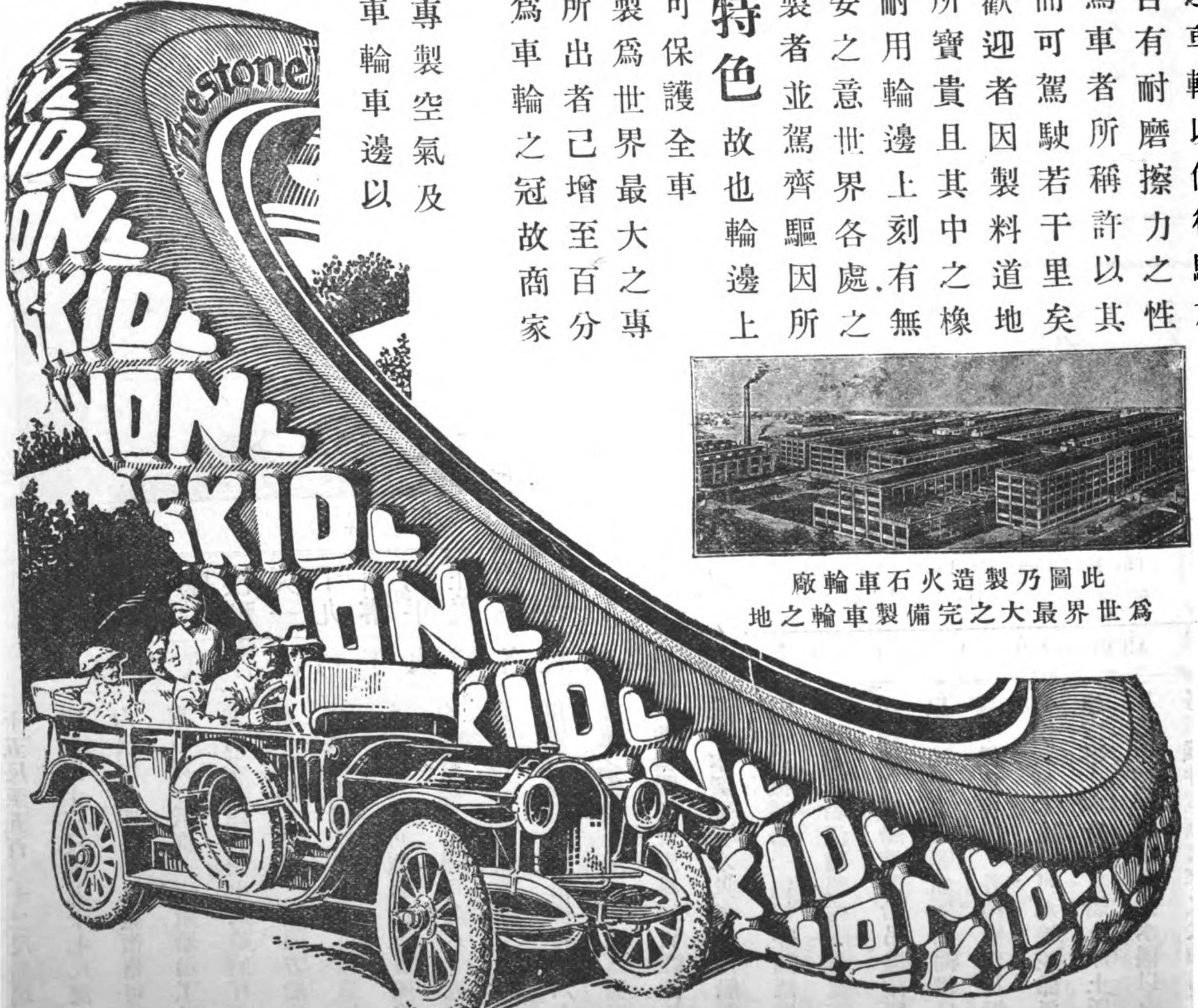
Firestone Tire & Rubber Co. Factory: Akron, Ohio, U. S. A.

本公司專製火石無輪制之車輪以便行駛於堅硬之道路及熱地上因含有耐磨擦力之性質且價廉而物尤美故爲駕車者所稱許以其穩妥適當所費者僅仙令而可駕駛若干里矣火石車輪之所以爲人人歡迎者因製料道地雖最廉價之車輪亦爲人所寶貴且其中之橡皮亦爲最好者最能避熱耐用輪邊上刻有無輪制等字卽所以表明穩妥之意世界各處之車輪斷不能與本公司所製者並駕齊驅因所著者乃**耐用省費爲特色**故也輪邊上之字可免輪制之擦損且可保護全車火石車輪邊爲專門家所製爲世界最大之專製車輪之工廠所造本年所出者已增至百分之七十八因力大堅穩故爲車輪之冠故商家亦願承辦代銷

工廠開設美國哇哈哇省專製空氣及實心輪子馬達車輪救火車輪車邊以及車輪所有之附屬品

小呂宋非列賓經理爲美國哈特韋西浪並公司

中國通商口岸東三省及高麗等處若有殷實商家欲經理者可通函索取章程可也




此圖乃製造火石車輪廠
爲世界最大之完備車輪製造之地

斐律濱全島銀行即原日之西班牙斐律濱人銀行改名創設在西歷壹千八百五拾壹年　準備資本壹千萬元已收資本銀四百五拾萬元經斐島政府承認有附貯公欵所有銀行營業事宜買賣滙單各埠處如　英國倫敦滙票　法吧黎　西班牙馬德里　吧詩倫那　德國伯林　咸北　澳洲西德尼　舊金山　芝加哥香港與及一切總滙商市各區由電滙兌及附貯日息長期或逐日收支其利息悉照市面行情酌議另設支行在斐島屬之衣路埠其餘各埠皆設有代理人

倫敦 National Bank of Scotland, Ltd.　巴黎 Comptoir National d'Escompte

馬德里 Banco Hispano Americano　吧斯倫那 Crédit Lyonnais

伯林 Deutsche Bank　西德尼 Bank of New South Wales

紐約 Kountze Brothers　芝加哥 Continental & Commercial Nat'l Bank

舊金山 Wells Fargo Nevada National Bank　香港 Banque de L'Indo-Chine

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The Bank of the Philippine Islands



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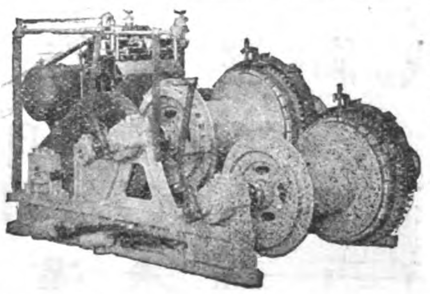

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△英金公積
一千五百萬元
△銀公積
一千六百七十五萬元
△貯備股東應付金
一千五百萬元

定期存款利息額如蒙函詢當即通知
需用銀者如以相當之物作抵均可議辦
其餘各種銀行交易皆應有盡有
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International Banking Corporation

# The Bank of the Philippine Islands

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(ESTABLISHED 1851)

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|---|---|
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| Capital fully paid up | 4,500,000.00 |
| Reserve fund | 1,125,000.00 |

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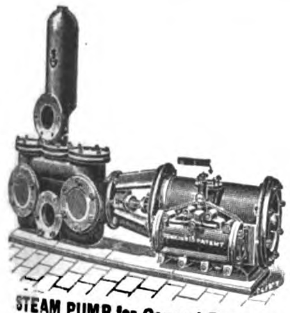

STEAM PUMP for General Purposes.

Fig.160.

***WE MANUFACTURE***

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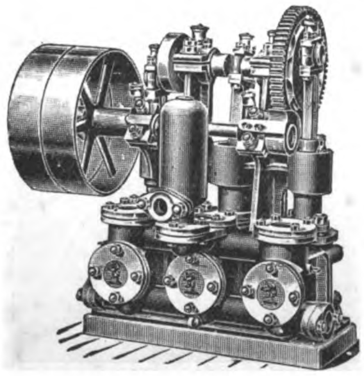
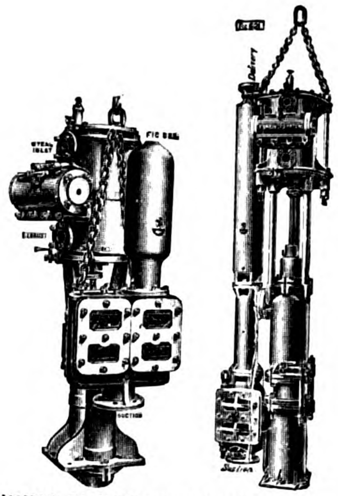
To be worked by HAND, STEAM, BELT, WIND, WATER or ELECTRIC POWER.





SINKING PUMPS for COLLIERIES, MINES, Etc.

Fig.191.

***Write for "Eastern" List.***

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Fig.188

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上海英界仁記路第五號

# THE FAR EASTERN REVIEW

遠東時報

Engineering

Finance ⁂ Commerce

Vol. XII., No. 9. ❋ SHANGHAI—MANILA ❋ February, 1916.

## S. Grand Canal Conservancy

## Philippine Woods in the China Market

## Revolt of the Republicans

## The Railways of Siam

## British North Borneo

## Japanese Government Railways

TABLE OF CONTENTS ON PAGE 341 INDEX OF ADVERTISERS FACING PAGE 374

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**Tokyo**—Mitsui Bussan Kaisha, Ltd., 1, Suruga Cho.
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- Switchboards
- Switches
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- Turbine Generators
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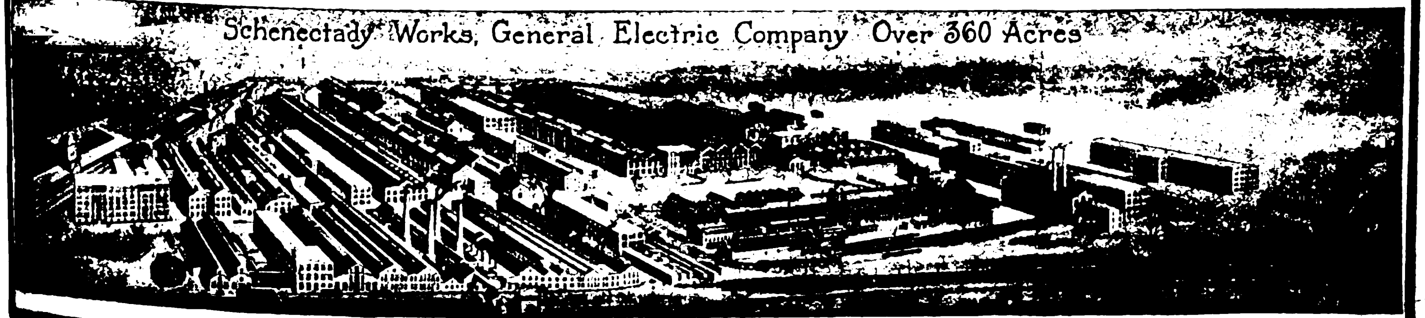

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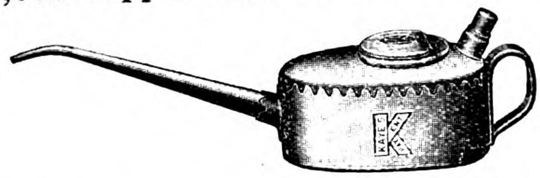

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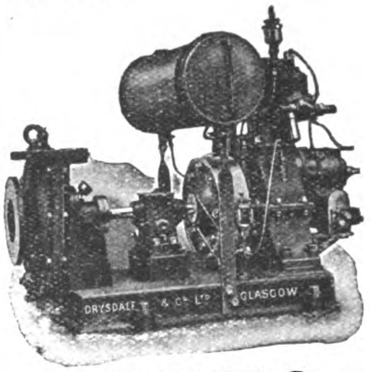

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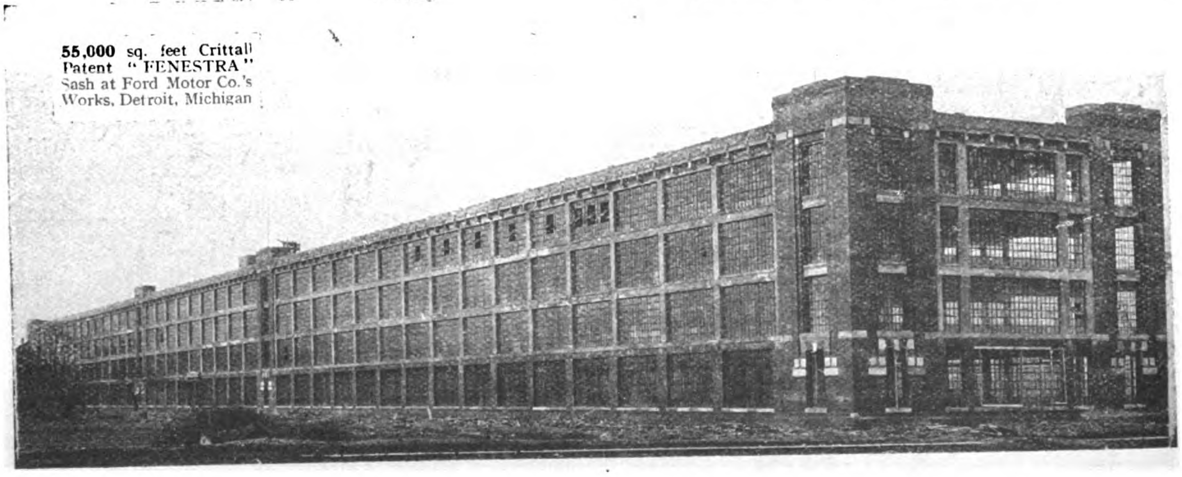

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Ad 58



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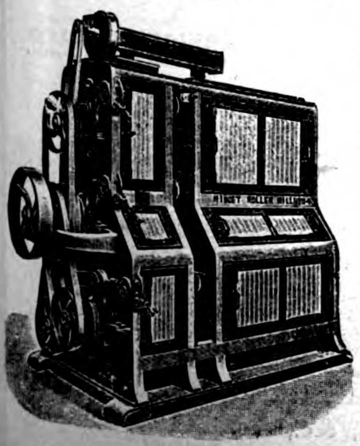

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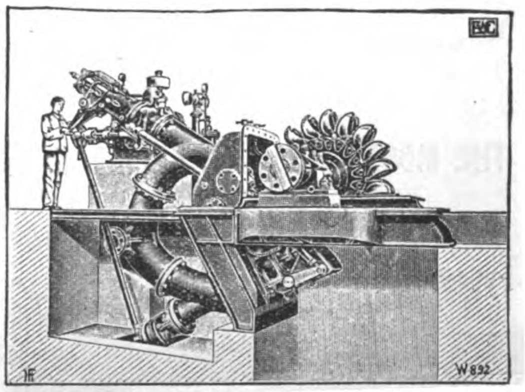

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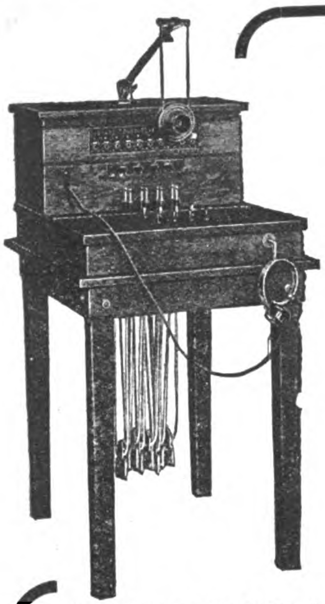

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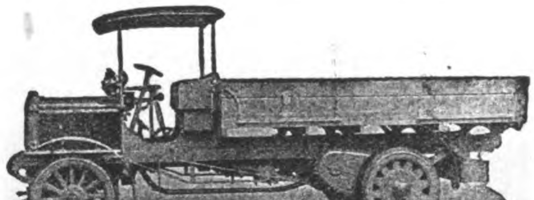

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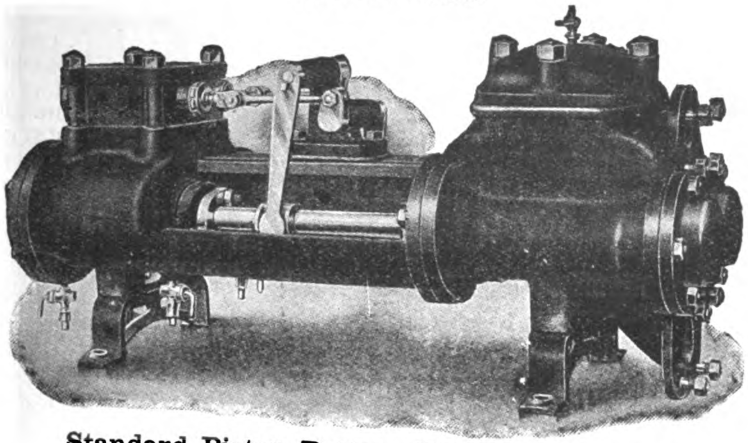

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(**Manchuria**) Newchwang, Mukden, Changchun, Kirin, Harbin, Liaoyang, Kaiping, Sunkaitai, Tilin, Kinhsien, Hsingmingtun.
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(**Shansi**) Tatung, Yangkaou.
(**Shensi**) Mienchih.
(**Shantung**) Tsinan, Tsinin, Tsochwang, Chefoo, Tehchow.
(**Honan**) Kaifeng, Tsioutso, Chowkaikow, Taho, Taokow, Changteh, Chengchow, Sinyangchow, Loyang, Puhyang.
(**Kiangsu**) Shanghai, Soochow, Wusih, Chinkiang, Yangchow, Pukow, Peipu, Hsuchow, Tsinkiangpu.
(**Chekiang**) Hangchow, Ningpo.
(**Anhui**) Wuhu, Pengpu.
(**Kiangsi**) Kiukiang.
(**Hupeh**) Hankow, Ichang, Shashi.
(**Hunan**) Changsha, Yiyang, Hengchow, Siangtan, Shongteh, Paoching.
(**Kwangtung**) Canton.
(**Special Districts**) Jehol, Kweihua. Hongkong, Singapore, Dairen, etc., etc.

### Shanghai Branch

Every description of Banking and Exchange business transacted.
Interest allowed on Current Accounts and Fixed Deposits according to arrangement.
Credits granted on approved securities.
Special facilities for transfers in all parts of China.

**Chang Sze Shen**
**F. Slachmuylders** } *Managers*

**Zee Pao Chi,**
*Sub-Manager*

# THE BANK OF CHINA

## Government Bank

(Specially authorised by Presidential Mandate of 15th April, 1913)

**Authorised Capital: $60,000,000.00**
**Paid up Capital: $10,000,000.00**

## Head Office: Peking

## Branches and Sub-Branches:

**Shanghai and Nanking:** Chinkiang, Yangchow, Wusieh, Wuhu, Anching, Tatung, Tsinkiangpo, Soochow, Süchowfu, Siakwan, Pingpu. **Hankow:** Shashi, Ichang, Nanchang. **Tientsin:** Paoting, Tongshan, Luanhsien, Tsanghsien, Hsingtai, Puhyang, Kihsien, Chuchow. **Hangchow:** Wenchow, Shaohsin, Chiahsin, Lanchi, Huchow, Ningpo. **Kaifeng:** Changteh, Sinyang, Loho, Chowkeu, Taokow. **Tsinan:** Chowtsun, Tunhsien, Linchi, Lintsing, Tsinien, Yihtuh, Huiming, Chefoo, Tsingtao. **Taiyuen:** Yuncheng. **Foochow. Changchun:** Kirin, Moukden, Newchwang, Dairen, Harbin, Tsitsihar, Tieling, Chinchow, Antung. **Canton:** Kongmoon, Swatow, Kiungchow, Shiuchow, Chaochowfu. **Kueiyang. Peking:** Kueihua, Suiyuancheng, etc., etc.

## Peking Branch

Interest allowed on current accounts and Fixed Deposits. Terms on application. Every description of Banking business transacted; loans granted on approved securities. Special facilities for Home exchange.

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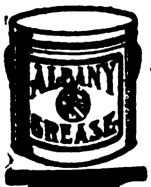


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We also manufacture Cook's Lubricant for Automobile Gears and Transmissions.

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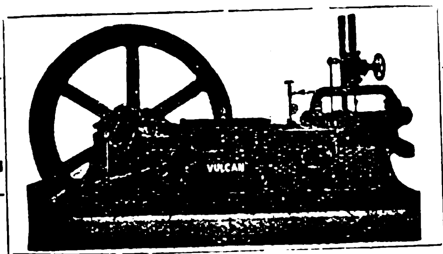


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1878—PATENTED—1910

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Two Ingredients { Solid / Liquid

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Non-explosive BEFORE mixing

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Safer to handle AFTER mixing, than any other powder

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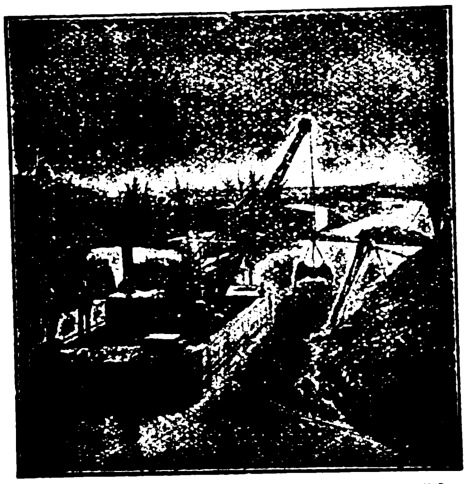
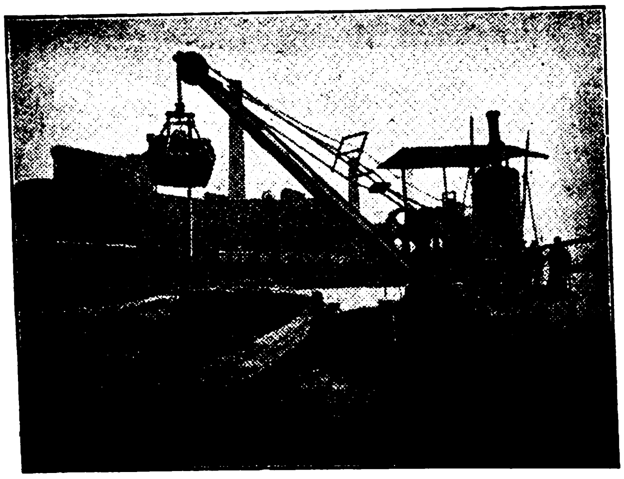


ONE OF FOUR GRAB DREDGERS SUPPLIED TO THE GREAT WESTERN RAILWAY CO.

ONE OF A LARGE NUMBER OF GRABS TAKEN BY MESSRS. S. PEARSON & SON, LTD., CONTRACTORS



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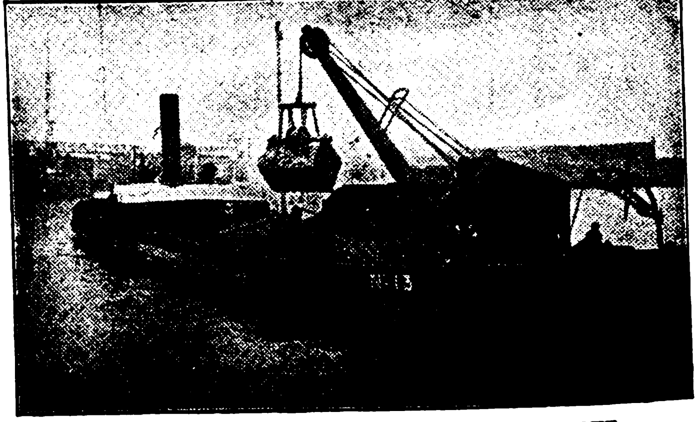

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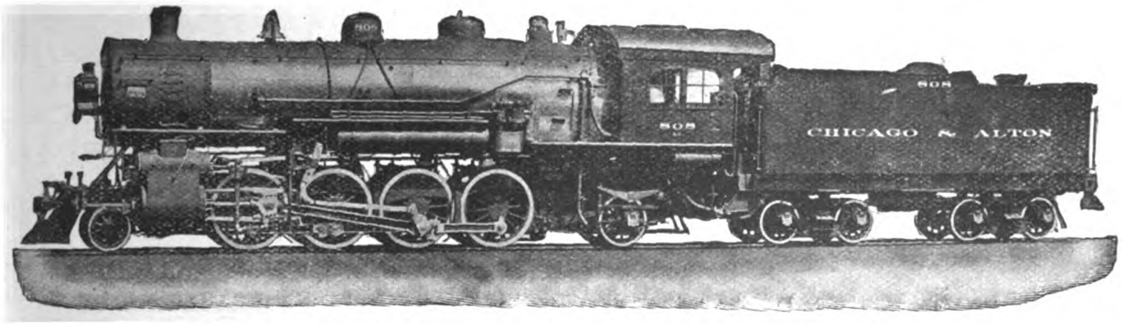
MIDDLETON & CO. LTD., SHANGHAI, AGENTS FOR CHINA

# Powerful Locomotives

## SPECIALLY ADAPTED TO THEIR WORK




**MIKADO TYPE LOCOMOTIVE WITH SUPERHEATER, BUILT FOR CHICAGO & ALTON RAILROAD**

**Total Weight of Engine, 269,000 Pounds. Weight on Drivers, 212,300 Pounds; Diameter of Drivers, 62 Inches. Boiler Pressure, 160 Pounds; Cylinders, 28 × 30 Inches. Maximum Tractive Power, 51,590 Pounds. Thirty of these engines have replaced Consolidations of 39,800 pounds tractive power on the line from Virden to Chicago.**

The use of larger locomotives, with the latest and best improvements, has effected savings in fuel on a number of railroads varying from 25 to 35 per cent.

The Chicago & Alton Railroad's heaviest freight service was formerly handled by Consolidation locomotives with a tractive effort of 39,800 pounds. By adopting superheater Mikado type locomotives with a tractive effort of 51,590 pounds, they have increased their tonnage from trains of 3,200 tons to trains of 4,000 tons with an average saving of 28 per cent and a maximum of 35 per cent in cost of fuel.

The saving has been made possible not merely by adding fuel saving devices to existing designs, but by designs specially directed toward best possible use of fuel saving devices.

If you do not wish to save this fuel, but prefer to use it in securing greater capacity, the following table shows how it may be done.

| Scale of Economy. Saving in fuel per unit of work | | Scale of Capacity. Increased work per ton of coal |
|---|---|---|
| 25 per cent. | means | 33.3 per cent. |
| 30 per cent. | means | 42.8 per cent. |
| 35 per cent. | means | 53.8 per cent. |

Of course the locomotive must be especially designed to provide the additional capacity.

With superheater and brick arch, the harder the engine is worked the greater is the economy obtained, and therefore the greater the capacity up to the limit of the combination of the particular boiler and engine concerned.

# AMERICAN LOCOMOTIVE COMPANY

30, CHURCH STREET, NEW YORK. Cable Address:—LOCOMOTIVE NEW YORK

## MITSUI BUSSAN KAISHA, LIMITED

(MITSUI AND COMPANY)

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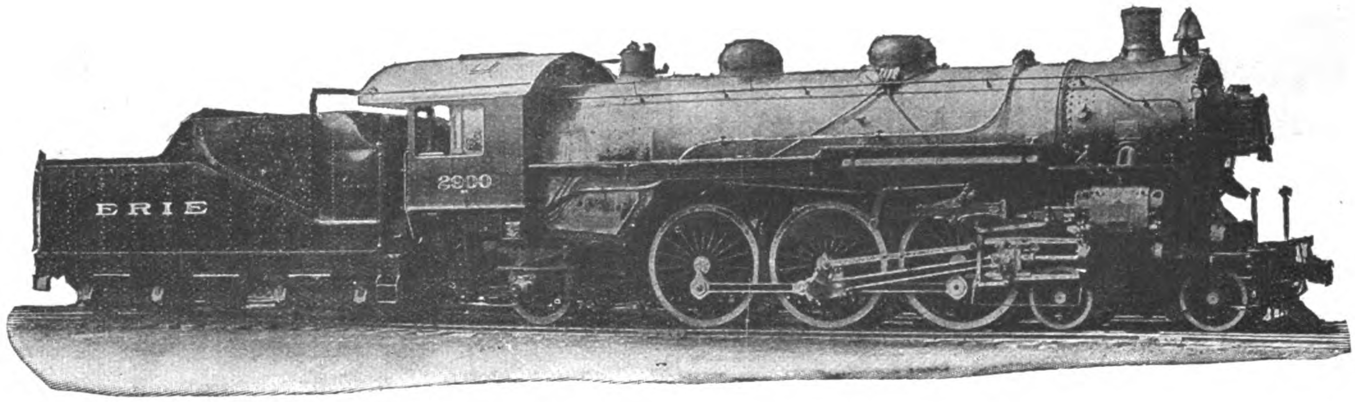
Agents for the Philippine Islands, Pacific Commercial Co., Manila

# Lima Locomotive Corporation

## Builders of all Classes of Motive Power. Capacity 720 to 1,000 per year




**Heavy Pacific Type Built for Erie Railroad**

## LIMA HEAVY PACIFIC TYPE

This locomotive combines the latest improvements and developments in design, materials and economic devices for saving fuel, etc.

Built for the **ERIE RAILROAD** for heavy fast passenger service where maximum capacity was desired.

GENERAL DIMENSIONS AS FOLLOWS:

Cylinders, 27 × 28 inches
Driving wheel base, 14 ft.
Total Wheel base, 36 ft. 2 inches
Drivers, diameter 79 inches
Boiler, straight locomotive type
Boiler diameter 79 inches
Weight on drivers, 176,000 lbs.
Total Weight, 287,000 lbs.
Tractive Power, 40,700 lbs.
Factor Adhesion, 4.24
Superheater, Schmidt
Valve motion, Baker

Our **PLANT** is equipped with the latest and most improved machinery, which enables us to build any type or size locomotive required.

Write our Agents for any information you desire and a copy of our catalogue.

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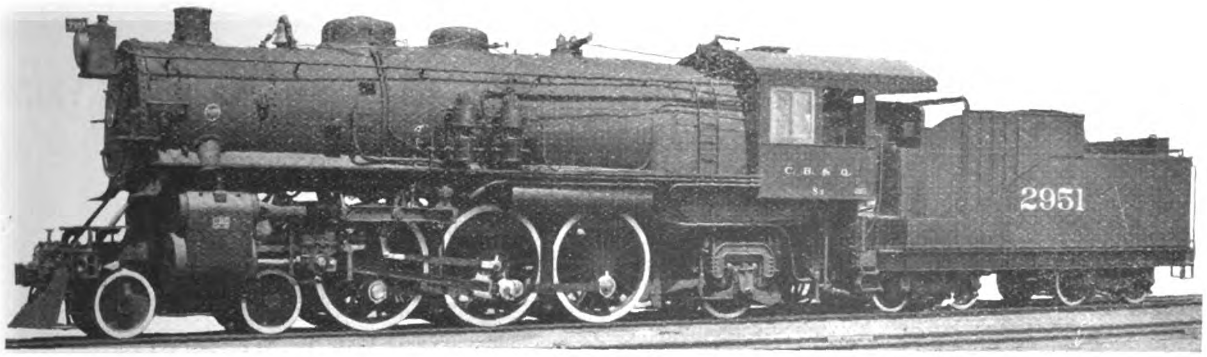
# PACIFICS FOR HEAVY DUTY




PACIFIC TYPE LOCOMOTIVE, CHICAGO, BURLINGTON & QUINCY R.R.

| | |
|---|---|
| Cylinders, 27"×28" | Water heating surface, 3,364 sq. ft. |
| Driving-wheels, diameter 74" | Superheating Surface, 751 sq. ft. |
| Steam pressure, 180 lbs. | Weight on driving-wheels, est., 169,700 lbs. |
| Grate area, 58.7 sq. ft. | Weight, total engine, est., 266,400 lbs. |

Tractive force, 42,200 lbs.

Fifteen Pacific type locomotives, as illustrated above, were built by the Baldwin Locomotive Works in 1915 for fast passenger service on the Burlington system. These locomotives were designed to develop maximum capacity with a limiting weight of 170,000 pounds on driving-wheels. The boiler is of the extended wagon-top type, with a wide fire-box and combustion chamber. This construction shortens the tubes and reduces the heating surface to some extent, but it provides a long flame-way and ample space for combustion; advantages which fully compensate for the loss in heating surface. The firebox contains a brick-arch, supported on angle-irons; and a superheater of the Schmidt type is applied. The valve gear is of the Walschaerts type, controlled by the Ragonnet power reverse mechanism. Careful attention has been given to the design of the reciprocating parts, in order to reduce the excess pressure on the rail due to the centrifugal effect of the counterbalance when running at high velocity. At a speed of 70 miles per hour, this excess pressure amounts to 38 per cent. of the static weight for the front and back driving-wheels, and 28 per cent. for the main wheels. The locomotive is therefore less severe on the tracks and bridges, than many other engines which actually carry lighter wheel loads but have heavier reciprocating parts.

A well-proportioned locomotive, with carefully designed details, and equipped with fuel-saving devices, develops high capacity per ton of locomotive weight and proves reliable and efficient in service.

## THE BALDWIN LOCOMOTIVE WORKS

Cable Address:—"BALDWIN, PHILADELPHIA" PHILADELPHIA, PA., U. S. A.

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## Gas Suction and Producer Plants

The best and most efficient Coal on the market is the Pekin Syndicate's Honan Anthracite

## GAS ENGINE COAL

specially graded to any size required

Prices on application to:—

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吸 煤 氣 機 發 煤 氣 機

福公司河南無煙煤最爲良美合用

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# 27,000 PYLE-NATIONAL ELECTRIC HEADLIGHTS IN SERVICE

Actual Photograph taken on the Chicago, Rock Island and Pacific R.R., with no other light but the Pyle-National Electric Headlight. The station seen is half a mile from the engine.

A Pyle-National Electric Headlight gives a Great Beam of Clear, Strong, Penetrating Light that distinctly illuminates the Track for Half a Mile Ahead of the Locomotive, enabling the Engine Driver to maintain Schedules, verify Signals and avoid Accidents.

*Three Railroads are each operating more than 1,700 Pyle-National Headlights.*
*Four Railroads more than 1,000 each. Twelve Railroads more than 500 each.*

## PYLE-NATIONAL ELECTRIC HEADLIGHT COMPANY

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*Export Agents.* **Railway Materials Export Corporation.** 149 Broadway, New York, U.S.A.

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A CLEAR AND SPARKLING SUPPLY AT SMALL COST

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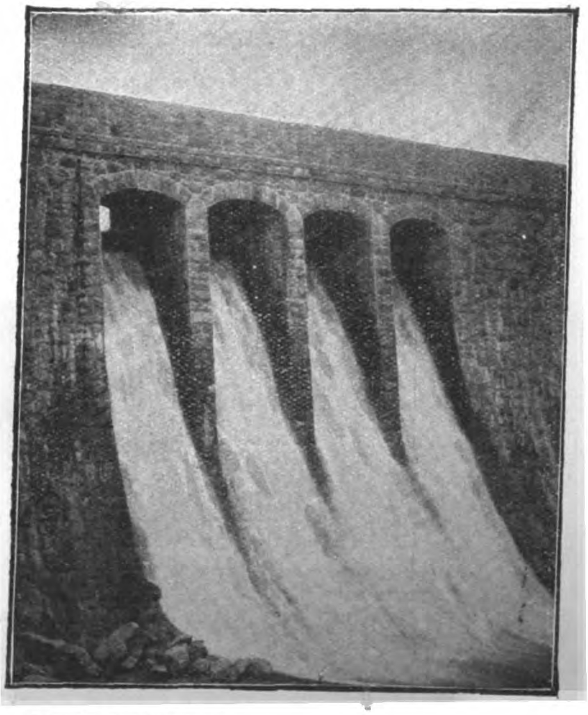
FOR LARGE OR SMALL SUPPLIES, TOWN, INDUSTRIAL, OR ESTATE

Our Expert Staff is at your service to design free of charge a plant to suit your conditions and upon which you can rely with certainty.

Our Patented Filters, Processes, and Apparatus, cover the whole field of water purification in all its branches.

**THE CANDY FILTER Coy. Ltd., WESTMINSTER, LONDON**



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SOCONY

REG. TRADE MARK

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SOCONY Lubricating Oils are manufactured by the most scientific processes.

Expert refiners prepare each and every grade so that it will give the highest possible amount of efficiency under working conditions

Every ounce of the whole load of your factory comes on the Cylinder and Valves and the best Lubrication you can give them, is not too good.

Idle engines earn no money, but are a constant source of expense. High engine efficiency is only obtained by perfect lubrication with Standard Lubricants.

Although a High Class Oil costs more initially, in the end it is far cheaper, its economical life is longer, its Lubricating qualities greater, and its consumption less.

Railway Lubrication has always been the cause of endless worry to the engineer. The best oils should be used, as exhaustive tests have proved that the cost of coal required to overcome the friction was 3 times the cost of a Cheap Lubricant, and the cost to renew the metal was 6 times the cost of a Cheap Lubricant.

# STANDARD OIL COMPANY OF NEW YORK

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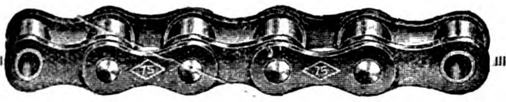

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for
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DIAMOND cycle chains are accurately manufactured of the highest quality steels, which are heat treated by a scientific and improved method. They are strong and dependable—being used by a majority of the American bicycle manufacturers as standard equipment.

Diamond roller cycle chains are furnished both ½ in. and 1 in. Pitch, and we also have a complete line of 1 in. Pitch block chains for cycles.

We are also prepared to serve the trade promptly with chains for motorcycles, automobiles, motor trucks and Power Transmission.

**Special care given to Export Shipments.**
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*Fig. 3000 Centrifugal Pump*

This experience has enabled us to develop and manufacture for export business, a line of pumps which is unequalled anywhere.

***This line consists of***
Triplex Power Pumps
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for Pneumatic and Gravity
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Rotary Pumps and many
other types for standard
and special services.

*Fig. 1454 Deep Well Working Head*

*Fig. 1604 'New Alert' Double Acting Air and Water Force Pump*

***Write for Catalogue which describes complete line.***

**The Goulds Manufacturing Co.**
**Main Office and Works**
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**Cable Address: "Glavis Seneca Falls"**
**A. B. C. Liebers, Western Union and Private Code**

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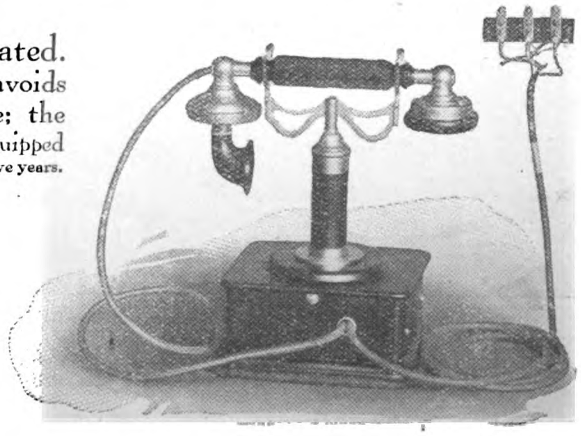
FOR all telephonic purposes—portable telephone service, intercommunication systems, local lines, small magneto exchanges, universal exchange, common battery system—KELLOGG SYSTEM is the most efficient service in the world. The largest or smallest telephone unit supplied.

¶ A popular type of Kellogg Telephone is illustrated. It is a compact and reliable model, and assures a service that avoids trouble and repair expense. The parts are easily accessible; the most convenient type of telephone to use for all conditions and purposes. Equipped with our standard ringer, induction coil and Kellogg transmitter which is guaranteed for five years.



¶ The set can be furnished for magneto or common battery service or with separate bell box and stand, if desired, for wall or table use. Highest quality material used throughout with careful assembling and testing. The price is reasonable and we ship promptly and properly. Built in our own extensive factory. *KELLOG SYSTEM is in Universal use. "USE is the TEST."*

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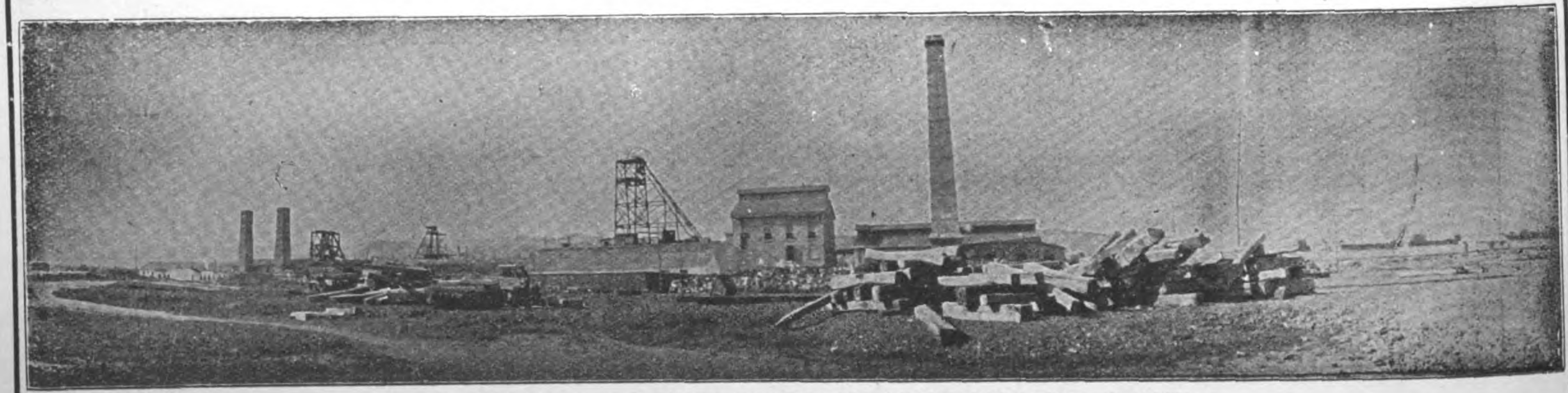
## THE TAO-CHING RAILWAY

TAOKOU TO CHINGHUA

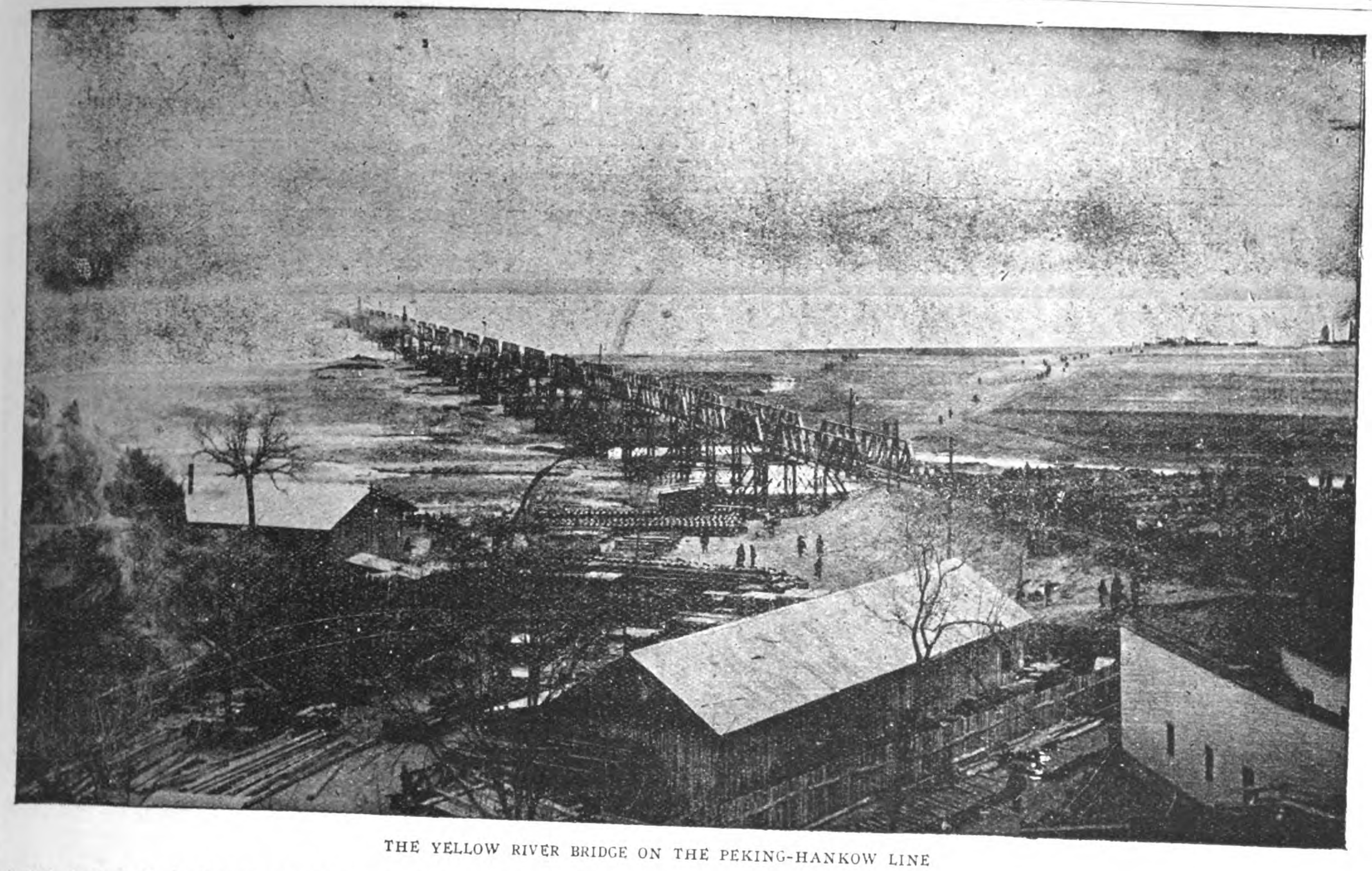
(CHINESE GOVERNMENT HONAN LINE)



GENERAL VIEW OF COAL MINES ON THE LINE OF THE TAO-CHING RAILWAY

"China's Road of Anthracite"

THE TRAINS OF THIS LINE CONNECT AT SIN-SIANG-SIEN WITH THE THROUGH SERVICE OF THE PEKING-HANKOW RAILWAY. IT TAPS THE GREAT ANTHRACITE COAL DEPOSITS OF SHANSI, AND CONVEYS THE PRODUCTS OF THE MINES TO THE NEAREST NAVIGABLE RIVER.



THE YELLOW RIVER BRIDGE ON THE PEKING-HANKOW LINE

CHINESE GOVERNMENT RAILWAYS

# PEKING-HANKOW LINE

"THE ROAD THROUGH THE HEART OF CHINA"

Avoid the Cold and Rough Weather in the Sea Trip between Shanghai and the North by the more comfortable Route up the Yangtsze to Hankow, and from there via the Ching-Han Railway to Peking, where through connections for Europe are made with the Trains de Luxe of the Government Railways of North China.

This line passes through the Heart of the Country and enables the traveller to and from Europe to catch a glimpse of Old China. Ancient walled cities, temples and pagodas are seen from the comfortable seats of the weekly trains de luxe operated by this line. From Peking, the great capital of the oldest civilization in the world, the train departs from the famous Chien-Men and carries the traveller through the historical and legendary portions of the Country, to the modern industrial center at Hankow—the Chicago of China. Connections are made with the Cheng-Tai Railway at Chengtingfu, with the Tao-Ching Line at Sin Siang-sien, and at Chengchowfu with the Pienlo Line.

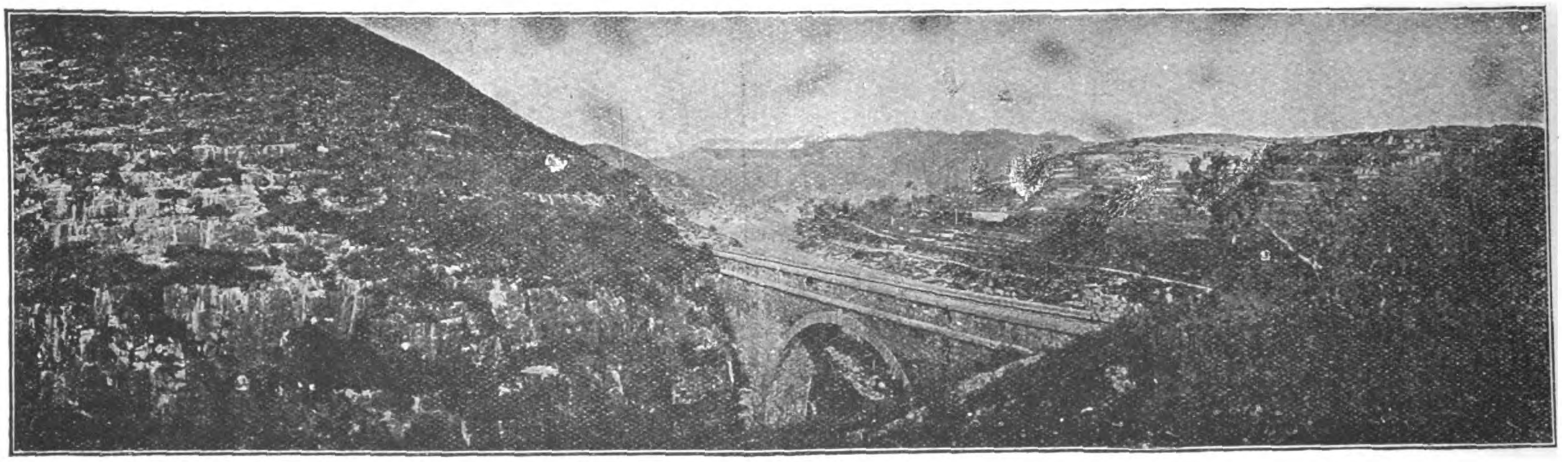
A weekly express train de luxe leaves Peking every Tuesday, and Hankow every Friday, making the trip of over 700 miles in less than thirty hours.

For information apply to any office of the International Sleeping Car Co. or Thos. Cook and Sons.

# Chinese Government Railways

## *The Cheng-Tai Railway*

*(CHINESE GOVERNMENT SHANSI LINE—CHENGTINGFU TO TAIYUANFU)*

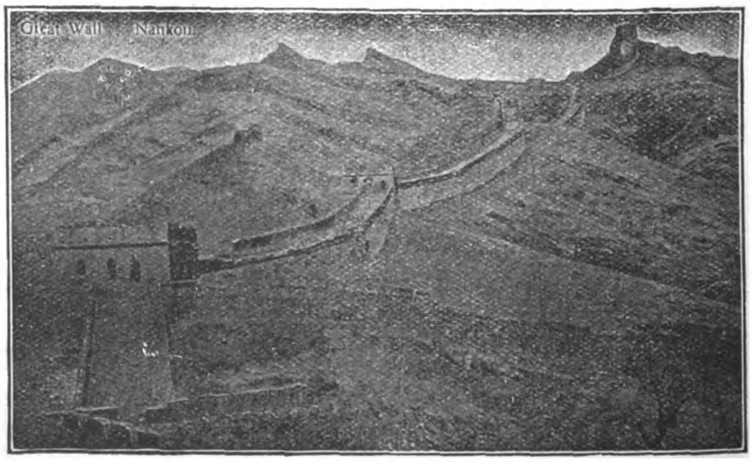


VIEWS ALONG ROUTE OF CHENG-TAI RAILWAY

The trains of this line connect with the through service of the Peking-Hankow Railway, affording Travellers the opportunity of seeing the most picturesque part of China. The line passes through a mountainous section of country, rich in Mineral Resources to the Provincial Capital of Shansi at Taiyuanfu. This interesting city is a great educational center, and famous for the fine quality of its artistic embroideries.

## *The Peking-Kalgan Line*

*"THE ROAD TO THE GREAT WALL"*




This line follows the ancient caravan route and military highway from Mongolia into China by the way of the historic Nankow Pass. This pass is the Key to Peking, and Kalgan is the gate of the Country. From here the great camel caravans set out on their long journeys across Mongolia to Siberia and Central Asia. This old frontier mart, retaining its time-honored characteristics, one of the most interesting sights of the Old World, is made accessible by the new railway. The line also carries the passenger in two hours from Peking to Nankow, when the Great Wall of China and the Ming Tombs may be seen. A foreign hotel is operated by the railway authorities at Nankow, where chairs and guides may be secured for the Tombs.

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| Shanghai | to London | in | $13\frac{1}{2}$ | days |
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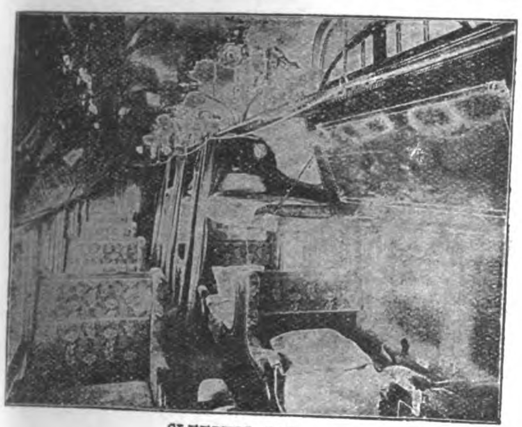
| ,, | ,, | Peking | ,, | $3\frac{1}{2}$ | ,, |
| Dairen | ,, | Moscow | ,, | $8\frac{3}{4}$ | ,, |

# South Manchuria Railway



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THRICE WEEKLY EXPRESS TRAINS.—Composed of excellently equipped SLEEPING, DINING, and 1st CLASS CARS. Operated between DAIREN and CHANGCHUN in connection with the TRANS-SIBERIAN ROUTE and SHANGHAI MAIL STEAMERS.

DINING CAR

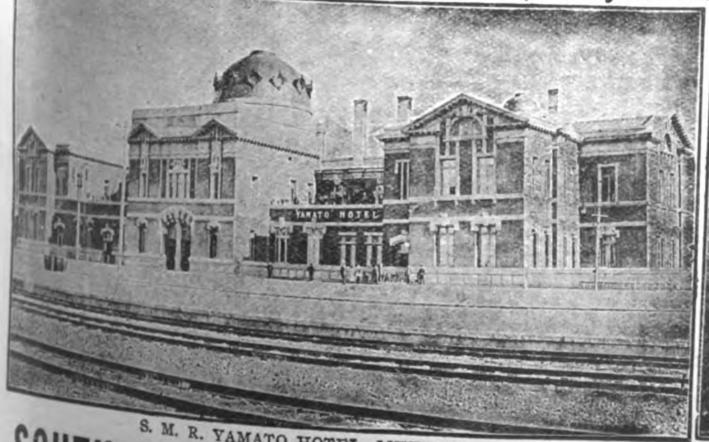
**CONNECTIONS AT MUKDEN.**—These Express Trains connect at MUKDEN with the PEKING-MUKDEN RAILWAY running via TIENTSIN and with the newly organized MANCHURIA-CHOSEN THRICE WEEKLY EXPRESS SERVICE between Changchun and Fusan; the MUKDEN-ANTUNG LINE (now running throughout on standard gauge) connecting with the KOREAN RAILWAY; by this route the journey between Europe and Japan is shortened by two days, and the sea voyage considerably reduced.

**OTHER STEAMER CONNECTIONS AT DAIREN.**—Regular Steamship Services are maintained from DAIREN to MOJI, KOBE, CHEMULPO, TIENTSIN, CHEFOO, TSINGTAU, and other ports in Japan and China.

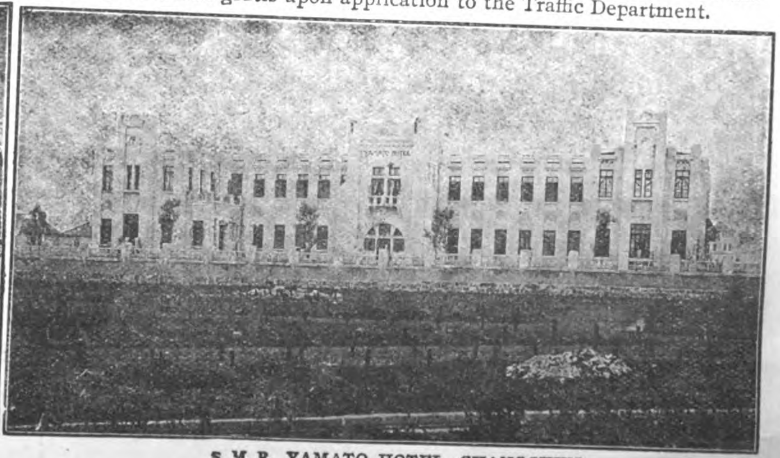
S. M. R. YAMATO HOTEL HOSHIGAURA (STAR BEACH)

**RAILWAY HOTELS.**—YAMATO HOTEL (Tel. Add.: "Yamato") at DAIREN, PORT ARTHUR, MUKDEN, CHANGCHUN, and HOSHIGAURA, all managed by the Company on European lines and providing comfortable accommodation.
At Hoshigaura ("Star Beach"), the finest seaside resort in North China, 5 miles from Dairen, in addition to the hotel, there is a large number of bungalows (for hire at moderate terms), situated in a charming cliff garden and surrounded by beautiful scenery.

**TICKET AGENTS IN EUROPE AND THE FAR EAST.**—The INTERNATIONAL SLEEPING CAR & EXPRESS TRAINS CO.; The NIPPON YUSEN KAISHA, Shanghai; Messrs. THOS. COOK & SON; the REISEBUREAU DER HAMBURG-AMERIKA LINIE; and the NORDISK RESEBUREU. Time-tables, fares, literature, and any information can be obtained gratis upon application to the Traffic Department.



S. M. R. YAMATO HOTEL, MUKDEN



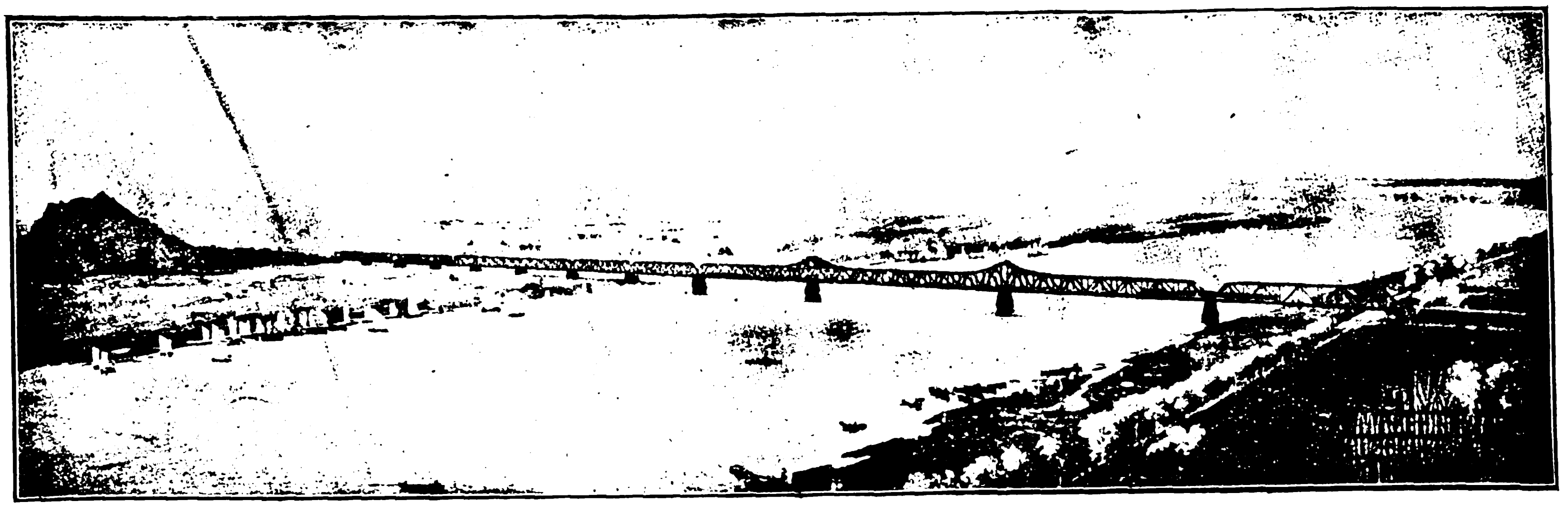
S. M. R. YAMATO HOTEL, CHANGCHUN

## SOUTH MANCHURIA RAILWAY COMPANY, DAIREN, MANCHURIA

Tel. Add.: "MANTETSU" -:- Codes: A. B. C. 5th Ed., A-1, and Lieber's

# CHINESE GOVERNMENT RAILWAYS

# TIENTSIN-PUKOW LINE



THE YELLOW RIVER BRIDGE

**Mukden-Peking-Kalgan-TIENTSIN-TSINANFU-HSUCHOWFU-PUKOW-Nanking-Shanghai.**

**all by rail only.**

Being the **quickest, surest and most convenient** connection between Shanghai on the one and Tientsin, Peking, Kalgan, Mukden and the **Siberian route on the other side,** this railway represents **a saving of many hours, of many troubles,** worries and inconveniences for the busy merchant, the home tripper on short furlough.

The tourist, the globe trotter travelling with more leisure and bent on seeing things, it takes right away from the stereotyped banality of the great ports, takes him through many provinces of the vast republic and shows him **something of the "real" China,** of its people, its history and its beauty.

Express trains equipped with sleeping and buffet cars run once a week each way between Pukow (Nanking) and Tientsin connecting with the through service of the South-Manchuria and Trans-Siberian Railways.

Through mail trains equipped with **buffet cars run daily each way** between the before mentioned termini.

The crossing over the Yangtsekiang between Nanking and Pukow is effected by means of a modern 100-tons twin-screw ferry boat.

Special facilities and **liberal allowances** for passengers' baggage.

Best of **meals and wines supplied** on the trains.

Sanitation under the personal supervision of a **qualified medical officer.**

For further particulars apply to The Traffic Manager, Head Office, Tientsin or to the Agencies of Messrs. Thomas Cook & Sons, The International Sleeping Car & Express Trains Co. or the Nordisk Resebureau.

Telegraphic Address: TSINPURY—Tientsin (Tsinanfu, Nanking, Shanghai).

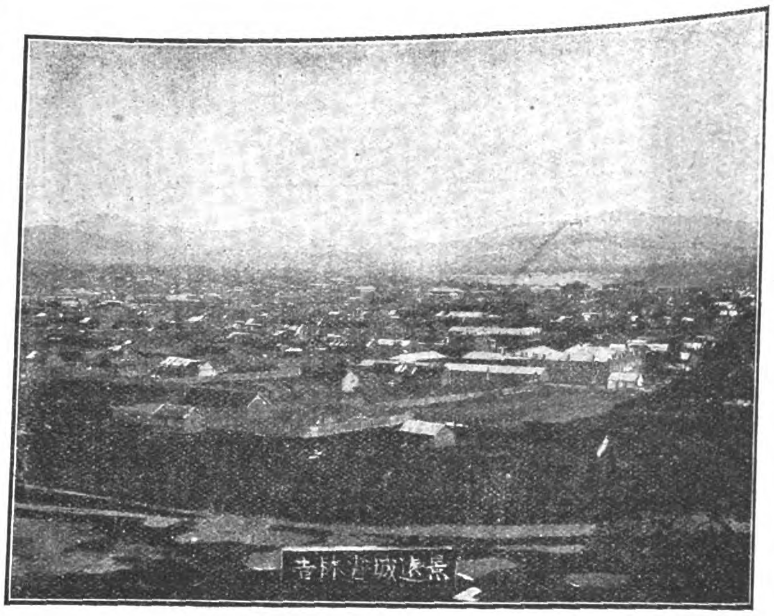
Codes: A B C 5th Edition; Broomhalls' (with Suppl. No. 1).

**Tientsin, May 1st, 1915. The Tientsin-Pukow Railway Administration.**

# 中華民國政府吉長鐵路行車時刻表
# CHINESE GOVERNMENT RAILWAYS KIRIN-CHANGCHUN LINE.

## TIME TABLE.

| DOWN TRAINS Daily Mixed | DOWN TRAINS Daily Mail | | STATIONS. | | UP TRAINS Daily Mail | UP TRAINS Daily Mixed |
|---|---|---|---|---|---|---|
| P.M. | A.M. | | | | P.M. | A.M. |
| 2.30 | 7.30 | dept. | TOUTAOKOU | arr. | 6.25 | 10.47 |
| 2.38 | 7.38 | arr. | CHANGCHUN | dept. | 6.15 | 10.37 |
| 2.45 | 7.41 | dept. | | arr. | 6.10 | 10.31 |
| 3.20 | 8.12 | arr. | KALUN | dept. | 5.40 | 9.57 |
| 3.25 | 8.14 | dept. | | arr. | 5.38 | 9.55 |
| 3.58 | 8.46 | arr. | YINMAHO | dept. | 5.06 | 9.22 |
| 4.02 | 8.48 | dept. | | arr. | 5.04 | 9.20 |
| 4.17 | 9.02 | arr. | HSIACHIUTAI | dept. | 4.50 | 9.05 |
| 4.22 | 9.04 | dept. | | arr. | 4.48 | 9.03 |
| 4.34 | 9.16 | arr. | YINGCHENGTZE | dept. | 4.36 | 8.50 |
| 4.38 | 9.18 | dept. | | arr. | 4.33 | 8.48 |
| 5.03 | 9.40 | arr. | TUMENLING | dept. | 4.12 | 8.24 |
| 5.13 | 9.50 | dept. | | arr. | 4.06 | 8.18 |
| | | arr. | CHAOCHIATIEN | dept. | 3.46 | 7.58 |
| 5.33 | 10.10 | dept. | | arr. | | |
| 5.57 | 10.31 | arr. | HUAPICHANG | dept. | 3.24 | 7.23 |
| 6.02 | 10.33 | dept. | | arr. | 3.22 | 7.20 |
| 6.18 | 10.46 | arr. | KUTIENTZE | dept. | 3.08 | 7.04 |
| 6.20 | 10.47 | dept. | | arr. | 3.07 | 7.03 |
| 6.38 | 11.03 | arr. | KIUCHAN | dept. | 2.52 | 6.45 |
| 6.43 | 11.05 | dept. | | arr. | 2.50 | 6.42 |
| 7.05 | 11.25 | arr. | KIRIN | dept. | 2.30 | 6.20 |

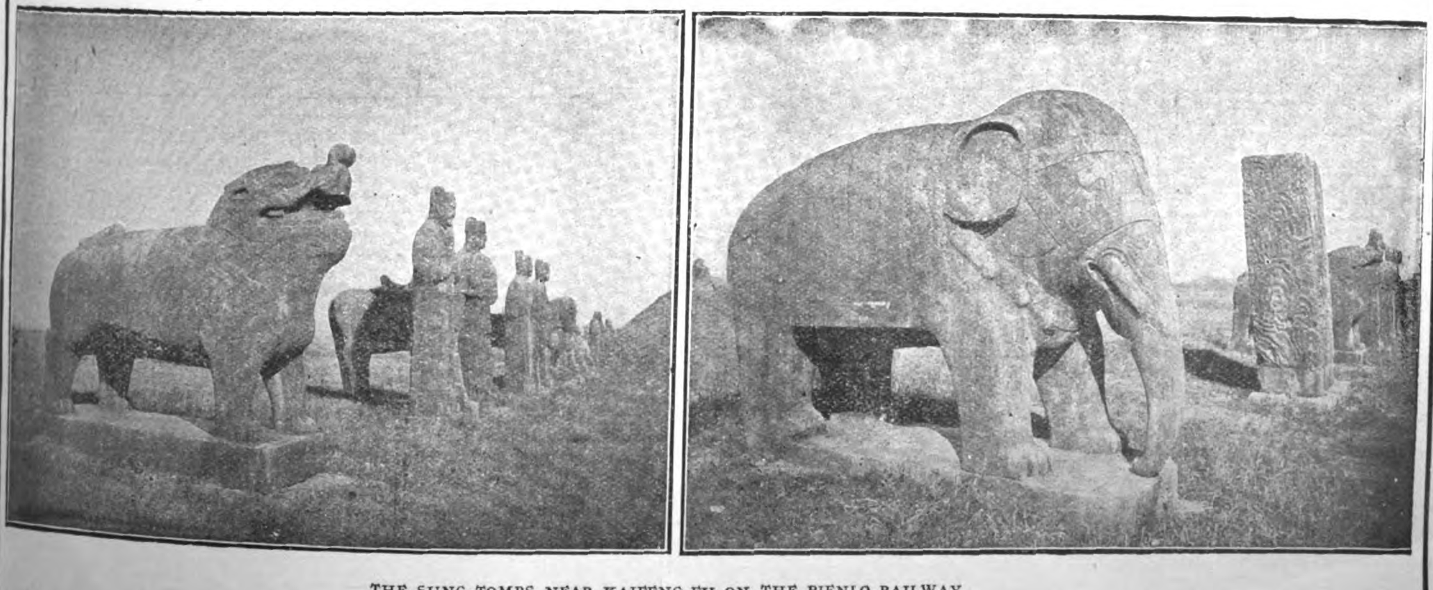


BIRD'S EYE VIEW OF KIRIN CITY

NOTICE:—"dept."=Departure. "arr."=Arrival.
1st May, 1915, and until further notice.

# THE PIENLO RAILWAY

### (KAIFENG-FU TO HONANFU)
### "THE FIRST SECTION OF THE PROJECTED CENTRAL TRUNKLINE"

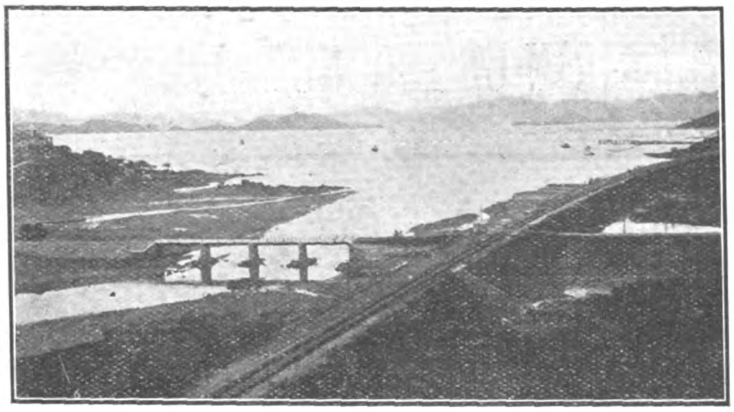


THE SUNG TOMBS NEAR KAIFENG-FU ON THE PIENLO RAILWAY.

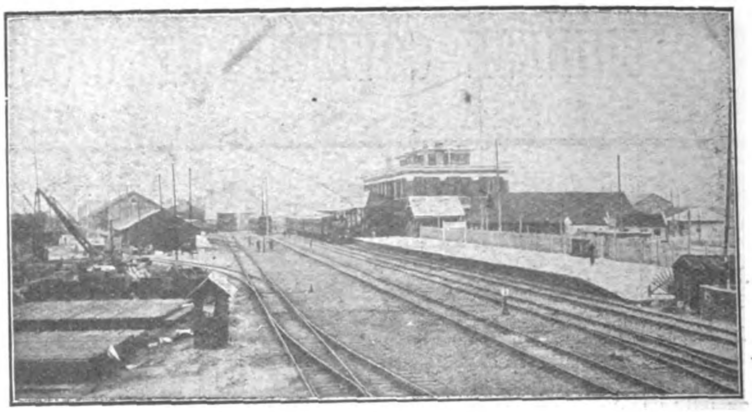
The line connects with the through service of the Peking-Hankow Railway at Tcheng Tchéou, enabling the traveller to visit Kaifengfu, the provincial capital of Honan, and the old capital of the Empire at Honanfu.

# CANTON-KOWLOON RAILWAY

**VIEWS ON THE BRITISH SECTION (22 MILES)** **VIEWS ON THE CHINESE SECTION, 89 MILES. (Chinese Government Railways)**

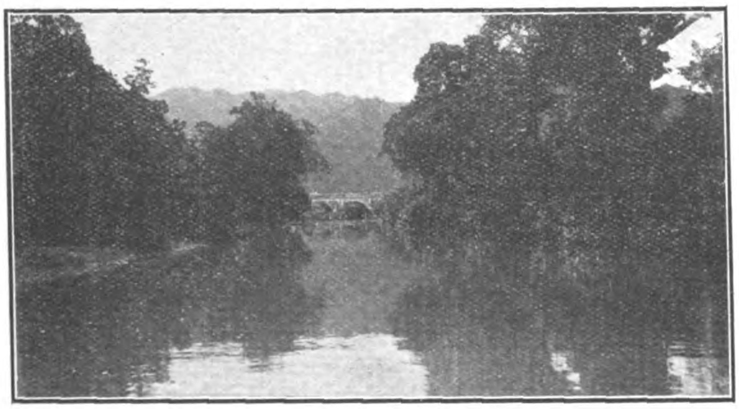


Canton-Kowloon Railway—Approach to Kowloon

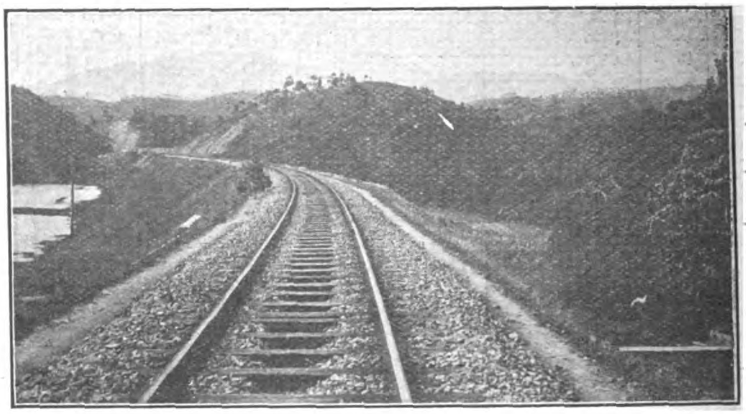


Tai Sha Tan Station, Canton

**QUICKEST AND CHEAPEST ROUTE BETWEEN CANTON AND HONGKONG THROUGH VARIED AND BEAUTIFUL SCENERY**

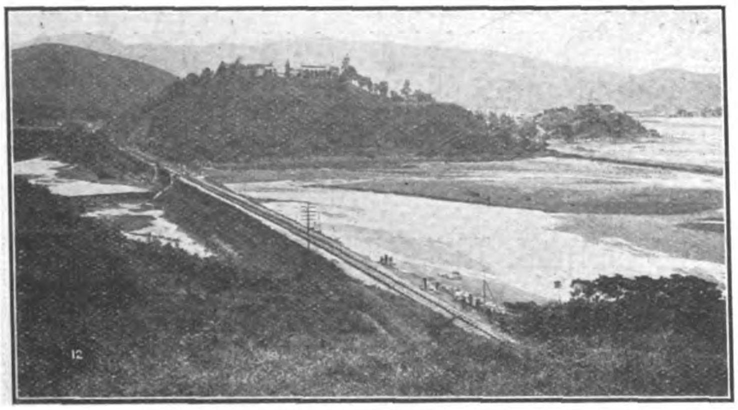


Canton-Kowloon Railway—Scene Along Route

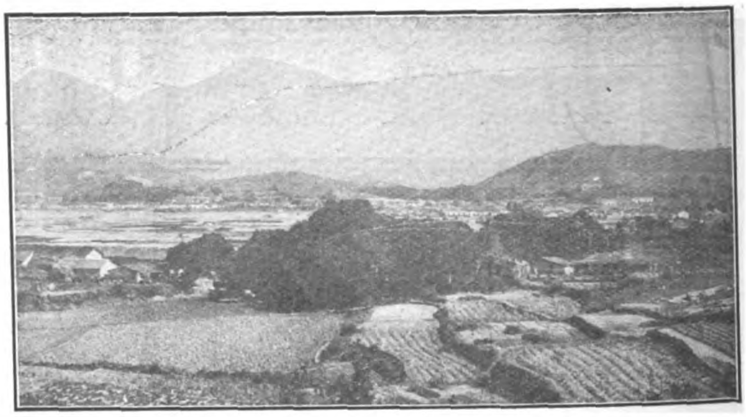


Near Le Loong, Canton-Kowloon Railway

**TWO EXPRESS CORRIDOR TRAINS EACH WAY DAILY—HOT MEALS AND OTHER REFRESHMENTS SERVED**

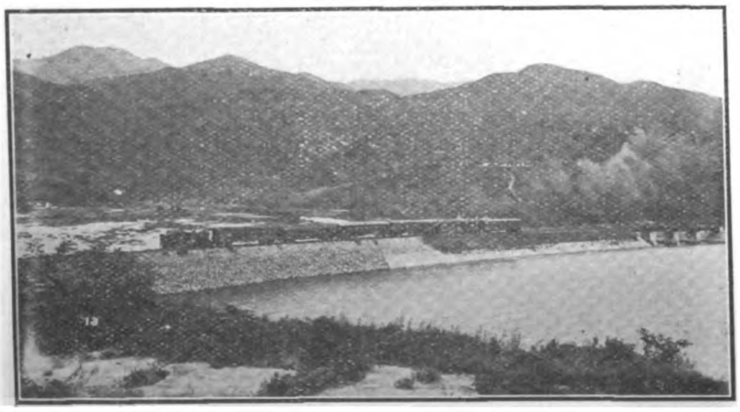


Canton-Kowloon Railway—Crossing Tide Flats

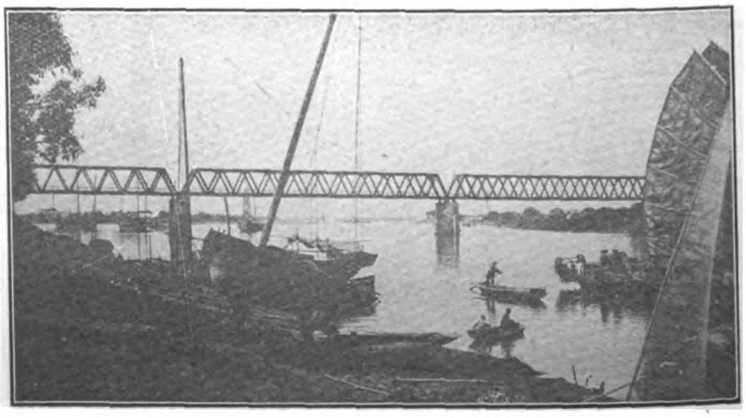


Villages, Canton-Kowloon Railway

**4¼ HOURS BETWEEN UP AND DOWN TRAINS FOR BUSINESS MEN OR TOURISTS AT CANTON OR HONGKONG**



Canton-Kowloon Railway—Embankment Approach to Bridge



East River Bridge, Canton-Kowloon Railway

## TIME TABLE

**Leave Hongkong (Kowloon) 9.30,* 11.15 a.m., 11.55* a.m. & *2.50 p.m. Leave Canton (Tai Sha Tau) 7.00,* 8.30 a.m. 12.00* noon & 4.20* p.m.**
**Arrive Canton (Tai Sha Tau) 10.40 a.m. and 6.10 & 4.30 p.m. 6.20 p.m. Arrive Hongkong (Kowloon) 10.30 a.m. and 4.14, 3.52 & 7.52 p.m.**

**Special terms and special trains for large tourist parties. For further particulars see advertisements or apply to**

***Express** **The Manager (British Section) Kowloon, HONGKONG.** **The Administration (Chinese Section) CANTON.**

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**Most Important Link in the Round-the-World Routes via Siberia.**
**Safest and Quickest Overland Route between Europe or China and Japan.**

**Only 10 hours, Sea Passage between the Continent and Japan.**
**Best Opportunities for studying Unique Conditions in the Far East.**

## *Chosen-Manchuria Express*

**Fusan-Keijyo (Seoul)-Mukden-Changchun**

Weekly Service. Most Up-to-date Accommodation: 1st and 2nd Class Sleeping Cars and a Dining Car.

CONNECTIONS:

With the Trans-Siberian Express.
With the Tokyo-Shimonoseki Train de Luxe.
With the Peking-Mukden Train de Luxe.

## *Daily Express*

**Fusan-Keijyo-Antung**

Twice a day Service, taking all class Cars, besides 1st and 2nd Class Sleeping Cars (Keijyo-Fusan section only) and a Dining Car.

CONNECTIONS:

With trains on the South Manchuria Ry.
With express trains on the Japanese Rys.

## *Through Traffic*

Stations open to through traffic are as follows:—

**South Manchuria Railway.**—
Dairen, Changchun, Mukden, Yingkou, etc.

**Chinese Eastern Railway.**—
Tsitsihar, Manchuria and Harbin.

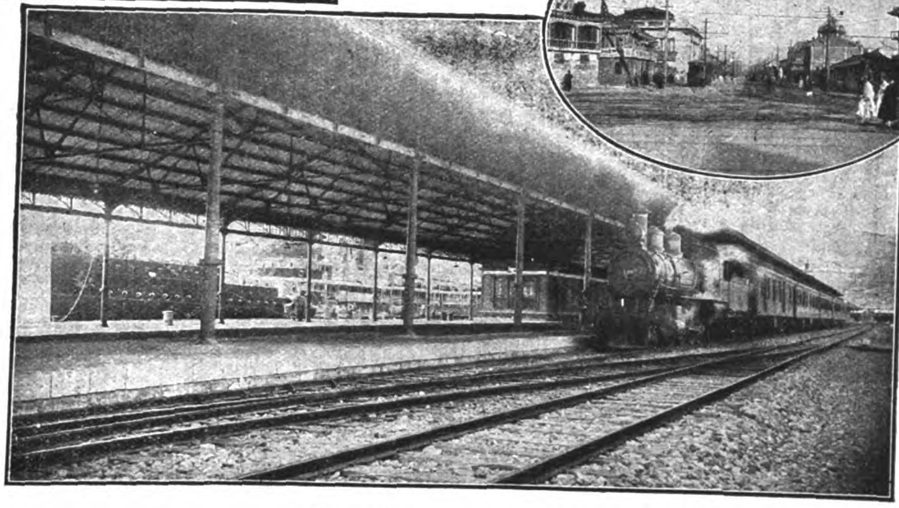
**Chinese Government Railways.**—
Hsinmingfu, Shanhaikuan, Peking, Tientsin, Shanghai, Nanking, Tsinanfu, Hankow, Nankow and Kalgan.

**Russian State Railways.**—
Irkutsk, Odessa, Warsaw, Moscow and Petrograd.

**Chosen Railways.**—
Fusan, Keijyo (Seoul) Heijyo, † Jinsen and † Chinnampo.

**Japanese Railways.**—
(via Chosen)
Tokyo, Yokohama, † Nagoya, Kyoto, Osaka, Kobe, Shimonoseki, Moji and Nagasaki.

† No through traffic to or from points of the Chinese Eastern Railway and the Russian State Railways.



Fusan Pier

A scene in Keijyo (Seoul)

## *Ticket Agencies*

The International Sleeping Car Company; Messrs. Thos. Cook & Son; The Nordisk Resebureau.

## *Hotels*

Under the Direct Management of the Railway Bureau.

CHOSEN HOTEL AT KEIJYO (Seoul).—Cable Add: "CHOHO" 80 bedrooms mostly with bath; Motor-cars meet guests at the station.

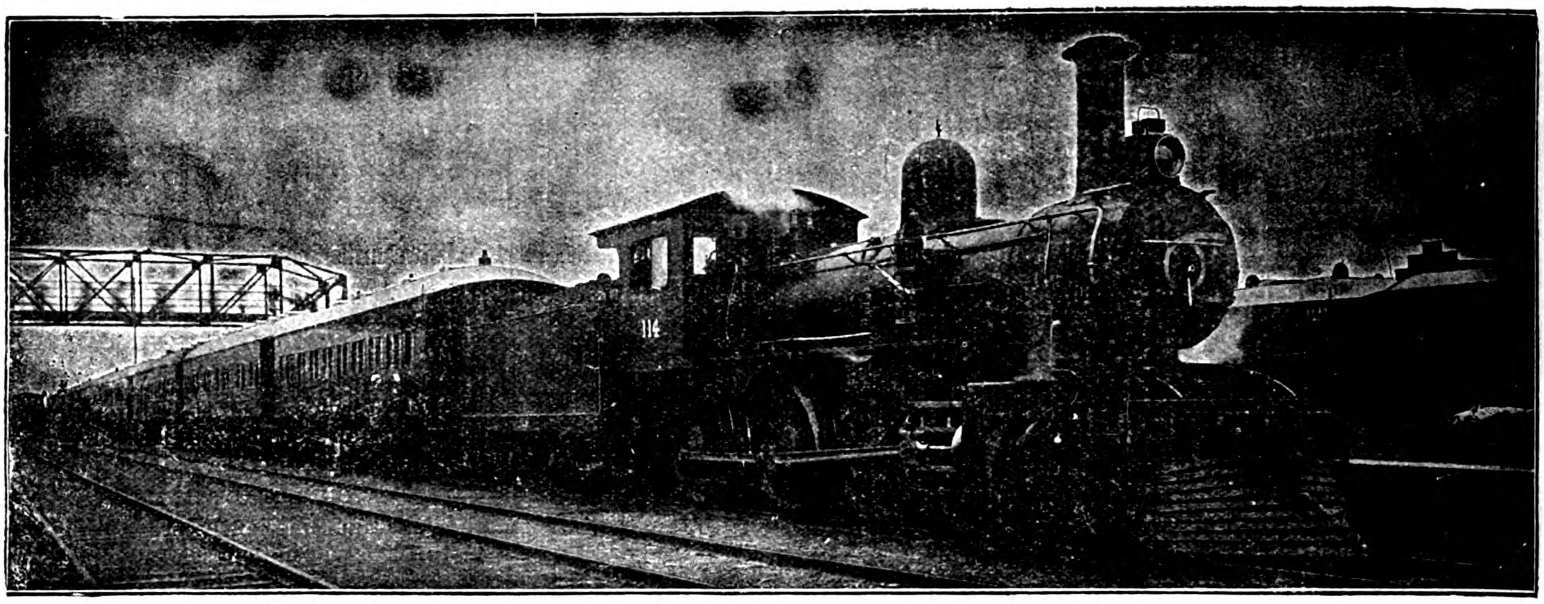
STATION HOTELS AT FUSAN AND SHINGISHU.—The most convenient and comfortable stopping places on the upper floors of the two station buildings.

**FOR FURTHER PARTICULARS PLEASE APPLY TO**

# Railway Bureau of the Government-General of Chosen,

# Ryuzan, Chosen.

**Cable Add: "SENTETS."** **Code Used: A. B. C., 5th Edition.**



TRAIN DE LUXE AT TIENTSIN SETTLEMENT STATION

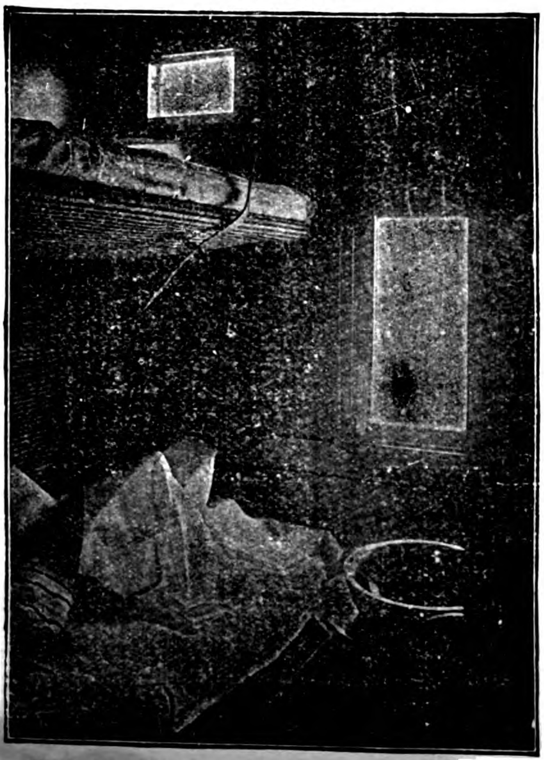
# CHINESE GOVERNMENT RAILWAYS OF NORTH CHINA

THROUGH SERVICE FROM PEKING TO MUKDEN, CONNECTING AT MUKDEN WITH THE SOUTH MANCHURIA EXPRESS FROM TRANS-SIBERIAN ROUTE: AT PEKING CONNECTION IS MADE WITH THE PEKING-HANKOW RAILWAY FOR HANKOW AND YANGTSZE PORTS, AND INTERMEDIATE POINTS REACHED BY THE CHEN-TAI LINE TO TAIYUANFU, THE TAO-CHING LINE, AND THE PEINLO RAILWAY TO KAIFENGFU AND HONANFU. CONNECTION IS ALSO MADE AT PEKING WITH THE PICTURESQUE KALGAN LINE, "THE ROAD TO THE GREAT WALL."

## THE RAILWAYS OF NORTH CHINA PASS THROUGH THE MOST INTERESTING PART OF CHINA

**PEKING:** THE CAPITAL, WITH ITS WALLS, PALACES, TEMPLES AND TOMBS.—**TIENTSIN:** THE GREAT TRADE CENTER OF NORTH CHINA. —**TONGSHAN:** THE LARGEST MINING AND INDUSTRIAL TOWN IN THE COUNTRY.—**SHANHAIKWAN:** WHERE THE GREAT WALL ENDS AT THE SEA.—**NEWCHWANG:** THE BUSY COMMERCIAL PORT OF MANCHURIA. —**MUKDEN:** THE ANCESTRAL HOME OF THE MANCHU DYNASTY. A MINIATURE PEKING, WITH ITS WALLS, IMPERIAL PALACES, TEMPLES AND TOMBS.

PEKING STATION



FIRST CLASS SLEEPING BERTH TRAINS DE LUXE

**THE THROUGH TRAINS ARE EQUIPPED WITH BUFFET AND DINING CAR SERVICE, AND A COMFORTABLE, MODERN TRAIN DE LUXE OF COMPARTMENT SLEEPING COACHES HAS BEEN PLACED IN OPERATION THIS SEASON TO CONNECT WITH THE THROUGH SERVICE OF THE TRANS-SIBERIAN AND SOUTH MANCHURIAN RAILWAYS**

For further information apply to any office in America or Europe of

## The Cie. Internationale Des Wagons-Lits, Thos. Cook & Sons, or Railways of North China

**TIENTSIN, NORTH CHINA**
**By order of Directorate**

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THE FAR EASTERN REVIEW

The following numbers are out of print:

| 1904 | 1905 | 1907 | 1908 |
|---|---|---|---|
| June | March<br>September | January September<br>February October<br>March November | September |

| 1909 | 1910 | 1911 | 1913 |
|---|---|---|---|
| January<br>April<br>July<br>October | March<br>June<br>August | March<br>May<br>August<br>September | January<br>April<br>July<br>August<br>December |

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THE FAR EASTERN REVIEW

5 JINKEE ROAD

SHANGHAI

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OF CHINA

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**Kno-Burn**

**Expanded Metal Lath**

For a plaster base that costs the least, and walls that last the longest, specify Kno-burn exclusively.

It is recognized universally as the *Standard* specification for interior plaster and exterior stucco construction.

In the tropics especially Kno-burn has proved itself the *ideal* base for plaster on walls and ceilings. Light, rigid, durable; easily transported, inexpensive, *fireproof*, it permits of vast improvements in all construction work.

After severe tests under actual local conditions—of heat, fire, wind and storm—it is now specified by the leading architects and builders in *four continents.*

*Before specifying building materials—wherever, whatever and whenever you intend to build—**investigate Kno-burn.***

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Contains full data for construction of stucco houses and formulas for mixing stucco. Illustrated.

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**'Chanelath'**
Contains a complete description of a new ribbed expanded metal for all classes of buildings. Fully illustrated.

**DEALERS are especially invited to communicate with us direct**

**North Western Expanded Metal Co.**

*Makers of Expanded Metal for all Purposes*

**Export Dept: Chicago, Illinois, U. S. A.**

**Cable Address: 'Knoburn'**

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**SOCONY ASPHALTUM** can be supplied in all degrees of hardness, suitable for use without the admixture of lighter oils, and is adapted to the following processes.

Permanent Road Construction.
Roofing, damp coursing, factory floors and tennis courts.
Pipe dipping.
Treatment of railroad ties, telegraph poles and posts.
Coating for structural steel and concrete sewer pipes.

**SOCONY ASPHALTUM** can be supplied in grades having **melting points as high as 221° F.** thus adapting it to use in the hottest climates.

**SOCONY ASPHALTUM** is not an experiment, having been in **successful use for many years** throughout the United States.

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Full information relative to its use and prices may be obtained from

**THE STANDARD OIL COMPANY OF NEW YORK**

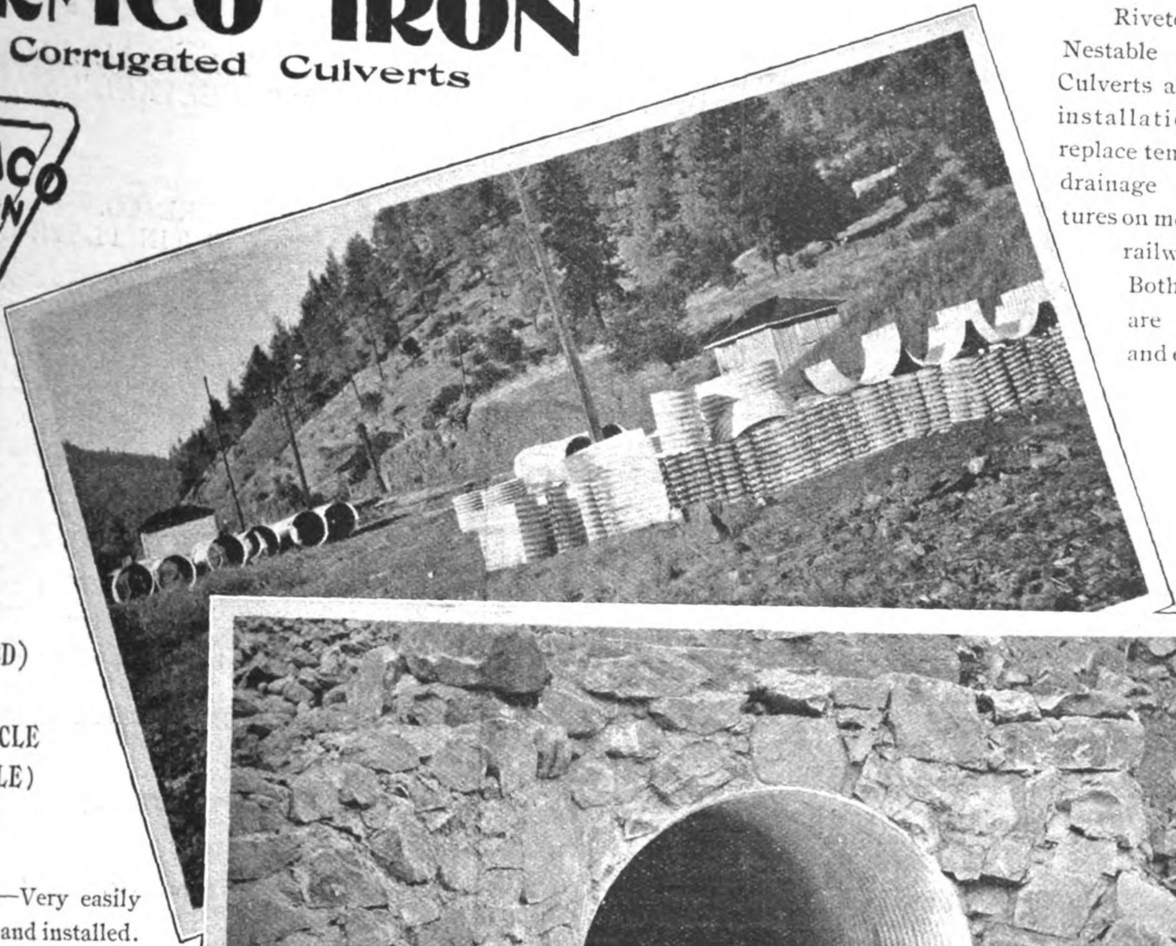
LUBRICATING OIL DEPARTMENT

**11 & 12 Canton Road, Shanghai**

# ARMCO IRON

## Corrugated Culverts

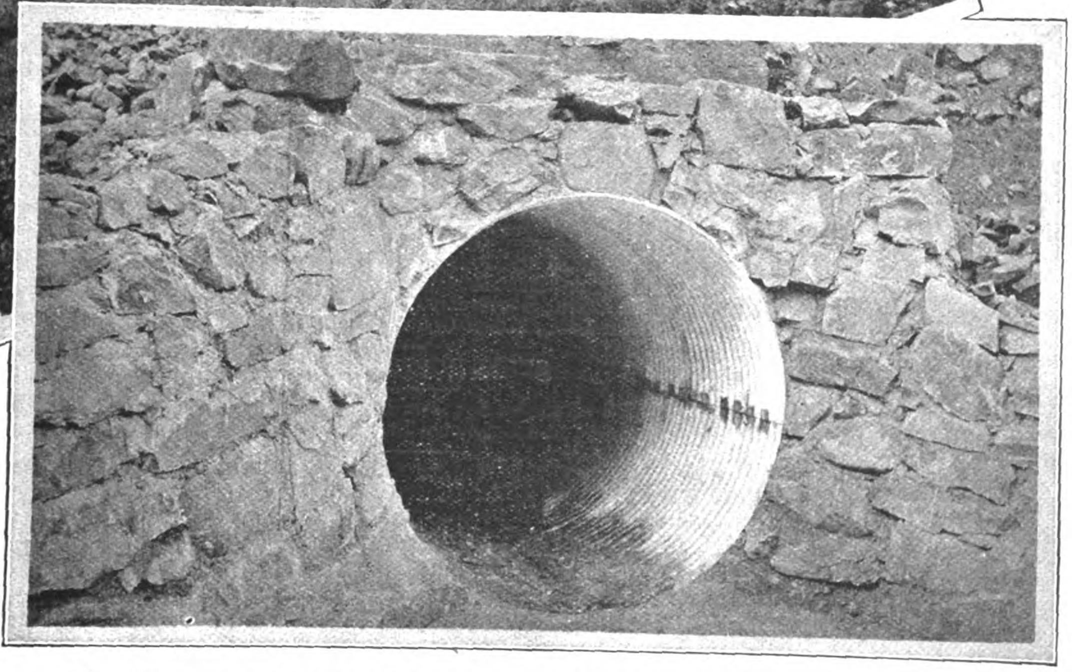
ARMCO IRON



Riveted and Nestable Armco Culverts awaiting installation to replace temporary drainage structures on mountain railway line. Both types are practical and effective.

FULL CIRCLE (RIVETED) AND HALF-CIRCLE (NESTABLE) TYPES

Convenient—Very easily transported and installed. Reliable—The corrugated form and over-lapping joints result in immense strength and resiliency. Lasting—By reason of its unequalled purity and evenness and the scientific care exercised in every stage of its manufacture.



Five-foot Armco Iron Nestable Culvert, under Heavy Fill and the Tracks of a Transcontinental Railroad.

# ARMCO IRON

## Resists Rust

and ensures long and faithful service.

This is the material for Real Economy in the forms of Galvanized Roofing and Siding, Gutters, Valleys, Pipes, Flumes, Culverts and other exposed metal installations.

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MANILA, P. I.

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Middletown, Ohio, U.S.A.

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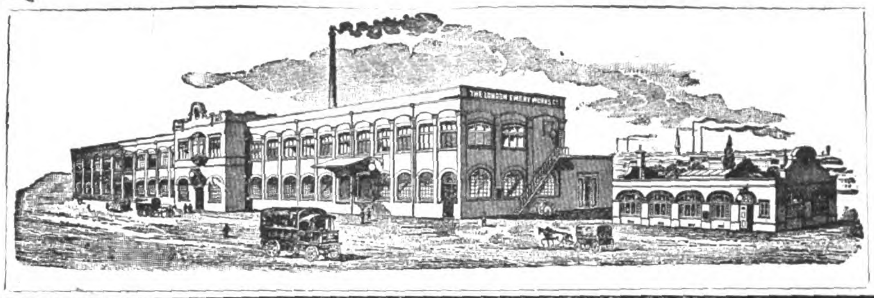

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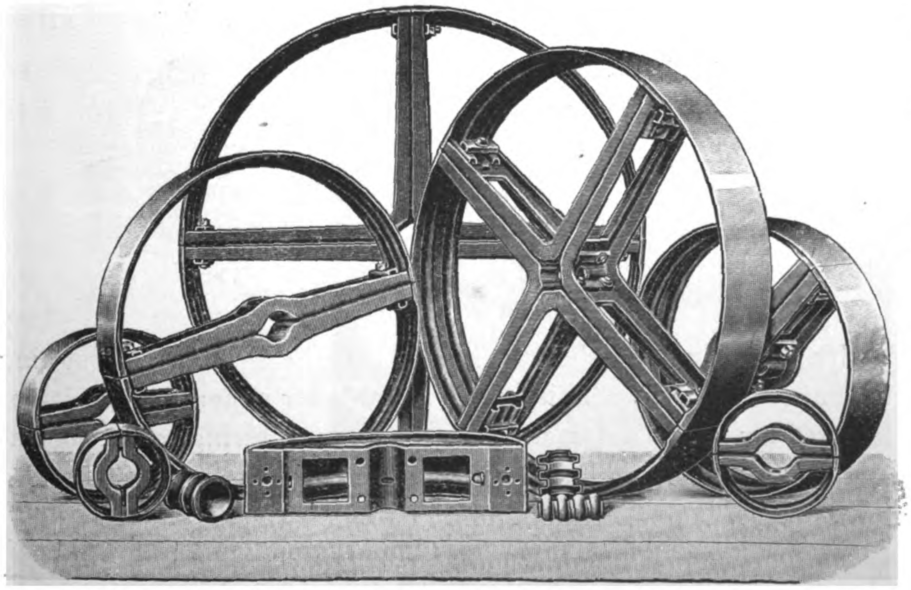

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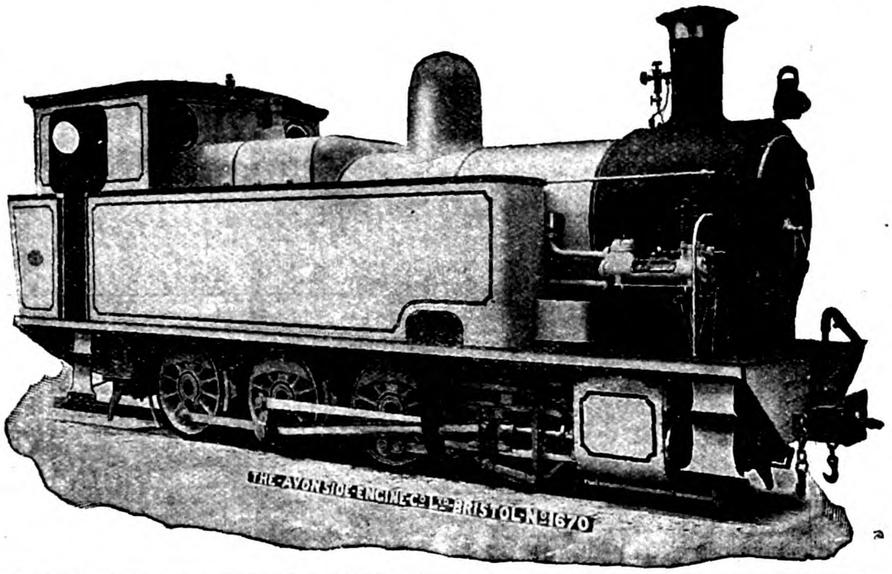

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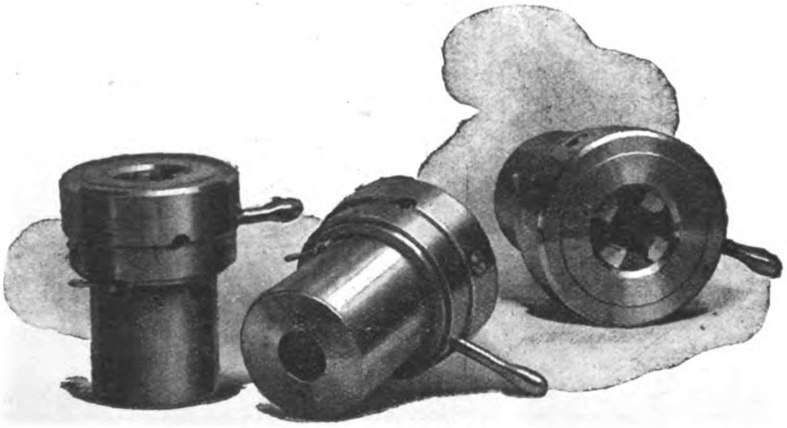

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THE FAR EASTERN REVIEW
COMMERCE :-: ENGINEERING :-: FINANCE

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# THE SOUTH GRAND CANAL CONSERVANCY SCHEME

[REPORT BY MR. H. VAN DER VEEN, CONSULTING ENGINEER TO THE NATIONAL CONSERVANCY BUREAU]

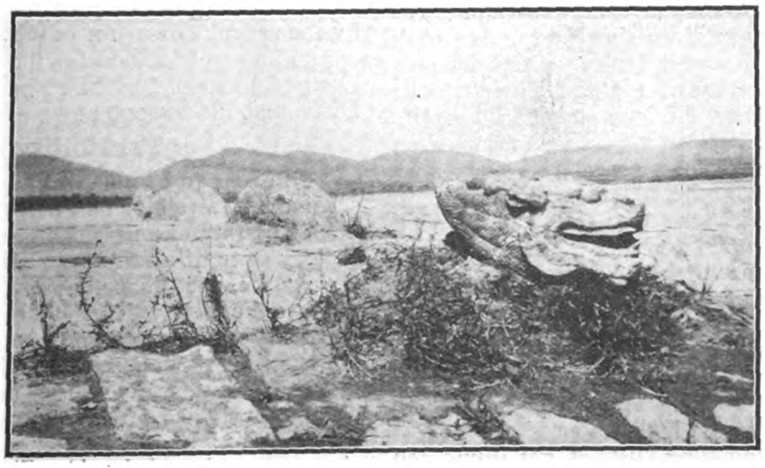
This conservancy work, of which a plan has been drawn up by the South Grand Canal Conservancy Bureau, under the able directorship of Mr. F. Pan, comprises the improvement of the South Grand Canal in Shantung, south of the Hwang-Ho, (Yellow River) as well as the conservancy of the Ta Ching Ho, Wen Ho and Sze Ho, which finding their rise in the Western Hills of Shantung, have as their only outlet the Grand Canal, with the exception of the Ta Ching Ho, which partly empties into the Yellow River.

As these rivers are all mountain rivers subject to sudden rises, and as they have moreover no sufficient outlet at present, inundations are bound to occur, causing year after year not only enormous losses, but also turning large areas of the country which under normal circumstances would have been fertile land, into permanent swamps.

### Historical Review

Before the Grand Canal was made the various rivers which drain the Western mountains had, with the exception of the Ta Ching Ho, no outlet to the sea at all, but formed large lakes in the low country at the foot of the hills. It was by connecting those lakes, such as the Wei Shan Hu, Chao Yang Hu and Tu Shan Hu, that the canal was most probably formed. Further north the canal is for the greater part artificial, so also may be the part south of the Wei Shan Lake. The total length of the Grand Canal from where it enters Shantung in the South to where it meets at present the Yellow River is 279.20 kilometres. To overcome the difference in elevation, not less than 33 locks had to be built, the highest section being between Kai Ho Chun and Yuang Ko. In order to feed different sections of the canal enormous engineering works had to be made, one of the most important being the Tai Tsun Ba (or weir) in the bed of the Ta-Ching Ho, whereby during the low water season all the water is forced to follow the Wen Ho.

In my opinion this river from the dam to the Grand Canal is artificial and only made to feed the higher sections of the Canal. Not far from Wen Shang Hsien another dam is built, the Ho Chia Ba, whence two channels lead to other sections.

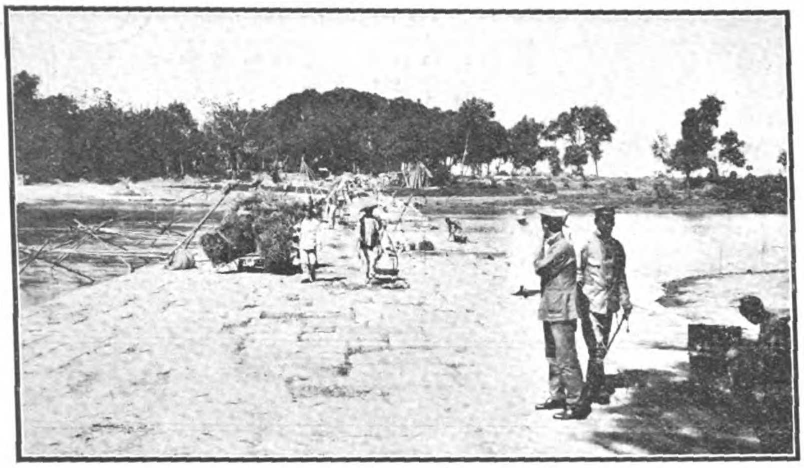


THE NGO-YU—"FISH THAT FIGHTS THE WATER"—ON A WEIR

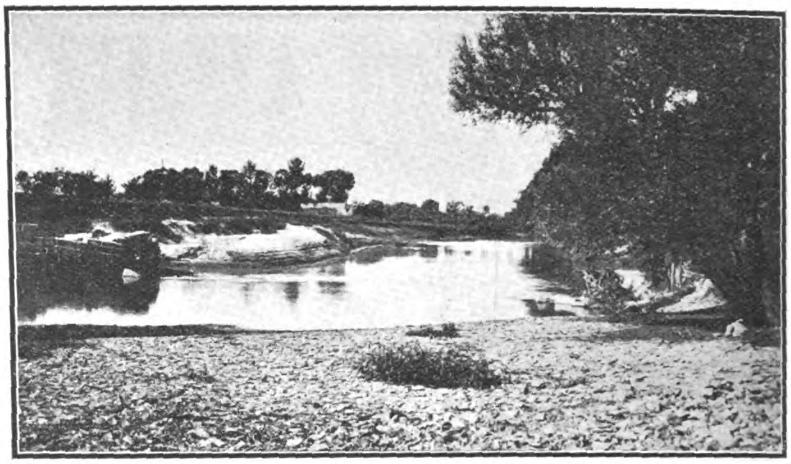
The Tai Tsun Ba was necessary to prevent the water from the Wen Ho following the Ta Ching Ho, which at the time the Canal was made had its own free bed to the Gulf of Pechili. Another important work is the Kin Ko Ba, near Yen Chow, or Tze Yang Hsien, in the Sze Ho, in order to raise the water-level to a certain height so that a part of the water could be used to feed the Grand Canal near Hsi Ning Hsien. For this purpose the Fu Ho was dug also with a lock at the entrance, the He Feng Ko. The Kwang Ho, branching off from the Wen Ho, was probably another feeding canal, but as it proved insufficient, it was abandoned and the Kin Ko Ba works, including the Fu Ho, were made. In order to supply the Grand Canal with water during the dry season the Mata Hu, Su Shan Hu, Nan Wang Hu and Ma Chang Hu were used as storage basins and supplied with locks to regulate the amount of water. Most of the works are still in very good condition and bear proof of the high engineering capacity of olden times, of which the Chinese nation has every reason to be very proud. It was a gigantic undertaking for those times, about five centuries ago, when so little about engineering was known, and high respect is therefore due to those who were able to bring the work to such a good end.

During ages the canal has been in good condition, although it must naturally have suffered much by the deposits of the rivers which used it as an outlet to the sea, which they did not have before. There is no doubt that in this respect the canal was also an improvement on the drainage of the country. That much excavating had to be done to keep the fairway deep enough is clearly shown by the enormous dykes or mud deposits, almost hills, which are seen at several places along the banks of the canal.

This satisfactory state of affairs lasted until in 1851 the Hwang Ho broke through its North Dyke, not far from Kai Feng Fu, and flooded the low lying country in the South West of Shantung Province, looking for another outlet towards the sea which it found by usurping the bed of the Ta-Ching Ho and which it has kept up to the present moment. This put an end



KIN KO PA NEAR YEN-CHOW, ACROSS THE SZE-HO



PART OF WEIR AT CHANG-CHIA-CHIAO

to the usefulness of the Grand Canal, which, specially in those sections nearest to the Yellow River, got filled up with deposits to such an extent that navigation was henceforth rendered impossible. The connection with the Yellow River was re-established by digging a new channel, the Po Ho, which connects the Grand Canal near a village called An Chan Chun with the lower Ta-Ching Ho.

Already on former occasions during temporary escapades of the Hwang Ho (Yellow River) had this region to suffer and it is said that some 200 years ago the entire area was flooded, of which the swamps West of the Yen Ho still bear proof, but never was the harm so thoroughly done as in 1851. Not only was the Grand Canal rendered useless, but the Ta-Ching Ho lost its own free outlet to the sea, which is the cause of yearly repeated serious inundations.

### Some Causes of the Present Unfavourable Conditions

As said already in the preceeding the Ta-Ching Ho lost its own outlet towards the sea since the Hwang Ho took its place. The consequence is that the former river depends entirely upon the latter, that is to say, if the water-level in the Yellow River is high the Ta Ching Ho cannot get rid of its water, and as the time for freshets in this river very often coincides with the time that the Yellow River is swollen, only very little water can escape along the old course and has to follow another way. Consequently the Wen Ho has to bring down more water. This causes again a rise in the Grand Canal which affects the discharge of the Sze Ho. In case freshets should happen to take place simultaneously in the Wen Ho and the Sze Ho, dyke-breaks, and consequently inundations, are bound to occur. But even without dyke-breaks in the Wen Ho, Yen Ho or the Sze Ho the result is already bad enough, for on account of the water of the Ta-Ching Ho not being able to escape quickly enough, hindered by the high water of the Yellow River, large areas such as the Tung Ping District, get inundated and remain practically in that condition during the entire rainy season, so that cultivation of the land is out of the question. Probably the bad effect would not have reached the present extent if the large storage basins such as the Ma Ta Hu (lake), Nan Wang Hu and Ma Chang Hu, together covering about 120 square kilometers, still existed, and if moreover the connection between Nan Wang Hu and Chao Yang Hu had been in good condition. But as it is, these lakes do not now exist as they have been silted up and are now cultivated land, and the Niu To river has been silted up also.

Thus the only thing the Wen Ho can do is to fill the Su Shan Hu and send the rest of its waters through the Grand Canal. This channel is, however, entirely incapable of conveying large quantities of water and consequently the water in Wen Ho and Ta Ching Ho will rise until the unavoidable dyke-breaks take place.

### The South Grand Canal, Conservancy Bureau's Scheme of Improvement

In rough outlines the plan, which is divided into three sections, is as follows:—

The first section deals only with the improvement of the Ta-Ching Ho. This improvement is to be carried out by building dykes on both sides of the stream from Tung Ping Hsien down to the Yellow River so as to prevent the water from flooding the Tung Ping District.

The second section deals with the improvement of the Wen Ho, Sze Ho and Grand Canal, and in connection herewith, the reclaiming of the swamps.

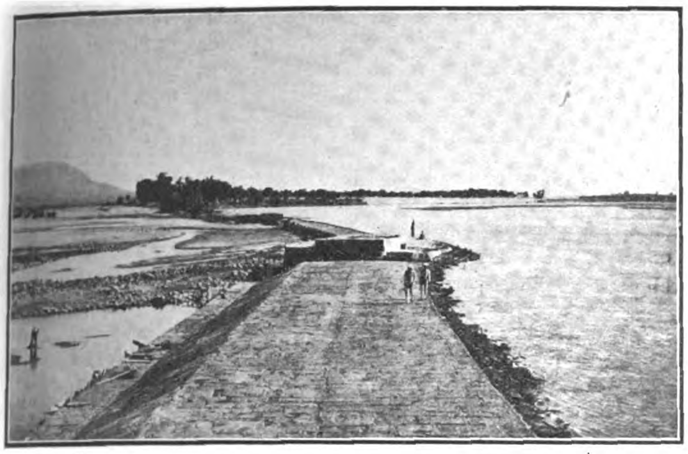
These improvements are thought to be attainable as regards the Wen River by increasing the outlet, that is, by digging out the silted up canals in the Nan Wang Lake so as to establish a new connection through the Niu To Ho with the Nan Yang, Chao Yang and Wei Shan Lakes. The Sze River is to be improved by rectifying and enlarging the Toung Sze Ho so as to be able to conduct more water towards the Tu Shan Lake. The Grand Canal will be improved merely by dredging the shallow parts.

According to the plan the costs could be entirely defrayed by the revenue of a tax of $1.00 per mow of reclaimed land, amounting to $826,000 for the first year. This is for Tsi Ning District 300,000, for Tungping district 326,000,—and for Yu Tai District about 200,000 mow.

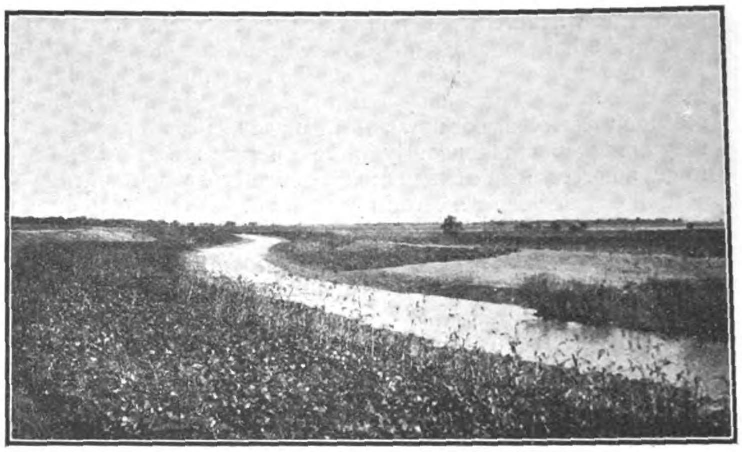
### Feasibility of the Scheme

In order to be able to judge better whether the contemplated scheme is feasible or not, it is necessary first to go more into the details of the reasons which are the cause of the present unsatisfactory state of affairs. As already said, one of the main causes lies in the fact that the Ta-Ching Ho lost its own free outlet because the Yellow River took its bed. Now the bad effect this river has on the discharge of the Ta Ching Ho would never have taken such proportions if the Hwang Ho did not bring down so much silt, but as it is, the mouth of the Ta Ching Ho gets absolutely choked up during every rise in that powerful river and therefore although the water may drop all of a sudden the discharge capacity of the Ta Ching Ho is but slightly increased. The reason of this is that the Ta-Ching Ho first has to make a new channel but as this channel making without human assistance is but a very slow process during which dangerous rapids are formed, it very often occurs that before the barrier has been removed altogether a new rise in the Yellow River builds it up again. This is a most serious question and in my opinion everything should be done to remove this evil if possible, for if the Ta-Ching Ho, as soon as the water in the Yellow River falls, could regain its full capacity, inundations as happen now in Tung Ping District, even if the other conditions remained unaltered, would never reach the extent they have now. It is therefore most necessary to study carefully this question, of which at present no data are as yet available.

Owing to the incapacity of the Ta-Ching Ho the Wen Ho has to bring down the bulk of the water, thereby raising the water in the Grand Canal, which waterway has only a very limited capacity. It is obvious that to improve the conditions this Canal must be relieved and the solution suggested by the South Grand Canal Conservancy Bureau to make a connection through the Nin To Ho with the Chao Yang Hu and Wei Shan Hu is therefore a very good one.



THE TAI-TSUN WEIR



REMAINS OF GRAND CANAL BETWEEN YELLOW RIVER AND ONHON CHUN.
(THIS PART IS SILTED UP)

The necessity of relieving the canal becomes the more urgent as further South near Liu Chiao the waters of the Sze Ho have to be received also. This river is of a similar nature as the Wen Ho, that is, subject to sudden freshets. Near Chiang Chia Chiao the Sze Ho splits into two branches, one the Toung Sze Ho leading towards the Fu Shan Hu, and the other the Hsi Sze Ho towards the Grand Canal. The Tu Shan Hu is a storage basin which is through eighteen openings connected with the Canal, which is again connected on the opposite side with the Chao Yang Hu. As however the Toung Sze Ho is considerably silted up, the immediate effect of the storage basin is not felt during a freshet and consequently the greater part of the water runs down the Hsi Sze Ho towards the Grand Canal. Very often this waterway is already in a high stage owing to the water from the Wen Ho, but even if that should not be the case the waterlevel would quickly rise only by the amount of water coming down the Sze Ho and consequently the water-level in that river will rise, too often resulting in serious dyke-breaks. It is evident that also in this case an improvement of the discharge of the water would solve the problem, which the South Grand Canal Conservancy Bureau thinks, and in my opinion rightly, to be able to find by improving the Toung Sze Ho.

It is now the question to ascertain whether the necessary increase of the discharge of the waterways in question can be obtained by the proposed scheme or not.

In short, the proposed scheme comprises the improvement of the Ta-Ching Ho, Wen Ho, Niu To Ho and Sze Ho (Toung and Hsi Sze Ho).

Would an improvement of the above mentioned waterways solve the question?

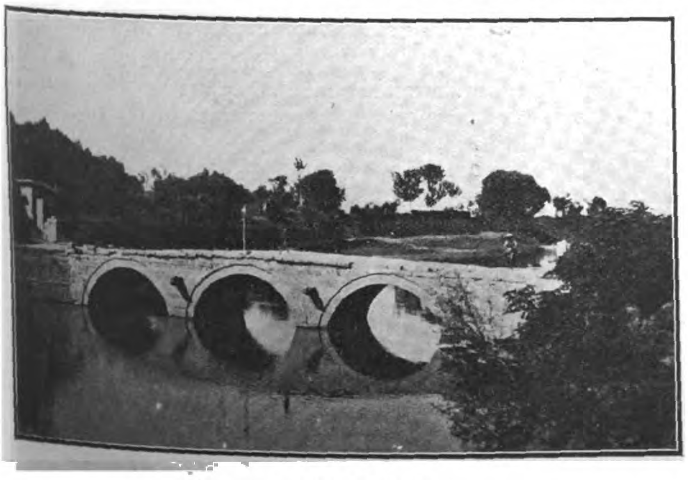
The answer to this question is that the suggested improvements solve the problem if at the same time the storage capacity of the various lakes combined with the discharge capacity of the Ta-Ching Ho and the Grand Canal below the Wei Shan Lake are sufficient to cope in such a way with the amount of water brought down by the various rivers that the water-level in those rivers does not rise any more to a height which may cause dyke-breaks and consequently inundations, and moreover that the water-level in the storage basin does not get raised to a height whereby drainage of the low lying country is impossible.

What has to be determined first, therefore, is the amount of water which may be expected and secondly what is the storage capacity of the lakes and what the capacity of the outlet (Grand Canal).

In view of the sudden rises in these mountain rivers the storage capacity of the lakes is the most important, as their outlet is small and only able to deal with the accumulated water over a long period. In time of freshets everything depends, therefore, upon a quick discharge towards the storage basin and the capacity thereof, whereas the final outlet only plays a secondary role unless the freshets should last very long, in which case it is possible that the water-level in the storage basins gets raised too high so that it interferes with the proper drainage of the country. Now the Grand Canal is an outlet with only a very limited capacity, specially during the summer, on account of the enormous quantity of water it receives lower down from the Ye Ho. It is, therefore, very desirable that the condition of the Grand Canal below Wei Shan Lake be seen to as well, and that section of the Grand Canal would benefit enormously if the Ye River would have its own outlet to the sea.

In order to collect the necessary data, the South Grand Canal surveying Bureau was established, which commenced its task early last year. Although much work, and very good work, has already been done, it is not entirely finished yet, and it is therefore not possible to form a definite opinion just now, on the feasibility of the scheme. For this the most elaborate data are necessary. Moreover the entire survey of the country must be finished first if possible with contour lines, but as this cannot be done, owing to shortness of funds, only the low lying land could be levelled and cross sections taken of the lakes and swamps.

The work was expected to be finished by the end of the year but besides the survey more is necessary to make a plan, as f.i.



BRIDGE OVER SZE-HO RIVER

TRAVELLING BY WHEELBARROW IN SHANTUNG

discharge measurements and tide-gauge readings. Already several discharge measurements have been taken and records are kept of tide-gauge readings along the rivers, but these measurements should be done daily during the whole summer, or rainy season at least, and not now and then as has been the practise. If they are taken simultaneously in the different rivers it is possible to get a correct idea of the amount of water brought down on a certain day or during a certain period, but with the available data this cannot be ascertained. It would be infinitely better even if two summers could be spent in collecting the data, for rainfall is very irregular, and the more data obtained the nearer we get to a fair average, and on this the calculations have to be based. In order to be able to take simultaneous discharge measurements a larger staff is of course required, as each gauging station wants its own men, but it is not necessary to have in one river several places where the discharge is measured. For each river one gauging station is sufficient. For instance one station in the Wen Ho above Tai Tsun Ba and one in the Sze Ho above Kin Ko Ba would be enough to learn the amount of water brought down, and if one gauging station were established in the Grand Canal at Han Chwang we would be able to determine exactly how much water is being stored up in the lakes.

There are also kept records of the rainfall but this has been done only in one place, which is not sufficient. Records of rainfall although they have no immediate value in connection with the drawing up of a plan are later on very useful to determine the percentage of the rainfall which is brought down by the rivers, but in that case several rain-gauges should be established all over the catching basin of which careful records should be kept during a period of at least 10 years.

When the surface of the storage basins and the height of the water-level therein are known (this is after the preliminary work is finished), it can be figured out how much this level will rise during freshets in the rivers, and knowing the outlet of the lake we can also figure out how long it will take to lower the water again to its ordinary level. This is necessary in order to determine whether the at present continually inundated low country and swamps are able to drain off on the lake. In other words, whether reclamation is possible or not. As it is the idea to defray the costs of the improvement out of the sale of, and taxes on, the reclaimed land, this is most important.

I will endeavour to give, based on data already collected, an illustration of how a calculation has to be made. However, it has to be borne in mind that as the calculation is based on data which are entirely insufficient as yet, the result is only to be accepted under very much reserve, although, as will be seen, it is of sufficient value to prove that the contemplated scheme is worth going into more carefully. I mean to say that it is worth while to spend more money on a proper study of the project.

According to the map used the Su Shan Hu has a surface of 45 square kilometers, the Ta Shan Hu 204 sq. K.M., the Chao Yang Hu 142 sq. K.M., the Wei Shan Hu 408 K.M. and if we take it for granted that of the swamp through which the Niu To Ho runs 73 sq. K.M. can be reclaimed, there remains 100 sq. K.M. which may be considered as storage basin, so that the total surface of the above mentioned lakes amounts to roughly 900 sq. K.M. or 900,000,000 square meters. By a rise of the water-level of 1 m. the amount of stored up water is consequently 900,000,000 cubic meters, and if the level should rise 2 meters it would mean that 1,800,000,000 cub. m. of water had been flowing into the lake so that the amount of water which had been disposed of would have been considerably more as we did not take the water into consideration, which would have drained off through the lake at Hanchwang. This is an enormous quantity.

Now supposing that the Wen Ho and Sze Ho are in flood at the same moment. Let us take the highest discharges which were recorded up to the middle of August of last year, that is for the Wen Ho and Sze Ho each 130 $M^3$ per sec. or together 260 $M^3$. Let us further suppose that the Pei Ma Ho and other minor rivers brought down 40 $M^3$ then is the total amount of water brought down per second 300 cub. M. or 1,080,000 cub. M. per hour or 25,920,000 c.m. per day. This means that if during 35 days in succession the above mentioned amount of water had been brought down the water level in the lakes would only have risen 1,00 m.

It is quite probable that during a shorter period more than the above mentioned amount of water per day has been brought down, however, even if this should occur, it is unlikely that average will amount to more than what I presumed. Besides, I did not take into consideration the amount of water which may have run off through the Ta Ching Ho or Grand Canal. I think, therefore, that the above calculation is on the safe side and that I may draw the conclusion that as far as the storage capacity of the lakes is concerned the South Grand Canal improvement scheme is quite practicable.

This question being settled, it remains now to be seen whether it is possible to make the entrances to the lakes such that sudden rises in the river can either not occur or, if they do occur during extraordinary freshets that they are only limited in height and duration.

This is a very important point, for if the storage capacity of the lakes were ten times larger and the approaches to the lakes insufficient, that large storage capacity would not help at all.

The Grand Canal near Liu Chao rose from April to August about 3 M. although the Sze Ho and Wen Ho did not bring down such extraordinary quantities of water. Moreover, we note that the waterlevel of the Canal at Hsu Chia Ying Fang (this is just below the Fu Shan and Chao Yang Hu) only rose 0.80, which most probably would have been even less if the connection between that lake and the Wei Shan Hu had been better. From this the conclusion may be drawn that the lakes above mentioned had enough capacity to store the water of the Sze Ho and partly of the Wen Ho as well, without getting raised too much, but also, and this is certainly not less important, that the connection between the Sze Ho and the lakes was entirely insufficient to cope with the quantity of water brought down by that river in due time. For if the Toung Sze Ho, which is the connection, had been able to dispose of more water, the Si Sze Ho would only have received a small quantity and consequently the Grand Canal would never have been filled to the height which it reached on the 7th of August.

The waterlevel in the Grand Canal at Fen Siei Ko rose during the same period from about +35 m. to +39 m. Although the height of the waterlevel at that place depends, to a certain extent, on the fact of whether the lock at Liu Lin is closed or not, it would certainly never have come so high if the canal could have had by open locks sufficient capacity. That this waterway is absolutely insufficient as a conveyance of water is, therefore, I think sufficiently proved by the above facts, but besides it should not be used as such, as it is meant to be only a fairway, and a strong current would undoubtedly not be in the interest of shipping. Consequently it is necessary, in order to improve the present conditions, to find for the Sze Ho and for the Wen Ho proper communications with the lakes independent of the Grand Canal.

For the Sze Ho the solution is to improve the Toung Sze Ho, for the Wen Ho to open the ditches in the Nan Wang Hu, to enlarge the Niu To Ho and to improve the connection between the Chao Yang Hu and the Wei Shan Hu or to improve the discharge of the Ta Ching Ho into the Yellow River, which if possible would be better.

### Calculations of the Required Cross Sections of the Connections Between Rivers and Lakes

Although, as I said already, it is not possible with the data on hand to give any definite solution, they are nevertheless sufficient to assist in forming some rough idea of the amount of work which will have to be done.

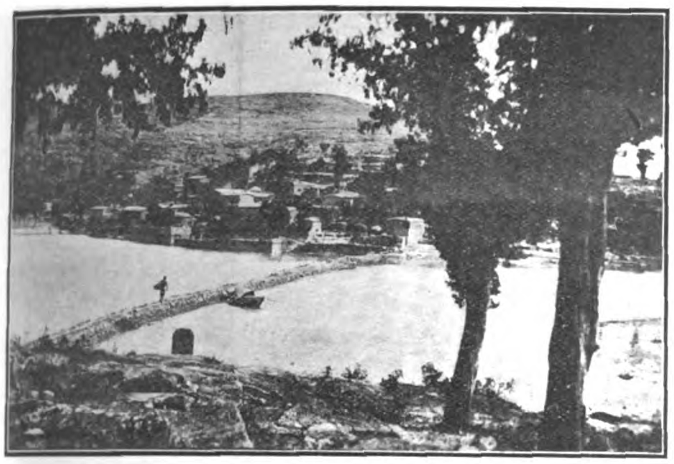
I will figure out here the area of the cross sections of the connections between river and lakes which are necessary to be able to cope with the amount of water brought down.

*The Toung Sze Ho*—According to the survey of the South Grand Canal Conservancy Bureau, the length of the Toung Sze Ho from Chang Chia Chiao to Tu Shan Lake is actually measured 24.30 KM, whilst the difference in elevation is 5.91 m. From this follows that the average slope of the waterlevel is:

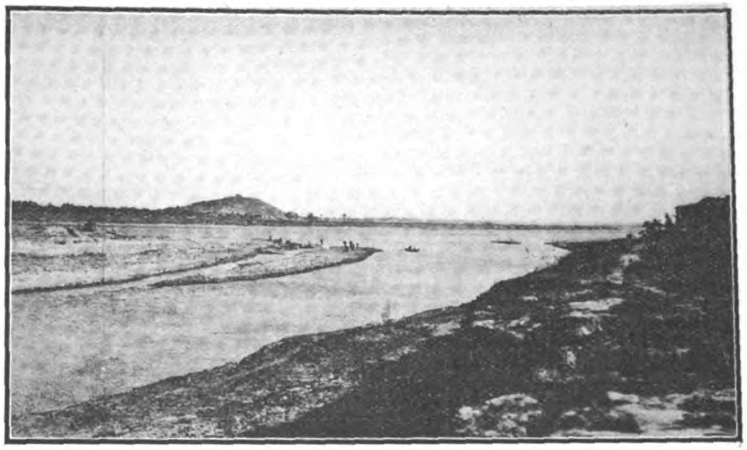
$\frac{5.91}{24300}$ or about 0.00024 m per m length

Now the discharge of a normal river is represented by the following formula:

$D = A \times v$ in which



SCENE ON THE PO-HO



WHERE THE TA-CHING HO JOINS THE YELLOW RIVER

*D* is the discharge per second
*A* the area of the cross section and
*V* the velocity.

The velocity depends on the slope of the water level, the shape of the cross-section, the nature of the soil, etc., etc., and is expressed by the following formula:—

$v = c\sqrt{R \times i}$ in which

*c* is a coefficient which depends on the nature of the soil; its value is about 50.

*R* is $\frac{A}{C}$ that is $\frac{\text{the area of the cross section}}{\text{wetted cross section}}$

*i* is the difference in height over a distance of 1 meter or in this case 0.00024.

We find consequently that:

$$D = c \times A\sqrt{\frac{A}{C} \times i}$$

By assuming that the proportion of the average depth and width of the river is as 1 to 50, we are able to determine the area of the cross-section.

If *h* is the depth then the width is 50 *h*. Substituting in the formula all the items that are known we find

$$130 = 50 \times 50h^2 \sqrt{\frac{50h \times h}{50h} \times 0.00024} \text{ or}$$

$$130 = 2500h^2\sqrt{0.00024h}$$

$$16900 = 6250000\ h^4 \times 0.00024\ h$$

$$h5 = \frac{16900}{6.250.000 \times 0.00024} = \frac{169}{15}$$

$h =$ 1.60 m about

Consequently the Toung Sze Ho should have, in order to be able to carry down 130 cub. m. of water to the Tu Shang Hu per second, an average depth of 1.60 m. by a width of 80 m.

*The Niu To Ho.*—In the report on the Grand Canal improvement scheme by Mr. Pan, I find that the length of the Niu To Ho from Mang Tcheng back to Wang Kwei Tuen is 36 KM. and the difference in elevation only 2.35 M. This works out to a very gentle slope of 0.000065 M. per Meter length and the velocity would be therefore only very small so that a large cross-sectional area would be necessary to deal with the discharge of the Wen Ho efficiently.

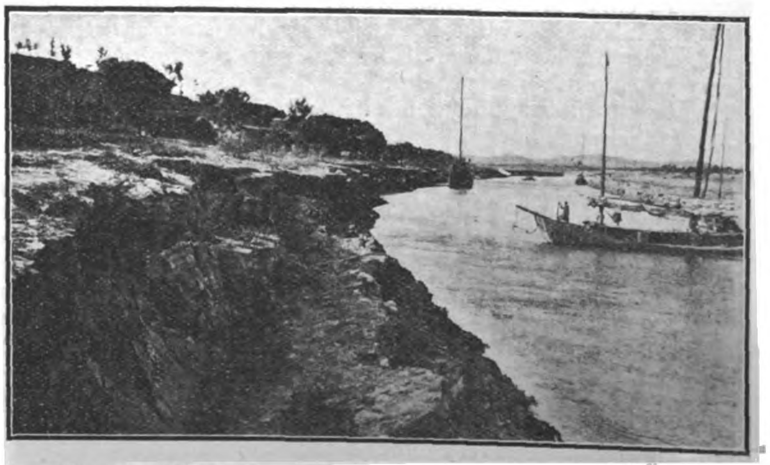
In this case we would find

$$h^5 = \frac{16900}{6.250.000 \times 0.000065} \text{ or } h = 2.80 \text{ M about}$$

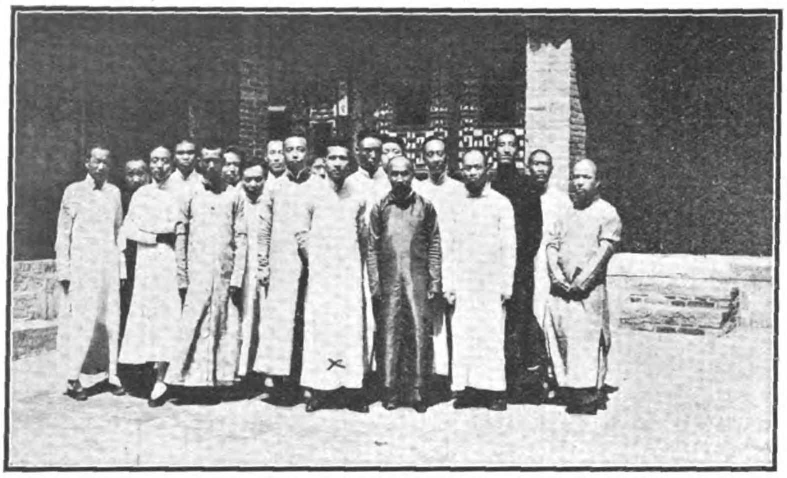
A canal with an average depth of 2.80 M. and 140 M. width would consequently be necessary to cope with the amount of water from the Wen Ho.

I think however that the conditions are a little more favourable for the following reasons: Probably the difference in elevation of 2.35 M. referred to is relative to the bed of the Niu To Ho, and although usually the slope of the water-level of a river is about parallel to the slope of its bed, this is not always necessary. In this case the difference in height of the water-level at each end is considerably more for the connection between the Wen Ho and the lake is not only the Niu To Ho from Mang Sheng lock to Wang Kuei Tuen, but begins already at the Grand Canal. Now if we have a look on the drawing showing the oscillation of the water-level in the Grand Canal, we see that during the low water stage the water at Fen Suei Ko is at 28.50 M. and near Hsu Chia Ying Fang at 33.50 m. As the communication between this place and the Wang Kuei Tuen is very wide, we may safely assume that the height of the water-level will be the same and consequently the difference in elevation of the water-level in the connection between Wen Ho and the lakes is

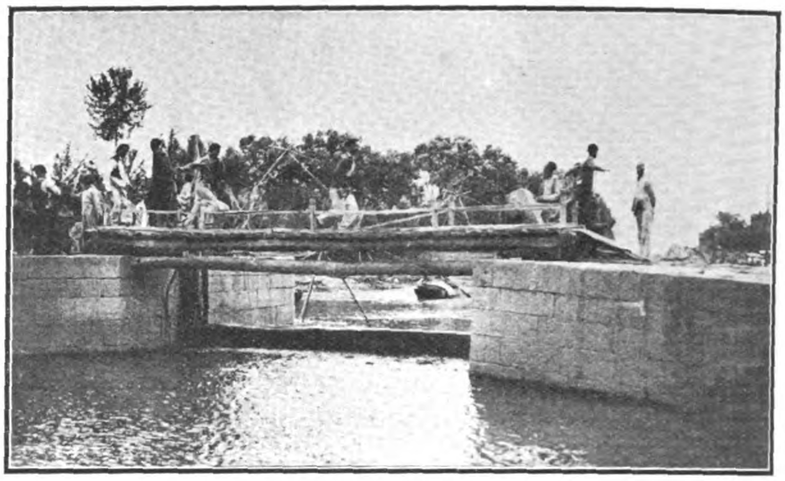
LOWER END RAPIDS NEAR THE MOUTH OF THE TA-CHING HO. THE FORMATION OBSERVABLE IS MUD



TA-CHING HO EMBANKMENT NEAR THE YELLOW RIVER, SHOWING THE EFFECTS OF EROSION



STAFF, SOUTH GRAND CANAL IMPROVEMENT WORKS, AT TSI NING-CHOW. (X) PAN, DIRECTOR OF THE SOUTH GRAND CANAL IMPROVEMENT BUREAU, SHANTUNG



LOCK ON THE GRAND CANAL

roughly 5 m. The length of the Niu To Ho has, however, been increased also and is not 36 H.M. but 48 H.M. The average slope is under those conditions 0.00012 and applying again the formula before used we find that:

$h$ 1.86 m. and the width consequently 93 m.

But this is of course only where the bed of the river is at the required depth below the adopted water-level. In case the river should be less deep it has to be made deeper, but if the river should be too deep it cannot be altered. In such places, (in this instance near the Grand Canal) the cross-sectional area would with the same width therefore be larger than required and consequently the velocity would be smaller, but as the velocity depends on the average slope this slope would be less also. This would upset the entire calculation and we will therefore have to decrease the area of the cross-section. This can be done by making the channel more narrow.

Suppose that the bed of the river is not 1.86 m. but 2.86 m. below the assumed water-level. In that case we get roughly the corresponding width as follows:—

The slope of the water-level remaining unaltered the velocity is constant also, and so is the cross sectional area, from which it follows that:

$1.86 \times 93$.m. $= 2.86 \times W$ in which W is the corresponding width or W = 60 m. about

From the lakes towards the Grand Canal near Fen Suei Ko the Niu To Ho should therefore, in case a uniform slope of the water-level is adopted, become more narrow as its depth increases.

As the necessary data, that is levels, etc., are not available as yet, it is impossible to say whether a canal as above contemplated is feasible. I say therefore once more and I should like to have this clearly understood, that the above calculations are only to be considered as an illustration and an attempt to get a rough idea of what has to be done.

*Ta Ching Ho & Yellow River.*—I have already in former pages explained why the Yellow River has such a detrimental influence on the discharge of the Ta Ching Ho and that the only way to improve the situation was to prevent the silt of the Hwang Ho entering the mouth of the Ta Ching Ho.

Is this possible?

Again the answer has to be postponed until the survey is finished and the data are collected, specially tide gauge readings, records which should be kept carefully. If it should appear that the water level in the Ta Ching Ho is often higher than the Yellow River, so that by an open channel the Ta Ching Ho could have a proper discharge, then it is worth while to study the question more carefully, but if on the other hand the opposite should be the case, it is useless and the question may be safely dropped. But even if the tide gauge records should prove that a proper discharge of the Ta Ching Ho by an open mouth could be possible the question of disposing of the Hwang Ho silt remains and this is a very difficult problem, which I am afraid could not be solved without heavy pecuniary offers. With reference to this, it is consequently advisable to ascertain first whether a general improvement scheme is possible without touching the afore-mentioned delicate problem.

*The Outlet of the Storage Basins.*—The only outlet of all the storage basins is the Grand Canal, which is connected with the Wei Shan Lake by the Han Chwang Hu Ko double locks with a total opening of 13.80 M. The capacity of this canal as a conveyance for water is, as I already said elsewhere in this report, very small, especially during the summer time, when the Ye Ho brings large amounts of water into the Canal and it is therefore only able to cope with the quantity of water which is stored up in the lakes over a longer period.

In case the conditions of the Grand Canal below the Wei Shan Lake could be improved in such a way that during the rainy season its discharge capacity could be equal to that in the winter, it is evident that the water-level in the lakes could either be kept lower during the whole summer or at least for the greater part of it, which would greatly benefit the drainage of the low lying country. That this is of very much importance goes without saying, and it would therefore be very good if the Ye River could be more independent of the Grand Canal. It would be desirable if this work could be taken in hand simultaneously with the South Grand Canal improvement in Shantung.

## Financial Side of the Scheme

It is contemplated to defray the costs of the scheme out of the taxes to be levied on the reclaimed land at the rate of $1 per Mow, which would altogether amount to $826,000 per year. If this estimate, which is as I take it only a rough guess, should prove to be correct, it is possible to improve the conditions thoroughly and the productiveness of the scheme is then certain.

It is however at present not yet possible to say exactly which land and how much can be reclaimed as (which I have said before) first the survey and the levelling at least has to be finished, notwithstanding which, the general impression I get is that the scheme will pay for itself entirely.

## Conclusion

Before ending this report I would like to say a word of appreciation on the manner in which the South Grand Canal Conservancy Bureau has, under the able Directorship of Mr. F. Pan carried out the preliminary survey and everything connected therewith. Not only have good maps been made, but accurate levellings have been done as well, tide gauge records have been kept, discharge measurements taken, in short, almost everything has been done which is necessary to serve as a sound basis, without which no proper plan can be made. Here and there some fault may be found, but not serious, or the data collected may fall short of the required standard of accuracy, but considering the little practise which the staff had the opportunity of obtaining the Bureau undoubtedly deserves the highest praise and has to be congratulated upon the work it has performed.

It is sincerely to be hoped that the Bureau will be enabled by the Central Government to continue its task for which it wants more funds in order to accomplish all the necessary work on which a definite scheme can be based, a scheme which promises all possible success.

# RESTORATION OF MONARCHY IN CHINA

## The Revolt of the Republicans

The record of the progress of events connected with the restoration of the monarchical system was closed in our last issue without any definite details being given of military movements. This was necessary because reliable news came to light very slowly, while rumours were numerous and conflicting.

As soon as it became evident that the Yunnanese troops seriously intended to fight for their "independence" the Government pushed on with its arrangements to dispatch a large number of troops from the north. The general plan of operations was to attack Yunnan with three armies. The first army under the command of General Tsao Kun, was to co-operate with the troops of Szechuan; the second army under the command of General Chang Ching-yao was to co-operate with the troops of Hunan, while the third army was to be under the command of General Lu Yung-ting, Military Governor of Kuangsi. It should be mentioned that the attitude of the province of Kueichow, which lies to the north of Yunnan, remained obscure until January 27 when it was announced that the officials there had decided to throw in their lot with Yunnan. Whether this decision was voluntary or compulsory is not clear.

The transfer of troops from the north to the scene of operations was necessarily slow, as from Hankow they had to be transported by river to Chungking, which was selected as headquarters. In the circumstances it is not surprising that the aggressive was taken by the Yunnanese troops, who invaded Szechuan. The first actual fighting appears to have taken place near Anpienchen in Szechuan, about thirty miles from Suifu. No definite information is available in regard to the numbers of either the Yunnanese or Szechuan troops, but success was certainly gained by the former, and it is said that the casualties sustained by the Szechuan troops totalled 300. About January 21 the Yunnan troops reached the city of Suifu on the Yangtze River, and occupied it, the loyal garrison withdrawing north of the river. In the meantime loyal troops were on the way up the Yangtze to Chungking but slow progress as already stated was being made owing to the difficulties of transportation. Later reports indicated that the Yunnanese were pushing on northwards to the rich salt well district of Tzeliutsing, with the object of obtaining contributions from the wealthy salt merchants. Other troops were said to be proceeding down river to Chungking, hoping to reach that Treaty Port before the loyal soldiers. How many troops the Yunnan leaders sent to attack Szechuan is not known. In fact no accurate estimate of the number of men in arms in Yunnan is available. There are various estimates, but 20,000 should be somewhere near the mark, with recruits being knocked into shape to make up wastage. As to the troops in Szechuan it is estimated that there are about 17,000 in the province, 6,000 at Chungking and 9,000 at Chengtu, while the rest were in scattered garrisons. A telegram from Chengtu dated January 27 officially stated that the arrival of northern troops at Tzeliutsing had relieved the salt district from danger.

After the occupation of Suifu the Yunnanese leaders sent forces to attack Luchow. This is an important city situated about mid-way between Suifu and Chungking, on the northern bank of the Yangtze River. If the Yunnanese could have gained possession of this city they would have been in a very good position to attack Chengtu, the capital of Szechuan, and to menace the communications of any force advancing to its relief from Chungking. The distance from Chungking to Luchow is somewhere about 120 miles. On several occasions it was reported that the republican troops had occupied Luchow, but these rumours were officially contradicted. The concentration of northern troops at Chungking steadily progressed and as their numbers were augmented the prospect of the Yunnanese securing Chengtu, which would have had an immense moral effect, grew steadily less.

Definite information about the movements of General Lu Yung-ting's army has been slow in forthcoming. An engagement, in which the loyalist troops were successful, took place at Loping in Yunnan, about twenty miles from the Kuangsi border. Later a report was in circulation that the loyalists had occupied Mengtsze, a treaty "port" on the Haiphong-Yunnanfu railway, but subsequent information showed that this news was at least premature.

Early in February the first news of marked activity on the part of the loyal troops operating in the Szechuan sector was received. A force of Szechuan troops under General Fung Yu-tsiang met the Yunnanese on January 31 about fifty li northeast of Suifu. An engagement ensued that lasted for several hours. The Yunnanese were defeated and sustained casualties estimated at from 300 to 500, including several officers. The loyalists took a number of prisoners, and captured two mountain guns and large quantities of munitions. After this success General Fung Yu-tsiang advanced towards Suifu to endeavour, in co-operation with other loyalist troops, to expel the republicans from that city.

On February 7 some news was received from the south of a disquieting nature, as it showed that the position had to be accepted that Kueichow was actually co-operating with the Yunnanese. The official report stated that the city of Kueiyang had been invaded by a force under Tai Kan which was joined by a portion of the local garrison. Tai Kan, it may be remarked, is a native of the province of Kueichow. Whether there was any fighting in connection with the seizure of Kueiyang is not clear, but it seems probable that there was not. Subsequently a force of about 1,000 men, stated in some reports to have been Kueichow troops, raided the city of Huangchow on the Hunan border. The official report states that there were no loyalist troops at Huangchow, and declares that the raiders after burning down government buildings, looted the city of all food-stuffs.

On February 8 Liu Hsien-shih, Military Commissioner of Kueichow, was cashiered.

A telegram from Chengtu, dated February 7, stated that with the exception of Suifu, all cities in Szechuan north of the Yangtze were in the possession of the Government troops, while telegraphic communication with Chungking had been restored.

Turning from the military situation for the moment, it is worthy of note that among the memorials received towards the end of January urging the Emperor to ascend the Throne with the least possible delay was one from General Chang Hsun. Rumours had been spread that General Feng Kuo-cheng and General Chu Jui, the Military Governor of Chekiang, had presented a memorial urging the establishment of a sort of Imperial Federation in China, namely the formation of a number of feudatory princedoms. The object of spreading this rumour was obviously to inspire a belief that instead of obtaining a constitutional government the country was threatened with the worst kind of autocratic rule. Flat denials were at once published by both Generals that they had submitted any memorial of the kind indicated. This, however, is only one of the innumerable baseless reports which were put in circulation, most of which originated from Japanese sources. Most of them related to stupendous victories alleged to have been gained by the republicans, and to serious outbreaks which were said to have occurred in Mongolia, Turkestan and several of the provinces. Almost invariably these reports were found to have no foundation in fact, or, when they had some foundation to have been grossly exaggerated. Among the most picturesque of these sensational reports was one which had its origin in the arrest of a minor Palace official on a charge of disclosing official secrets. This was magnified into the discovery of a plot to assassinate the Emperor-elect and the most circumstantial details were given of

the finding of bombs in the Palace. It was even stated that one of the Emperor-elect's sons was concerned.

If there was nothing spectacular in the operations of the loyalist troops against the republicans in the early stages, they were at least methodical. Instead of inviting, or at any rate risking disaster by premature offensive action with inadequate forces, the wise policy was adopted of mobilising a sufficiency of loyal troops before undertaking any major operations. At the same time care was taken that localities, important strategically or in other ways, should not be allowed to fall into the hands of the republicans, and, with this object in view, several minor actions were fought. In these, according to the official reports, the Yunnanese were invariably defeated with heavy losses, while many of their mountain and machine guns were captured. There is little doubt that the republican leaders thought that they could gain possession of Tseliutsing, where the salt wells are, and, perhaps, of Chengtu, the capital of Szechuan province. Sufficient loyal forces were employed to frustrate the attempt to gain possession of these places, but, as already stated, the real offensive on the part of the northern troops was delayed until all the necessary preparations had been made. When the safety of Tseliutsing, Chengtu and Luchou was assured the northern leaders were able to develop their plans at leisure. With stronger forces and infinitely greater resources, time was on their side. The only hope of the republicans was to achieve an early dramatic success that might bring waverers to their aid. This they could not accomplish, and their failure undoubtedly lost them assistance upon which they had counted.

Some interest and not a little resentment was caused by the reproduction in the Peking newspapers of February 10 of a "manifesto" issued by the members of a propagandist organization formed by Japanese residents in the Chinese capital. The manifesto appears to have been sent to Tokyo and to have been published there in some magazine, copies of which found their way to Peking. The ostensible object of the persons by whom the manifesto was issued was to stir up their Government to take "strong action" in China. They urged that the Western Powers were unable to interfere whatever policy Japan chose to adopt in regard to China, and that the unique opportunity should be ruthlessly seized. After indulging in much unmeasured abuse of Yuan Shih-kai, the framers of the manifesto recommended that a third Note of Advice in regard to the re-establishment of the monarchical system should be presented to China. This would result, they pointed out, in loss of prestige by the Central Government and consequent encouragement to the revolters, and it might reasonably be expected that China would be thrown into a state of chaos. Then Japan's opportunity would come. That was the gist of this precious manifesto. While it would be unwise to attach too much importance to the utterances of men who may or may not reflect the opinions of the bulk of their countrymen, it would be still more unwise to ignore the fact that the policy advocated by them has found support in much more influential quarters, though not expressed with such brutal frankness. Undoubtedly there are a good many Japanese who see no immorality in a breach of treaty undertakings by Japan if it can be committed with impunity. Whatever the significance, or insignificance, of the manifesto its publication caused much resentment among the Chinese, by whom it is taken as collateral evidence that the revolt in Yunnan is not regarded by Japan as altogether displeasing.

On February 13 a Mandate was issued which confirmed rumours which had been in circulation of the defection of General Liu Cheng-hou, commanding the 2nd Division of troops. The Mandate states that Liu was sent with one brigade of the 2nd Division to defend the city of Yungning, but instead of doing so he inspired his troops to revolt and assisted the Yunnanese in their designs upon Luchou. The attempt to surprise Luchou failed, and after a vigorous attack by the Government troops the republicans fled. For his disloyalty, the Mandate concluded, Liu must be cashiered and executed as soon as captured. Further information in regard to the attack on Luchou was given in an official report issued by the Wai Chiao Pu (Foreign Office) on February 15. It stated that, knowing that a large portion of the loyal troops stationed at Luchou had been sent to attack Suifu, Liu, in conjunction with Yunnanese troops, attempted to take Luchou by surprise on February 2. He took Lan Tien Pa on the southern bank of the river opposite to Luchou, on the 5th. The next day, however, the loyal garrison at Luchou received reinforcements. On February 8 the republican troops crossed the river at Lohanchang and for three days and nights a fierce battle went on. The republicans were eventually driven across the river, Lan Tien Pa and Tai Ping Chang were retaken by the loyalists and the republicans retreated to the south. The latter sustained heavy casualties and lost six heavy guns.

After the official announcements in regard to the fighting in the vicinity of Luchou no news of importance was forthcoming for some time. The arrival of General Tsao Kun, the Commander-in-Chief of the loyalist troops, at Chungking on February 15 effectually disposed of the rumour circulated by republican sympathizers that that important city had declared its neutrality. Some fighting is said to have taken place near Chikiang, which is on the southern bank of the river opposite Chungking, but no authentic information has been received at time of writing. The one definite conclusion to be drawn from the reports received from all sources up to February 15 was that the forward movement of the republican armies has been arrested.

Towards the end of the month it was announced that the Government had provided for a force of 100,000 men to suppress the rebellion and that arrangements had been made for a campaign of six months. The estimated cost was $30,000,000 of which $20,000,000 had already been provided for in the Budget. The balance would be obtained either from a loan or provincial contributions.

Fighting occurred near Nashi on February 18 which resulted in the loyalists capturing all the hills outside of the city except one. The republican troops are said to have suffered very heavy losses.

On February 25th, after a sharp encounter with the Government troops near Nashi in which the republicans suffered severely, they retreated. A detachment was almost exterminated in crossing the river. The following day a portion of the republicans advanced toward Tungshih but were met by Government troops and forced to retreat with heavy losses. Severe fighting took place again on the 26th near Nashi which resulted in the capture of the second line of the republican defences.

Nothing further has occurred in the Suifu region where the republicans are entrenching on the mountain ridges. Upwards of three hundred wounded Government troops are in the hospital at Luchow. A big battle is expected to take place as soon as General Tsao Kun starts his Westward movement.

Although it was generally understood that the enthronement ceremony would not be proceeded with, no official announcement of its definite postponement was made until February 23. A Mandate was issued on that date, inspired perhaps by the presentation of a Memorial from Prince Pu-lun and others urging the Emperor-Elect to ascend the Throne without delay. The translation of the Mandate published by the *Peking Gazette* read as follows.—

Telegraphic and written petitions and prayers have been received from civil and military officials, representatives of the citizens, various organisations as well as individuals, urging that the Throne be ascended at an early date. This has been proceeding almost daily. To the patriotic people these acts are intended to secure to the country a permanent peace, but on the part of the Person holding power, HE has the responsibility of looking into the general situation and acting with wise judgment. The provinces of Yunnan and Kueichow are raising rebellion; and the homes of many are disturbed. The conditions of people living in western Hunan and southern Szechuan, where the robbers have raided, are pitiful to hear, they having lost their homesteads. The painful thought caused by the sufferings of my people has disabled us from enjoying our sleep and food. In addition to this the unscrupulous have invented rumours of a most fantastic character. Our original intention to save the country and the people has unfortunately been made a subject of quarrel for privileges and rights. How can our heart be at ease if we should ascend the Throne at this moment? We are now resolved that this question must be postponed. It is presumed that all patriots will readily understand our decision. Hereafter all telegrams and memorials praying for an early accession to the Throne shall not be allowed to be presented. Let this be universally proclaimed.

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## CONSERVANCY WORK IN CHINA

In this issue we publish the report of Mr. H. Vanderveen, the Consulting Engineer to the Chinese National Conservancy Bureau, on the scheme for the improvement of the Grand Canal in Shantung Province, and a paper by Mr. H. von Heidenstam on China's Inland Waterways. These matters are of such immediate and far-reaching interest to China that we need make no apology for publishing the papers at length. Especially is this so since Mr. Vanderveen's report was responsible for a reconnaissance of the territory included in the scheme being made by Mr. W. F. Carey, of the firm of Siems & Carey, of Minneapolis, with a view to ascertaining whether the work is actually practicable or not. If Mr. Carey decides that the work can be profitably carried out it is likely that the Government will enter into a contract for a loan to put the scheme into effect.

This is an important development of the plans made by the Government sometime ago. The Government has for quite a considerable time been investigating the neglected waterways of the country and in 1914 formed a Conservancy Bureau to undertake the necessary labors in this connection. On January 12, 1915, too, a mandate was issued instructing the various Conservancy Bureaux to consult with the National Conservancy Bureau with regard to any conservancy problem that may require consideration. The mandate further pointed out: "It is our aim to have all the water courses of the country take the form of the blood system with the veins and arteries doing their respective work properly and scientifically—every stream with a proper outlet and a proper slope," which is conclusive proof that the Central Government has been and is fully alive to the necessity of giving attention to this matter. In a letter to a contemporary Mr. Vanderveen supplied some facts which are of interest. Early in 1914, he pointed out, the Government, being fully aware of the necessity and importance of doing something to their badly neglected waterways, established the National Conservancy Bureau, of which His Excellency Chang Chien was made Director General. Sub-bureaux were established in several Provinces, the best known being those in Kiangsu and Anhui on account of their connection with the survey of the Huai River flood district, a survey which enabled the Board of American Red Cross Engineers during their short stay in China in the summer of 1914 to formulate a general plan of improvement. Other bureaux were formed without connection with the Central Bureau, one being the National Conservancy Bureau. As the Government feared that this might lead to disjointed effort the mandate referred to above was issued to consolidate and unify all conservancy matters under the Central National Bureau. Active work has since then been undertaken, and surveys of various localities have been made. Investigations have been carried on in connection with the Huai River scheme, one of the most important in China; the West River territory in South China, the Grand Canal, and the Sea-wall at Hangchow. Particularly has much work been done by the South Grand Canal Improvement Bureau in Shantung. This Bureau has dealt with the work outlined in the report by Mr. Vanderveen, which we publish. In addition to these problems numerous others have been having full attention and methods have already been devised for collecting the necessary data for improvements.

The conditions obtaining in China have of course materially affected the consummation of several desirable plans, and the chief among the factors making for delay is the shortage of finances. It is wrong, however, for any one to believe that the Chinese do not appreciate the value of conservancy work. The tremendous schemes for flood control and land protection which now exist is the answer to skepticism. For over forty centuries the Chinese have been building dykes and using canals. Important work that has been done, as was pointed out in a recent article by Mr. C. D. Jameson, is that in connection with the Yangtze and Yellow River systems. He says that it may be taken as a fact that all of the rivers flowing through the delta plain have their waters more or less confined by dykes from where they enter the plain to the sea. This applies to the Yangtze River, from near Ichang, for one thousand miles; to the Han River for four hundred miles, until it enters the Yangtze at

Hankow (these Han dykes are on both sides of the river, and in places are thirty feet high); to the Yellow River from Meng Hsien to the sea, about three hundred miles; and to all the other rivers entering this great delta plain of the north or the delta plain around Canton and Southern China.

In addition to the dyking of the rivers, the delta from Hangchow on the south to Tientsin on the north—eight hundred miles—is a network of canals for a width of one hundred to one hundred and fifty miles west fro n the sea.

Within the area from Ningpo to the Yangtze, one hundred and eighty miles, and from the ocean west some one hundred and sixty miles, there are over twenty-five thousand miles of canals,* great and small; and none included are so small but that two small native boats may pass each other.

From the Yangtze north to the old bed of the Yellow River and east of the Grand Canal, one hundred and twenty miles by one hundred and thirty miles, there is a similar network of canals. North of the old bed of the Yellow River, it extends to the borders of Shantung, and north of Shantung, to Peking, with a diminishing number of canals. In this great delta plain of the Yangtze and Yellow Rivers there are not less than sixty thousand miles of canals for transportation which also serve for irrigation, drainage, and flood control.

As protection from the ocean tidal waves, there are, south of the Yangtze, some three hundred miles of sea wall; and from the Yangtze north, for over one hundred miles, the great Maritime Dyke, built in 1027 A.D.

More work has probably been done and more money expended upon flood control during the last two thousand years in and for the section of country east of the Grand Canal and from the Yangtze River north to the old bed of the Yellow River, than in all the remainder of China.

This is a low, flat section but a few feet above sea level. The soil is very rich and the climatic conditions suited to the culture of rice and wheat. Bordering on the Grand Canal and being covered with a network of secondary canals, it has been in touch with China's markets for three thousand years. Not only was it the granary of China, but the whole sea coast was and is one vast salt manufactory. And it is still upon this section that continued effort and money must be expended. For many years the main canals have been neglected and rivers have silted, the effect being that tremendous areas of country have been put out of cultivation and have deprived millions of people of secure homesteads and farms. The recent attention which has been given to the Huai River and Grand Canal areas has awakened officials to the necessity of action and it is gratifying to see that steps are now being taken to effect improvements which will be of material benefit to the country at large.

* See article on "National Irrigation and Conservation in China" in the FAR EASTERN REVIEW, January, 1914.

## THE CHINESE MIDDLEMAN AND TRADE IN CHINA

The prospect of intensified competition in the commercial field of China after the war has caused considerable attention to be paid to the methods by which business has been conducted in the past. The British, officially and unofficially, have been particularly energetic in seeking out the faults in their own methods and the strong points in those of their rivals, with the object of correcting the one and adopting the other. In this connection much valuable work has been done by Mr. T. M. Ainscough who, in the capacity of Special Commissioner to the British Board of Trade, travelled over most of the great trade routes in China investigating conditions and studying the methods by which business is carried on, particularly in relation to foreign trade. A similar service has been performed for America by Mr. Arnold, but he was more directly interested in trade possibilities than methods, though he has made many excellent suggestions in regard to the latter. To his work Mr. Ainscough brought a trained mercantile mind, that is to say he has himself been a merchant, and was consequently thoroughly competent to offer practical suggestions after completing personal investigations. The recommendations that he makes for the promotion of British trade in China deserve careful study by every nation that is interested in the field.

Great stress is laid by Mr. Ainscough upon the elimination of the Chinese middleman. Under existing conditions this is the counsel of perfection. The Chinese middleman cannot be at once eliminated simply because there is no one to fill his place. The number of foreigners who possess a knowledge of the Chinese language and who understand the intricacies of Chinese trading methods and of inter-provincial transport and other dues is extremely small. Until that number be considerably increased the Chinese middleman will continue to be an essential if any business at all is to be done. It is true that the system of indirect trade is costly and an undoubted impediment to business expansion. Though the foreign merchant and the Chinese middleman are working together, their interests are not identical, in fact they are not infrequently in conflict. Cases have been known of the middleman buying for himself from the foreign merchant at a low figure in order to sell at a much higher rate to a waiting customer. In existing circumstances that sort of thing cannot be checked, and it should be said in justice to the middlemen that there have been but few recorded cases of direct spoliation by middlemen of their foreign partners—it is to be understood that the word partners is only used in the restricted sense applicable to the association between the foreign merchant and the middleman. The fact that the interests of the parties are not identical is, however, calculated to prevent trade from being pushed with the vigour and determination that can be shown when direct contact with purchasers or sellers can be established.

Another important suggestion is the organization of buying and selling in the interior. This is obviously highly desirable, but again the lack of a sufficient staff acquainted with the language, customs and business methods of the Chinese is a bar to its immediate adoption. That more business and better business would result from its being sought at the fountain-head, so to speak, is certain. The German is the only business community in China that realized from the outset that trade could only be satisfactorily developed by getting into direct touch with principals and by organizing marketing in the interior. That fact having been realized the German firms took the indispensable preliminary step of compelling their foreign staffs to learn the Chinese language and to study the character and customs of the people. It may safely be asserted that a larger proportion of German commercial men in China have a knowledge of the language and the tastes of the people than those of any other nationality, though it must not be forgotten that the staffs of the British-American Tobacco Company and the Standard Oil Company also include many members who have qualified themselves for direct trading. But, although the Germans have achieved a considerable degree of success in their efforts to emancipate themselves from the thraldom of the Chinese middleman, they have not been able to dispense entirely with his services.

A consideration of the situation in the light of the known facts compels the conclusion that it will be a long time before direct trade can become general. Although there is reason to believe that the difficulty of learning the language has been magnified, and that faster progress will be made by the new and improved methods of teaching that have been evolved, the creation of a large staff of qualified foreigners will take many years. The steps that are being taken to establish schools for the exclusive use of foreigners engaged in commerce will undoubtedly be of ultimate benefit, but it must be recognised that for a considerable time to come indirect trading must continue. In such circumstances it might be worth while to cast about for some means whereby closer association and identification of interests of foreign merchant and Chinese middleman could be devised. The formation of Sino-foreign companies and partner-

ships immediately suggests itself. In the past the difficulty created by the extra-territorial status of the foreign merchant has been a serious obstacle and moreover there has been no satisfactory Chinese company law. This latter deficiency has been largely rectified since the present Minister of Commerce, Mr. Chow Tze-chi, took office, and the reform of the judiciary that is being carried out should soon render it possible for Sino-foreign companies and partnerships to carry on business successfully. If this is found to be feasible the elimination of the middleman will be quickly accomplished by transforming him from an intermediary to a partner.

## JAPAN'S RAILWAYS AND TRAMWAYS

In order to unify the arrangements of transportation in Japan and promote its economic advantages, the Government, according to the Railway Nationalisation Law issued in March, 1906, purchased the lines belonging to seventeen Railway Companies, namely, the Kobu, Hokkaido-Tanko, Ganyetsu, Nippon, Nishinari Sanyo, Kiushiu, Hokkaido, Kyoto, Hankaku, Hokuyetsu, Sobu, Boso, Nanao, Tokushima, Kwansai, and Sangu. Their aggregate mileage on the day of purchase was 2,823 miles, and the total amount of loan bonds delivered to the private railway companies as purchase-price was *yen* 476,318,800 (£48,788,159), which was completely paid on the last day of July, 1909.

The working of the Japanese Railways during the year 1913-14 gave according to the Financial and Economic Annual of Japan, the following results:—

Of the aggregate mileage worked of 7,291 miles, 5,473 miles were represented by the State lines, and 1,121 miles by the private lines, and 697 miles by the South Manchuria Railway. The number of passengers carried was 211,251,883, and the tonnage of freight 47,063,324 tons, while the traffic receipts amounted to *yen* 138,577,754 (£14,194,177).

On the State lines, the average mileage worked for passenger traffic was 5,289 miles and for goods traffic 5,344.3 miles. The number of passengers carried was 167,773,143 and goods amounted to 36,348,362 tons. Traffic receipts were:—passenger *yen* 57,296,280 (£5,868,717); goods *yen* 53,737,253 (£5,504,174); sundries *yen* 2,443,522 (£250,284); total *yen* 113,477,055 (£11,623,175). The working expenses, interest on loans, etc., amounted to *yen* 92,932,740 (£9,518,871) and the net profit, after deducting the said items of expenses from the receipts, came to *yen* 20,544,315 (£2,104,303). The estimated receipts and expenses of the Imperial Government Railways for the financial year 1915-16 are, *yen* 128,118,447 (£13,122,856) for receipts and *yen* 110,279,742 (£11,295,682) for expenses, giving a net profit of *yen* 17,838,705 (£1,827,175); in these expenses is included *yen* 37,899,391 (£3,881,941), the interest on the public loans for the purchased railways, etc.

The Law relating to Light Railways was issued in April, 1910 and put into force in August of that year. The construction of Light Railways was formerly subject to various inconveniences, as it was practically regulated by the ordinary railway or the tramway regulations. It was to obviate this difficulty that the special measure was adopted. This legislative measure guarantees the profit of private light railways within a limit not exceeding 5 per cent. of the construction expenses.

The private and light railway companies open to business existing at the end of the year 1913-14 numbered 69 with the total open mileage of 1,121.07 miles and an aggregate capital of *yen* 77,439,222 (£7,931,908). They carried during the year 39,-267,106 passengers and 4,237,637 tons of goods, while the traffic receipts and expenses were *yen* 7,135,516 (£730,873) and *yen* 3,808,433 (£390,088) respectively, leaving a balance of *yen* 3,327,083 (£340,785) as profit. The cost of construction of open lines amounted to *yen* 65,587,272 (£6,717,942).

The South Manchuria Railway Company was founded in July, 1906, with a capital of *yen* 200,000,000 (£20,485,507), of which *yen* 100,000,000 (£10,242,753) was contributed by the Government with the real property, *yen* 60,000,000 (£6,145,652) was issued to the public, and *yen* 124,000,000 (£12,701,014) was paid up, *yen* 40,000,000 (£4,097,101) having not yet been raised. The total mileage of open lines at the end of 1913-14 was 697 miles, the total number of passengers carried in the same year was 4,211,634 and the total amount of goods was 6,477,325 tons. The total receipts amounted to *yen* 42,417,123 (£4,344,681) and expenses to *yen* 35,249,844 (£3,610,555), giving a net profit of *yen* 7,167,279 (£734,127). Of the above, the earnings of the railway came to *yen* 22,275,132 (£2,281,587) and its working expenses to *yen* 7,913,948 (£810,606).

The electric railways existing at the end of the year 1914 numbered 66 with an aggregate capital of *yen* 163,113,500 (£16,707,313), and the total mileage of their open lines was 691 miles and that of the lines not yet open 242 miles. The companies which have not yet opened business numbered 27 with an aggregate capital of *yen* 20,360,000 (£2,085,425), and the total mileage of their projected lines was 282 miles. In addition to the above, there were electric railways owned by the Tokyo, the Osaka and the Kyoto Municipalities with an aggregate capital of *yen* 136,629,177 (£13,994,589), the total mileage of their open lines being 120 miles and that of the lines not yet open 47 miles.

## MINING IN JAPAN

The present Mining Law in Japan came into force in 1907; and by the term 'minerals' in that law are meant the ores of gold, silver, copper, lead, bismuth, tin, antimony, mercury, zinc, and iron, iron pyrites and chromite, manganese, tungsten, molybdenum, arsenic, and phosphorus ores, graphite, coal, peat, petroleum, asphalt, and sulphur. To other minerals, the above law does not apply, and as to alluvial working, a special law was established in March, 1909. By the term 'mining right' is meant the right of mining or prospecting for the above-mentioned minerals. The mining right can be enjoyed only by Japanese subjects and juridical persons constituted conformably to the laws of the Empire. The right of mining may be acquired with the permission of the Minister of Agriculture and Commerce, and the right of prospecting, with the permission of the director of a mine inspection office. The mining right is classed as real right to which the provisions relative to immovable property are correspondingly applicable; and it is indivisible. It cannot be made object of rights other than those of succession, transfer, measures taken in consequence of non-payment of national taxes, and execution; but the right of permanent mining may become the object of a mortgage. The duration of a right of prospecting is two years from the date of the registration thereof, but there is no limit of duration with regard to a right of mining. The area of a mining set must be, for collieries, not less than 50,000 *tsubo* and for other mines, not less than 5,000 *tsubo*, nor exceed for mines of all kinds 1,000,000 *tsubo*. In connection with this new Mining Law was promulgated in March, 1905 the Mining Mortgage Law, which enables owners of mining rights to create mining foundations with a view to the mortgage thereof. A mining foundation may be formed with the whole or a part of the following which belong in respect of mining to the same owner of a mining right:—

(1) Rights of prospecting and mining; (2) Land and works; (3) Superficies and right of using land; (4) Right of hiring things, to which the letter thereof has given his consent; (5) Machines, tools, instruments, vehicles, vessels, oxen, horses, and other appurtenances.

The total yield of mines in Japan Proper in 1914 came up to about *yen* 153,309,716 (£15,703,136), being an increase on the preceding year of *yen* 6,460,924 (£661,777). If we add to this the output of the Steel Foundry and the yield in Chosen and Taiwan, the total amount will come up to about *yen* 179,635,000 (£18,399,570) as follows:—

| | *yen* | |
|---|---|---|
| Japan Proper .. .. .. | 153,309,716 | (£ 15,703,136) |
| Steel Foundry .. .. .. | 13,383,611 | (£ 1,370,850) |

| | | |
|---|---|---|
| Chosen | 8,402,649 | (£ 860,663) |
| Taiwan | 4,539,787 | (£ 464,999) |
| Total | 179,635,763 | (£ 18,399,648) |

The total number of applications relating to mining in 1914 was 6,209, a decrease of 76 on the preceding year. Although the applications for prospecting and mining increased by 4 and 9 respectively, there was a falling off of 89 in the number of applications for alluvial mining owing to the decrease of applications for the mining of alluvial gold at Yame District in Fukuoka Prefecture and Ishikari in Hokkaido, so that the total number of applications relating to mining showed the decrease mentioned above. The number of mine-lots at the end of 1914 was 13,349, of which the lots for mine prospecting numbered 6,428 owing to an increase of the petroleum mine-lots and colliery lots and showed a record increase of 676 on the preceding year. The lots for mine-working numbered 5,324, being less than the figure for the preceding year by 64. But this was mainly due to the amalgamation of the lots; their total area has annually increased. The alluvial mine-lots numbered 1,597, including those for gold dust and iron sand, an increase of 46 on the preceding year. The volume of import trade of mine products during the same year was *yen* 57,712,621 (£5,911,361) and that of export trade *yen* 83,787,932 (£8,582,192), the total volume being *yen* 141,500,553 (£14,493,553), a decrease on the preceding year of *yen* 25,486,111 (£2,610,479). Although the export trade has been carried on since the beginning of the year in a comparatively favourable condition and showed an increase on the preceding year of about *yen* 100,000 (£10,243), notwithstanding that the trade has been greatly affected since August by the European war, yet the import trade decreased by about *yen* 25,500,000 (£2,611,902), chiefly owing to a falling off in the importation of metal, and thus the total volume showed a decrease as stated above. The amount of capital invested in mining enterprises by individuals can not be ascertained, but as regards the capital invested by companies, *yen* 20,310,850 (£2,080,390), of which *yen* 12,550,850 (£1,285,553) was paid up, was invested during 1914 through the establishment of new companies and the increase of capital of those already existing. Against this must be set the amount of reduction of capital due to the dissolution of companies so that the aggregate nominal capital of mining companies at the end of 1914 amounted to *yen* 251,441,400 (£25,754,522) being an increase on the preceding year of *yen* 18,760,850 (£1,921,628), of which *yen* 201,578,975 (£20,647,237) was paid up.

## EXCESSIVE TAXATION IN NORTHWESTERN CHINA

In the January number of the FAR EASTERN REVIEW, under the heading of "Some Thoughts for China's Benefit," we drew attention to the lamentable condition of affairs produced in the Kweihwacheng-Suiyuan region by excessive taxation and brigandage. It is interesting to note that the Peking Government became so alive to the dangers with which the situation was pregnant that they sent a Special Commissioner to make an investigation and as a result of his report a Mandate was issued on February 22, which, if enforced, will be of great benefit throughout the country. The Mandate, as translated by the *Peking Gazette*, was as follows:

"Advices are not wanting in ancient teachings that national levies on the people must be in accordance with law. This is peculiarly true whilst a new empire is in the making. The finances of China, ever since the days of Hsin Hai, have been undermined by desperadoes at the very roots. Both the Government and the people have been financially embarrassed, whilst none of the obligations, such as foreign loans, military expenditure and administrative expenses, could be decreased. The Government has, therefore, been compelled to resort to the people. Under the circumstances the officials in charge of the collection of taxes should give heed to the virtuous intention (of the Emperor) and consider the case from both sides. Repeated orders and instructions have been given, advising and cautioning them, but neglect has grown with time, and certain corrupt officials have dared to oppress the people under the pretext of performing their official duties. The mere mention of such cases is enough to cause us bitter remorse. A report reached us some time ago that the local officials of Kuei-Sui have been levying excessive taxes on the people, and orders were given to the Ministry to make confidential investigations through officials specially appointed. A report has now reached us that the regions named have been overburdened with excessive taxation in addition to corruptions of countless forms, among which the cart-tax and taxes on minor articles have been the cause of much complaint and grumbling. As the regions of Kuei-Sui are situated on the unproductive frontier, it is impossible to allow such corrupt officials, who do not care for the lot of the people, to extract money from them under skilfully created excuses. Another high official has been despatched to the spot, to deal with the matter; and the Ministry of Finance has been ordered to instruct the branch Bureau of Finance to consider the conditions of the local places and to abolish all the taxes which tend to harass the people in order to show our sympathy, and to avoid oppression. It is impossible to say that similar conditions do not exist in other provinces. The provincial high Authorities as well as the chiefs of the Bureaux of Finance are hereby ordered to instruct their subordinates to bear in mind the difficulties of the day and carefully measure the means of the people, whilst collecting the various taxes which must be in accordance with law and regulations. If any be found creating new levies for the purpose of extorting money, he will be punished without leniency upon discovery. Let this mandate be universally proclaimed."

# ON CHINA'S INLAND WATERWAYS

## Their Future Development as Part of an Organized Transportation System

[EXTRACTS FROM PRESIDENTIAL ADDRESS OF H. VON HEIDENSTAM, ROYAL SWEDISH CORPS OF ENGINEERS, BEFORE THE ENGINEERING SOCIETY OF CHINA]

In these days of keen competition between nations and individuals—in all parts of the world and on all fields of human activities—every nation, who wishes to live her own life in freedom and strength, is compelled to work with all her energy on a rational utilization and development of the material resources of the country as the only means to form the necessary economic basis for national existence and general progress and development. The Chinese people with a history, philosophy and character so different from the Western Nations, may not find this task to their liking, but necessity will soon be knocking at her door and the sooner the nation prepares herself for this work, the greater are the chances that she will succeed.

With her great wealth in agricultural land, in minerals and natural resources and possibilities, China possesses the most promising qualifications for a sound economic development. Modern competition and material culture have, however, reached such an advanced stage that organization, system and efficient scientific methods are required to achieve that end.

A recognized necessary factor in our Western scheme of material development is the care and furtherance of communications and transport facilities. Amongst the different means of transport in China, the inland waterways, rivers and canals can with safety be supposed always to show a larger amount of traffic, i.e., a larger aggregate number of ton miles, than any other. Thanks to nature and the energy of generations gone-by, the traffic on waterways early reached a high degree of development. So much so that even now, after centuries of neglect, in many districts the facilities offered by the waterways seem to be fully sufficient for the present demand. While admittedly the immediate needs of China lie on the general administrative and financial fields, commercial and industrial development has to go hand in hand with the administrative improvement and although the question of inland waterways as a whole can not be solved to-day or to-morrow, particular instances of waterway problems will soon present themselves and in order to avoid the usual mistakes of haphazard methods, an investigation with a view of

establishing a method and an authority for the handling of such problems appears profitable.

It may be interesting first to review the general question of waterways as compared with other means of transport, particularly railways. The historical order of development of lines of transport has been: rivers—roads—canals—railways. With the coming of the railway in the last century, the inland water communications suffered a serious set-back. The reason therefor was that the waterways in the early days enjoyed an absolute monopoly for transport of certain classes of goods, and like most monopolies, the water-transport monopoly was misused by the imposition of exorbitant freights and tolls. The advent of railways revolutionized the transport world, showed the canal freights to be exorbitant, compelled a general reduction in freight charges and this caused a temporary stagnation in waterway development the world over. In England, the new private railway companies were compelled, in many cases, to buy out the canals, so as to overcome opposition from vested interests, and a large percentage of English canals remain in the hands of the private railways; but on the European continent where rivers and canals are more naturally adapted for and predominate as means of transport, a resuscitation of inland navigation has lately taken place.

Even in topographically favourable country, without inclines and plenty of water available, the average cost of construction of a canal is quite equal to that of a railway carrying the same traffic, but the cost of maintenance and working, i.e., staff, stock, and traction is less on waterways than on railways. The wear and tear on the cargo-carrying stock is smaller and the life of plant longer. And generally speaking a unit of motive power can haul a greater weight on water than on rail if the most favourable conditions for water hauling have been obtained. In any fair comparison between rail or water, one must of course presume that in both cases the methods of handling traffic, loading, and unloading, and general organization are full developed and rational. It is not difficult to show that for intense slow traffic, transport on navigable rivers is cheaper than any railway transport, but in broken, undulating country, where a canal may possibly be constructed, but the traffic is not highly developed, the railway will prove more economical.

The last 255 years have seen not only the European but also the American continent very busy in setting its canals and rivers in order for inland navigation, generally by initiative and under management of the state. In the face of much opposition it has there been found that when constructed on truly economical lines, railways and waterways supplement each other and mutually increase each other's traffic and economic value.

It is well to keep in mind that from the point of view of national economy, the question of cheap transport is a vital one, because all expenditure on transport is of necessity an unproductive one, as it neither improves nor creates new values or products, and the bringing down of the transport cost to a minimum thus means advantage both to producer and consumer.

On account of the varied objects served by waterways, the handling of the waterway-problem on pure business principles—i.e. with a view to returns on capital—is by no means possible and a qualified opinion on the point, whether the advantages accruing from a waterway are worth the expenditure, is often difficult to form. But as I am here limiting myself exclusively to the transport side of the general problem of waterways I think I am right in saying that a waterway for cheap transport of goods (or such part or percentage thereof as may be considered performing transport duty) should be always judged also from the business-point of view, with all allowances made for the peculiarities of each case. For instance in cases where waterways are free from tolls it may throw an interesting light on the value of such a waterway, if a calculation were made to show, what tolls would have to be collected per ton (or ton mile) in order to make the canal a self-supporting concern.

Further, it should be understood that it is in regard to the mode of working where the improvement and development of waterways has to be found nowadays, which ought to be specially remembered when the question is applied to China. The first and most important step of improvement on natural waterways is to ensure the safety and continuity of navigation by establishment of navigational aids, by signals and buoys, by removing of obstacles, by control and supervision. The next step would be to rationalize the handling of cargo, the general organization and management and the size of vessels and mode of traction, and first after or simultaneously with those reforms, the problems of regulation of rivers and large canal-works can be successfully tackled.

Reverting to the conditions in China, the present state of her navigable inland waterways is all but creditable to her. Chaos and neglect are supreme everywhere. The only light spots in the picture are the places where the Maritime Customs have succeeded in reforming and improving things. I hold, however, that the time is soon approaching when the problems of inland navigation as part of the great problem of cheap transport should be given full attention in this country and the reasons which speak therefor, I shall now briefly put before you:

The railway system will soon be comparatively well developed and by the completion of the lines now under construction, the Hankow-Canton, the Hankow-Szechuen, the Nanking-Changsha, the Pukow-Singyang and certain other proposed lines, the Government will, as far as trunklines go, have accomplished the majority of the main commercial, strategical and political lines, which in any case would be required in order to bind together, politically and strategically, this vast empire.

Considering that in the rational development of the communications of any country, a stage will soon be reached when a proposed further railway development should always be compared with possible waterway development and *vice versa*, it is clear that the sooner the data for such comparisons are collected and made available, the better it is for the harmonious development of transport facilities.

Due to the great war, foreign capital, whereupon so far railway development has been largely dependent, is during the next decades not likely to be available for railway loans to the same extent as before, and China may now be more left to her own resources.

The capital spent on labour, construction and materials and even floating plant for improvement of rivers and canals remains all, with very few exceptions, in the country, while in the case of railways the money spent outside China on foreign imports of bridges, rails, sleepers, locomotives and rolling stock is considerable.

In very many cases the improvement of an existing waterway can be done gradually with small yearly capital outlay, so as to give direct and immediate advantages to both through and local traffic. The large capital expenditure during 5 or 10 years required to complete a longer railway for through traffic is not essential. In the case of China this is an important point in favour of waterway development.

The mere existence of an excellent nucleus of waterways and possibilities of development speak for their rational utilization. Compared with other countries the cost of construction and amortization and interest on capital required for present improvement of waterways will be small, counted per unit of length.

Generally speaking, for construction and improvement of canals, there exists no more favourable ground than the great plain of China, stretching from the Gulf of Pei Chi Li to the Chien Tang River. Further China has her widely spread, large, navigable river systems, which are often cheaper to improve than to build canals, and here lays one of her greatest assets on the transportation field.

The whole history of China is bound up with her rivers and waterways and a continuation of her waterways development would come natural to her and her people and need comparatively little foreign assistance both in construction work and traffic.

This assistance technically, if I leave out the delicate question of administration altogether, need only take the form of investigating and controlling engineers. The Chinese, who with due training and under proper directions, soon serve their apprenticeship, will undoubtedly be able to cope with the work and show their natural ability therefor.

The small costs of establishing loading and unloading facilities along a waterway make its banks at any point a fine site for all kinds of industries and factories. The existence of an efficient waterway-transport service thus stands for decentralization of industrial and factory districts and has a great importance for the social conditions of the country, by avoiding the overcrowded unhealthy conditions of large manufacturing centres.. Further the agricultural interests along a waterway derive great benefits from the ease whereby *at any point* certain cheap goods such as stone, sand, timber, agricultural products, etc., can be shipped. In China, the whole industrial development is still in its infancy but it will, as in every country, greatly depend on whether the large producing districts are able to send their products to the consuming centres (for refining industries, re-distribution, export, etc.) at comparatively small cost or not; with other words, on cheap transport for raw products.

The mere enumeration of some of the problems confronting China in the future development of her waterway problem shows how large the task is. The data available, both in topographical, technical, economical, traffic-statistical and other respects, are so scant that reliable conclusions are impossible to arrive at at the present time.

But one thing is certain: If the present policy of all rail and no water development is continued indefinitely, this country may run the risk of not having its primary natural means of transportation properly utilized and other means developed at their expense, which would ultimately mean an indirect but large national loss.

The remarks above made only view the inland waterway problem from the point of view of transport chiefly of raw or refined products for agricultural and industrial interests. Naturally in dealing with the rivers of China there are other and even more important issues involved, such as flood-prevention, drainage irrigation, waterpower, timber floating, etc. etc. Further, part of the traffic on several of China's inland waterways comes under the heading of ocean navigation, which in these cases of course puts another colour on the problem.

Thus it is clear that the general problem of waterways and all that it involves in different fields and activities, has to be approached with a very open mind and on the basis of most careful preliminary studies on many different fields, one of the most important of which undoubtedly is that of transportation.

The relative importance and economic value, as compared with other means of transport, and general character of the inland waterways varies considerably in different countries and the results from one cannot be applied to another.

The first step to ensure the right development of the transport problem in China would therefore be an investigation of the conditions of the waterways—carried on for a certain length of time on broad and comprehensive lines—and collection of the data required to form an opinion on the main inland navigation improvement scheme and possibilities, as a preliminary to the formulation and enactment of a definite government policy in waterway matters.

# JAPAN'S BUDGET FOR 1915-16

The General Budget for the Financial Year 1915-16, following in the wake of that for 1914-15 which had failed to pass, was framed with the object of completing the administrative and financial adjustment which had been commenced in the year 1913-14 and of carrying out various urgent plans; but unfortunately, an official report explains, the provisions in it for an increase of two army divisions in Chosen aroused the opposition of the House of Representatives, with the result that the House was dissolved at the end of December, 1914, and the General Budget and the various special account Budgets were rendered ineffective and the Government had to fall back upon the Budget for the preceding year according to the provisions of Art. LXXI of the Constitution.

In the General Budget for 1914-15 which had to be followed in the succeeding year according to the Constitution, the total revenue was put at *yen* 672,195,010 (£68,851,275) and the total expenditure at *yen* 651,139,899 (£66,694,653); but these figures being merely formal standards, the Government, following precedent in the same manner as in the preceding year, framed a sort of self-denying working Budget within the limits of the formal Budget.

Upon adding the amounts given in the working Budget which was framed as above stated and the amounts given in the Supplementary Budget which was passed at the special session (the thirty-sixth session) when the Diet was convened in May, 1915, that is to say practically, according to the Budget to be carried out in 1915-16, the revenue is put in the ordinary section at *yen* 524,348,823 (£53,707,755) and in the extraordinary section at *yen* 96,641,441 (£9,898,744) (the sum to be brought over from the preceding year being put upon comparison with a similar sum brought over in 1914-15 at *yen* 47,948,882 (£4,911,286) according to calculation made in June, 1915, making a total of *yen* 620,990,264 (£63,606,500); and the expenditure stands in the ordinary section at *yen* 402,742,689 (£41,251,940) and in the extraordinary section at *yen* 187,559,241 (£19,211,230), making a total of *yen* 590,301,930 (£60,463,170), and thus leaving a surplus of *yen* 30,688,334 (£3,143,330). In the ordinary sections of revenue and expenditure there is a surplus of *yen* 121,606,134 (£12,455,816).

The following table gives a comparison of the revenues and expenditures of the working budgets of the two years 1914-15 and 1915-16. (By the term Budget in the remaining portion of the present article to be understood the working budget of either of the two years above referred to).

| | 1915-16 | 1914-15 | Decrease |
|---|---|---|---|
| Revenue | *yen* | *yen* | *yen* |
| Ordinary .. .. | 524,348,823 | 534,182,862 | 9,834,039 |
| Extraordinary .. | 96,641,441 | 120,132,239 | 23,490,798 |
| Total.. .. | 620,990,264 | 654,315,101 | 33,324,837 |
| Expenditure | | | |
| Ordinary .. .. | 402,742,689 | 415,971,859 | 13,229,170 |
| Extraordinary .. | 187,559,241 | 207,880,569 | 20,321,328 |
| Total.. .. | 590,301,930 | 623,852,428 | 33,550,498 |

Upon comparing the revenue for 1915-16 with the estimate for the preceding year, we find that in the ordinary section there is an increase of *yen* 6,270,000 (£642,221) in taxes and duties, owing mainly to an increase of *yen* 3,960,000 (£405,613) in income tax and *yen* 1,380,000 (£141,350) in sugar excise. Moreover, by the increase of receipts on account of war and curtailment of expenditure in consequence of administrative adjustment, the profits of the various Government works and factories increased by *yen* 1,150,000 (£117,792); there was an increase of *yen* 9,770,000 (£1,000,717) in the transfer of the Monopoly Bureau profit by recovery of the amount of decrease temporarily caused in the preceding year through a revision of the financial year relative to the postponement of payment of prices for monopoly goods; and there was also an increase of *yen* 6,850,000 (£701,629) through an increase of goods sold and delivered; thus, the receipts from Government enterprise and State property increased by *yen* 18,160,000 (£1,860,084). There was also an increase of *yen* 2,590,000 (£265,287) in the transfers from the special accounts for the Governments-General of Chosen and Taiwan; thus, the total increase came up to *yen* 27,040,000 (£2,769,640). But, on the other hand, in consequence of the adjustment of the tax system which had been decided upon in the preceding financial year, the reduction of tax rates caused a decrease of *yen* 1,930,000 (£197,685) in land tax, *yen* 7,450,000

(£763,085) in business tax, *yen* 1,250,000 (£128,034) in succession tax, and *yen* 30,000 (£3,073) in bourse tax, making a total decrease of *yen* 10,670,000 (£1,092,902). Moreover, taxes and duties of all kinds were seriously affected by the great war in Europe; thus there was, among others, a decrease of *yen* 17,870,000 (£1,830,380) in Customs duties, *yen* 5,630,000 (£576,667) in textiles consumption tax, and *yen* 1,350,000 (£138,277) in bourse tax, making a total decrease of *yen* 25,830,000 (£2,645,703); and decreases in the stamp receipts, miscellaneous receipts, and transfers from deposits special account brought up this total to *yen* 36,870,000 (£3,776,503), making the net decrease in the ordinary section *yen* 9,830,000 (£1,006,863).

Upon comparing the expenditure for 1915-16 with the estimates for the preceding year, we find that in the ordinary section, with the progress of the already-fixed programme, there was an increase of *yen* 2,990,000 (£306,258) in the new warships expenditure, annuities and pensions increased by *yen* 2,670,000 (£273,482), and the second reserve fund by *yen* 2,000,000 (£204,855), and these with the sum to be transferred to the Government-General of Taiwan and expenses required for the stationing of two army divisions in Chosen brought up the total increase to *yen* 11,410,000 (£1,168,698). On the other hand, the transfer to the sinking fund decreased by *yen* 19,200,000 (£1,966,609) on account of the decrease of the amount to be devoted to the redemption of the national debt in consequence of the revision of the Law concerning the Sinking Fund Special Account; there was also a decrease of *yen* 3,280,000 (£335,962) in consequence of administrative adjustment; and these, together with reductions in provisions expenditures under the army military expenses section and various repayments, brought the total decrease to *yen* 24,640,000 (£2,523,814), which made the net decrease of the ordinary section *yen* 13,220,000 (£1,354,092). In the extraordinary section, there was an increase of *yen* 20,000,000 (£2,048,551) in the loans to the Imperial Railways special account and of *yen* 8,630,000 (£883,950) in the loans to the Chosen undertakings fund; the warships construction expenses increased by *yen* 11,830,000 (£1,211,718), and these, with the war reserve for 1914, increased amount of transfers to the waterways improvement fund special account, increase of the Monopoly Bureau permanent working expenses fund, Chosen divisions construction and equipment expenses, and additional expenses for the extension of the Steel Foundry, made the total increase *yen* 59,540,000 (£6,098,535); but on the other hand, there was a decrease of *yen* 20,820,000 (£2,132,541) in the continuing expenditures on account of the reduction of the already-fixed annual amounts and postponement of undertakings in consequence of administrative adjustment; the administrative adjustment also reduced miscellaneous expenditures by *yen* 7,690,000 (£787,668); transfers to the military expenses special account were reduced by *yen* 34,680,000 (£3,552,187); and these, with reductions in transfers to the Chosen Government-General special account, and loans for the repair of damage done by natural calamities and relief of localities suffering from poor crops, made the total decrease *yen* 79,860,000 (£8,179,863), giving the net decrease in the extraordinary section as *yen* 20,320,000 (£2,081,327), which made the decrease of the total expenditure *yen* 33,550,000 (£3,436,444).

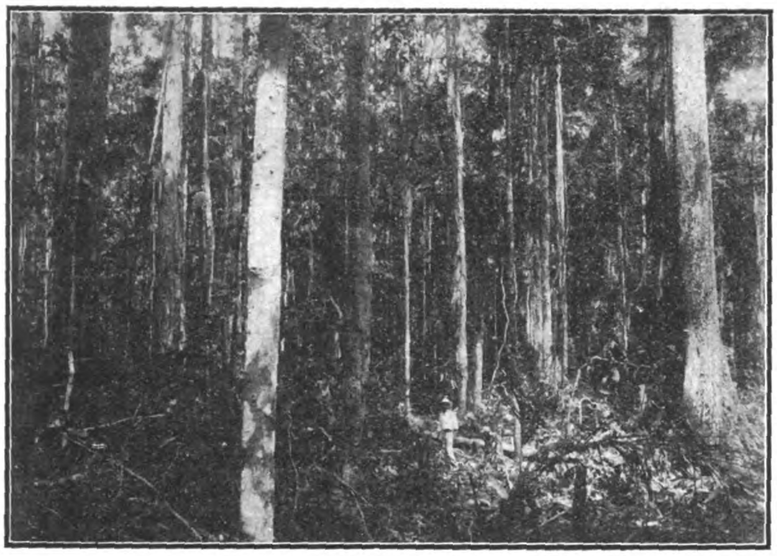
Such is the general account of the revenue and expenditure estimates to be carried out in the Financial Year 1915-16. It had been intended in the Budget for the year to carry into effect the financial programme which had been announced when the present Cabinet was formed and to meet the urgent demands of the State; but unfortunately, in the situation created by the great war, not only was the defrayment of enormous sums required to meet the military expenses and other expenses connected with the war, but the same situation caused a great reduction in the revenue, with the result that there were no means of improving the relations between the receipts and disbursements of the National Treasury and forming new plans for the reduction of taxes and duties with resources created by the surplus in the National Treasury as had been at first intended; and further, in regard to other expenditures, plans could not be carried into effect on account of the dissolution of the House of Representatives. It was a cause of deep regret to the Government; but in regard to the most urgent of these measures, a Supplementary Budget was passed in the thirty-sixth session of the Diet and thus the Government was enabled to carry them into effect. The following were the most important among the measures so passed:—

With respect to the national defence expenditure which had for many years been the subject of heated political discussion, the expenses for the purpose were calculated according to the programme of military and naval preparations which had been decided upon after investigation by the National Defence Council. Thus, the warships construction expenditure is to include the expenses required for completing the three battleships, the construction of which had been commenced in 1913 and the expenses required for building eight torpedo-destroyers and two submarines; the amount is *yen* 90,350,000 (£9,254,328), in addition to the already-fixed continuing expenditures; the total sum is to be spread over four financial years from 1915-16 to 1918-19, when they are expected to be completed, and the additional amount required in 1915-16 was *yen* 22,130,000 (£2,266,721); but as of the amounts already fixed, *yen* 10,300,000 (£1,055,004) was available as it had not been put to use, the actual amount required additionally in that year was *yen* 11,830,000 (£1,211,718). Further, as regards the expenditure required for the permanent stationing of two army divisions in Chosen, in addition to *yen* 240,000 (£24,583) for ordinary military expenses, the expenses for structures and equipment were fixed at *yen* 11,980,000 (£1,227,082), to be spread over seven financial years from 1915-16 to 1921-22, the amount required in the first named year being *yen* 470,000 (£48,141).

For expenditures for the extension of the Steel Foundry there was added to the already-fixed amount the sum of *yen* 3,180,000 (£335,720) as expenses required for the establishment of a workshop for the production of thick plates; it is to be completed in three years from 1915-16 to 1917-18, the additional amount to be disbursed in the first named year being *yen* 112,500 (£11,523). To the already-fixed expenditures for 1915-16 the sum of *yen* 570,800 (£58,466) as expenses for equipment for the manufacture of benzol and toluol was added.

As regards the national debt, although the Government had hitherto followed the policy of not resorting to public or temporary loans for sources of revenue of the general account, it had resorted to them for expenditures for the construction and improvement of State railways, undertakings in Chosen, and waterways improvement fund; but in the Budget for 1915-16 these expenditures were to be defrayed from money obtained by the reduction of the amount to be devoted to the redemption of the national debt, surplus of the Nationals Treasury, and other general revenue, and in this manner it is intended to strengthen the Financial basis and maintain its credit. At the same time the Government amended the provision in the Law concerning the Sinking Fund Account that the amount of annual transfer from the general account for the redemption of the national loans raised for the payment of the expenditures connected with the war with Russia must not be less than *yen* 110,000,000 (£11,267,029), and decided that from the Financial Year 1915-16 the amount to be annually redeemed must not be less than 116/10,000 of the total amount of the national debt at the beginning of the preceding financial year, and the amount of redemption every year must not fall below *yen* 30,000,000 (£3,072,826). Thus, the amount of the national debt to be redeemed was put in the Budget for 1915-16 at *yen* 30,000,000 (£3,073,826), a decrease of *yen* 20,000,000 (£2,048,551) on the annual amount up to that time. Further, the largest amount of Treasury Bills afloat in 1915-16 was *yen* 50,000,000 (£5,121,377) as in the preceding year.

In fine, as regards the working Budget for 1915-16, the war caused a very great decrease of revenue to the National Treasury and, moreover, not only were the various laws relative to the reduction of taxes which had been established and promulgated in the preceding year brought into force, but as the various expenditures connected with the war were considered important, several urgent and indispensable measures were carried out by drastic curtailment of expenses in both the general and special accounts and postponement of many undertakings. Especially, the solution of the question of the increase of army divisions and construction of warships which had long agitated the political world of Japan, will, it is believed, have a very beneficial effect upon political administration in the future.



TYPICAL VIEW OF HARDWOOD FOREST

PHILIPPINE FOREST TREES—ISLAND OF NEGROS

# PHILIPPINE WOODS IN THE CHINA MARKET

[BY E. E. SCHNEIDER, WOOD EXPERT, PHILIPPINE BUREAU OF FORESTRY]

Even before the Spanish conquest of the Philippines, there was some traffic in wood between the islands and China but this was probably limited to very small quantities of some of the most valuable cabinet woods, such as Ebony and Camagon, Narra or Tindalo, and perhaps also some of the very strong and durable woods used in ship building. During the long Spanish regime this traffic increased considerably, especially as regards the latter class of woods. Among the species oftenest mentioned as being exported to China were Aranga, Ipil, Molave, Dungon and Yakal. These exports ceased almost entirely at the outbreak, in 1896, of the revolution against the Spanish power and it was only some years after the establishment of the American government in the islands that they began again.

At first, the exports of wood to China were of the same character as during the latter part of the past century, that is, they consisted mainly of those shipbuilding timbers known since ancient times for their strength and durability, with a smaller proportion of cabinet woods. But meanwhile, two great changes had taken place. Even before the revolution, most of the very high grade construction timbers had been becoming scarcer and higher priced. After peace was established under the present government, the local demand for these woods naturally increased, not only to repair the damages caused by neglect and active destruction during the war, but also for many new undertakings. On the other hand, there began about ten years ago the exploitation on a large scale of the great dipterocarp forests, with the result that there has become available a supply of the very abundant woods of the Apitong and Lauan groups greater than was ever before found in the markets. Practically the only wood whose status has not changed much is Yakal. This, as well as the other high grade construction timbers, had been growing scarcer, but the opening of new forests, while contributing very little to the supply of Molave, Ipil or Dungon, did increase very much the supply of Yakal, so that the latter is now available in as great quantities and perhaps even greater, than during the latter years of the past century.

The result of these changes is that the supply of the very high grade woods except Yakal will always be limited, while there will be available for export great quantities of the Apitongs and Lauans, of Yakal, and of a few other woods, Pagatpat and Lumbayau being the most notable among those that do not belong to the Dipterocarp or Lauan family.

A comparison between these Philippine export timbers and the other foreign woods now used in China is perhaps best introduced by showing the mechanical properties of Philippine woods and those of some of the best known American and

PINECLAD MOUNTAINS OF ISLAND OF LUZON

MANGROVE SWAMP SHOWING LARGER TREES OF PAGATPAT

Bornean timbers. The following figures are taken from "Mechanical tests, Properties, and Uses of Thirty-four Philippine Woods" by Rolland Gardner, Bull. No. 4, Bureau of Forestry, Manila, 1907.

| Name of Wood. | Country of Origin. | Avg. modulus of rupture (lbs. per sq. inch) | Avg. modulus of elasticity (1000 lbs. per sq. inch) | Average specific gravity of dry wood. |
|---|---|---|---|---|
| Oregon Pine | U.S. | 7900 | 1680 | 0.510 |
| Longleaf Pine | U.S. | 10900 | 1890 | 0.610 |
| Cal. Redwood | „ „ | 9110 | 1320 | 0.445 |
| Borneo Yakal | Borneo | 12395 | 2027 | 0.755 |
| Kruen (Borneo Apitong) | „ | 8700 | 1604 | 0.653 |
| Seraiah mira (Red Lauan) | „ | 7450 | 1299 | 0.614 |
| Seraiah Puteh (White Lauan) | „ | 9390 | 1554 | 0.547 |
| Yakal | Phil. Is. | 15690 | 2583 | 0.843 |
| Guijo | „ „ | 15150 | 2158 | 0.708 |
| Apitong | „ „ | 11620 | 2144 | 0.645 |
| White Lauan | „ „ | 9760 | 1653 | 0.446 |
| Red Lauan * | „ „ | 7100 | 1201 | 0.406 |

Yakal is hard, heavy, tough, difficult to split, and very durable; even termites ("white ants") attack it only very slowly; the only destructive agency it does not resist well is the teredo. It is yellowish to light grayish brown, turning to dark brown on exposure, of fine texture and with crossed grain.

Yakal is one of the most valuable timbers in the Philippines for high grade construction, being especially useful for long beams in ship, wharf and bridge building and mill, factory and house construction on account of its great strength and stiffness. It is also used in greater quantities than any other one wood for railroad ties. It is specially recommended for skating rink and ball room floors, where a dense and fine wood is required, and floors subject to very rough usage, such as wharf, bridge and factory floors.

*Prices*: Yakal has been quoted by various companies during 1915 at the following prices; it must be understood that these are for ordinary dimensions and current grades: F.O.B. at mills (Mindanao) $30.00 to $45.00, U.S. Cur. F.O.B. Manila, $45.00 to $50.00. Railroad ties sell in Manila at from $0.75 to $0.875 each, as compared with Japanese oak ties in China (Hankow) at $0.75. All these prices seem high as compared with those of American and Japanese woods, but it must be remembered that in strength and durability Yakal is equal or superior to the best American and European oaks.

*Guijo*. Guijo is only slightly lighter, softer, and less strong than Yakal, but much less durable when exposed to weather or in contact with the ground; it is of fine texture, somewhat cross grained and ashy gray or dull reddish brown in color. For all interior structural parts, or where thoroughly protected by painting, it ranks high among Philippine construction timbers. It is also much used in ship building and especially for keels, ribs, gunnels, etc., of large lighters and sampans. Being tough and difficult to split, but lighter and cheaper than Yakal, it is much used for wagon and cart-beds, axles, shafts, felloes, spokes, bolsters, reaches, etc.; more Guijo is used for heavy vehicles than any other one wood.

*Prices*.—F.O.B. at mills (Mindanao), $27.50 to $35.00 per M.; F.O.B. Manila, $35.00 to $55.00 per M.

*Apitong*.—Apitong in mechanical properties is similar to Guijo, but is of somewhat coarser texture and less tough; its color ranges from light red to dark brown, the greater bulk of the lumber in the market being of a fairly uniform light reddish brown. Apitong is practically identical with the Kruen of Borneo or Krewing of the Federated Malay States. Like Guijo, Apitong is not durable when in contact with the ground or otherwise exposed to very severe conditions. Though somewhat resinous, it is easier to work than Yakal and Guijo.

Apitong is used in Manila in greater quantities than any other one wood in ordinary construction, for posts above stumps, beams, joists, rafters, studding, flooring, etc.; it is also used for sheathing and ceiling, but for this purpose Lauan is employed more than Apitong. It makes a hard, durable and handsome floor when finished with wax.

For railroad ties Apitong is not recommended for tropical climates or where termites are abundant and destructive, but in cold, dry regions it may be expected to give fair service. Several shipments of Apitong have been made to India for railroad ties and for railroad car construction, but no reports are yet available as to the service it has given.

Prices. F.O.B. at mills, $20.00 to $25.00; F.O.B. Manila, $30.00 to $35.00.

The LAUANS. Under this general name are classed together all the light, soft woods of this family known in the Malayan region as "Seraiah" and "Meranti." They range from pale yellowish, reddish or brownish white to dark reddish brown. In regions where any one well-known species is abundant, this will be sold separately and under its own name. Where a number of species are found in very mixed forests, they are felled and sawn indiscriminately and roughly sorted in the yard into red and white, all the bright red to dark red lumber going into the red pile and all those having only a reddish or light brownish tinge into the white.

All the Lauans are comparatively soft and light, and very easy to work. They are almost always distinctly cross-grained, so that, when quarter sawn, they show a conspicuous and often very regular ribbon grain like that of the mahoganies. They all take stains very well, so that the lighter colored ones especially can be stained to any desired shade of gray, yellow, red or brown. They shrink considerably in seasoning, but are not specially liable to warping and, when once seasoned, they work very little.

The Lauans are used in the Philippines for all purposes from the most ordinary rough work to interior finish and highly finished furniture. The only uses from which they are excluded are those requiring either great strength or unusual durability. Red Lauan and Tangile are commonly finished either natural or with stains and fillers that heighten their natural reddish color; Almon, Kalunti and White Lauan are more rarely finished in natural colors. In cheap furniture and clothes chests they are often finished with a yellowish brown varnish similar to that used on Teak furniture in Hongkong, but more commonly a deep, brilliant red varnish is used. In practically all medium grade and cheap houses in Manila both siding and interior sheathing, partitions and ceilings are made of Lauan. This sort of work is almost invariably painted. The Lauans take and hold oil paint very well and have one advantage in appearance over the pines in that they rarely have knots and pitch seams from which the pitch will come through the paint. Not only are knots rare, but such a thing as a loose knot, that can drop out of a board, is almost unknown. Rotten knots, of course, may occur, but sound knots have their fibers so interlaced with those of the surrounding wood that they scarcely constitute an element of weakness.

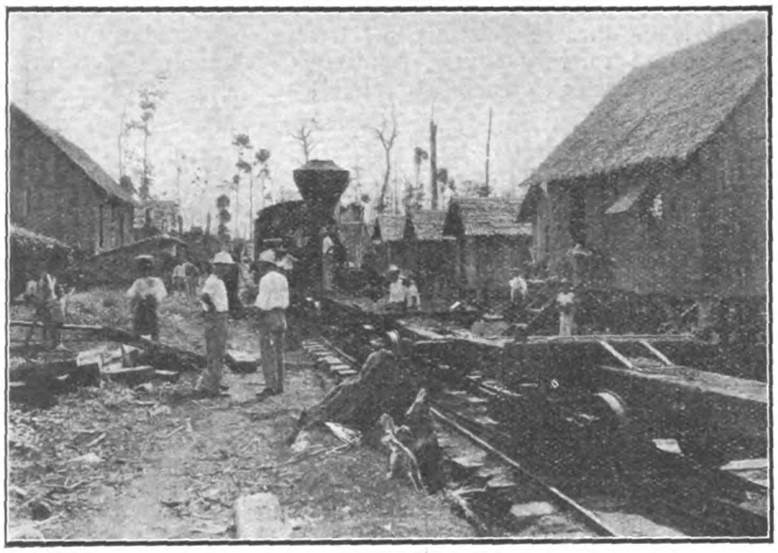
The following are the best known and most abundant species of the Lauan group.

ALMON. Pale reddish, but fading out on exposure to air to light yellow. Few mills separate it from the other light colored Lauans. Where kept separate, sells at about $22.50 F.O.B. at mill or $30.00 F.O.B. Manila.

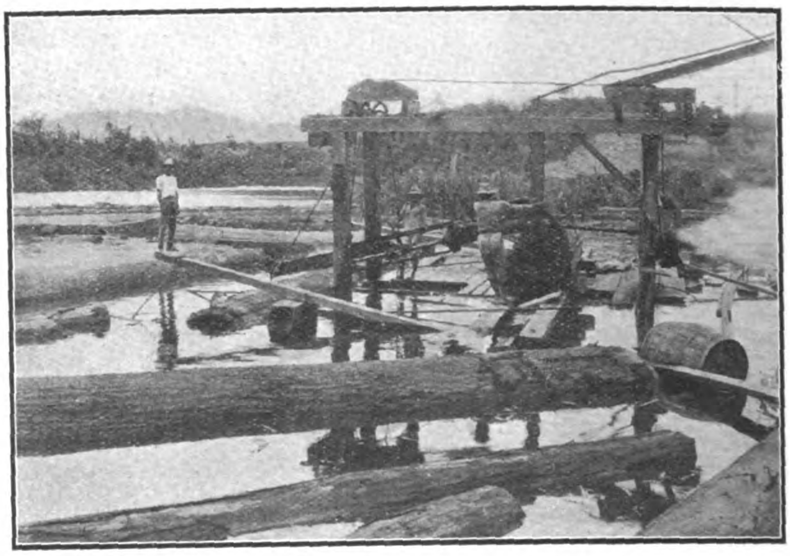
In mechanical properties and color Almon is very close to White Lauan. When stained, they are practically indistinguishable.

BAGTIKAN. Slightly harder and heavier than average Almon and White Lauan. Wood from young trees light colored, but in large trees of a pale, but distinct brown tint. Rarely sold separately under its own name, being generally mixed either with Almon or with White Lauan; some of the darkest boards are

* The tests of Red Lauan were made only on beams with a very high average moisture content (65 to 84 per cent); for seasoned lumber, the figures would be considerably higher, probably approaching those for White Lauan.

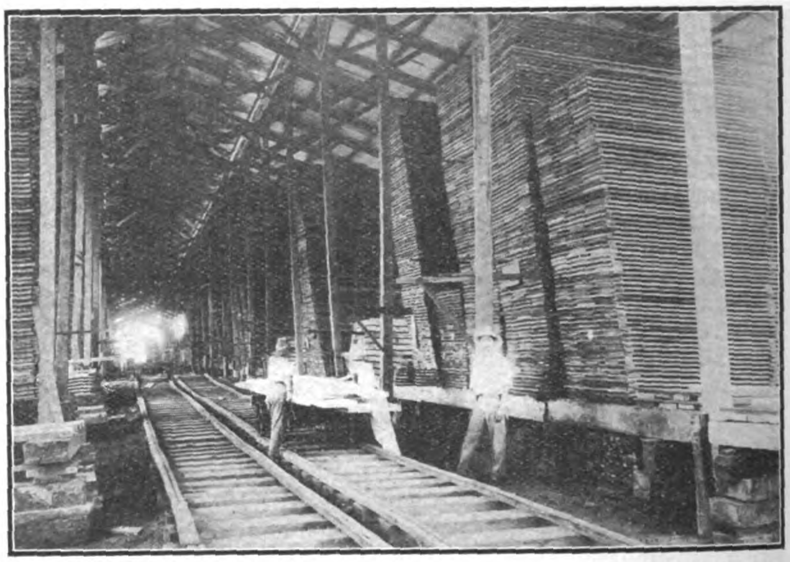


Shea Logging Engine Starting for the Forest

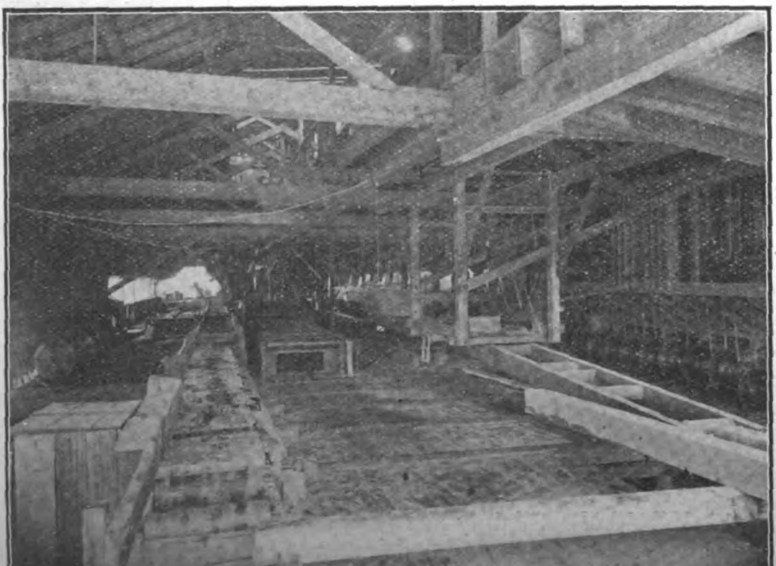


Logs Floated Down River About to Enter Mill

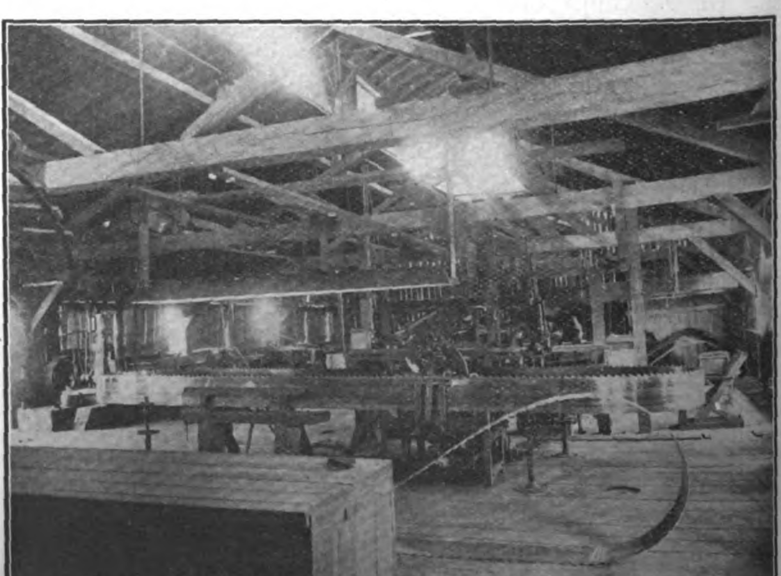
Hauling Logs from River into Mill



Lumber Sheds with Export Stock Piled for Seasoning



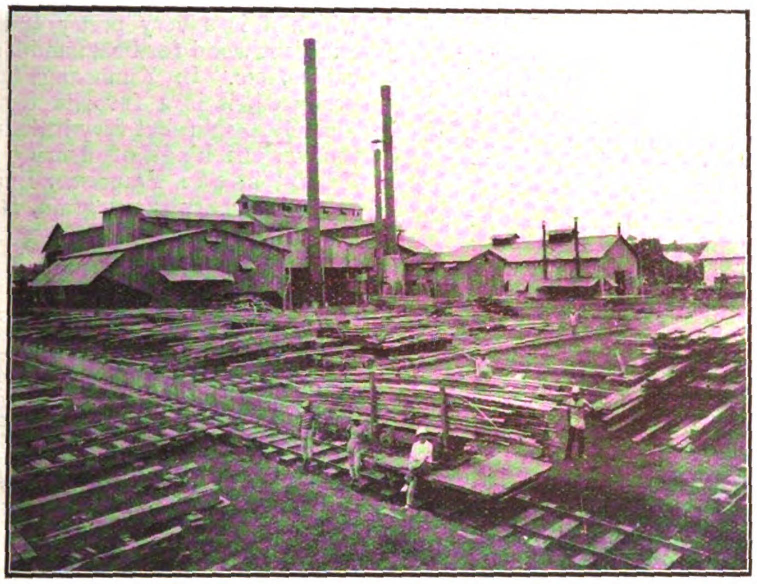
Second Floor of Mill Showing Trimming Saws



Saw Filing Room of Insular Lumber Co.'s Mill

occasionally found in lots of Red Lauan. Unless intended for natural finish where even color is desired, Bagtikan is not different enough in mechanical properties to be separated from the other Lauans.

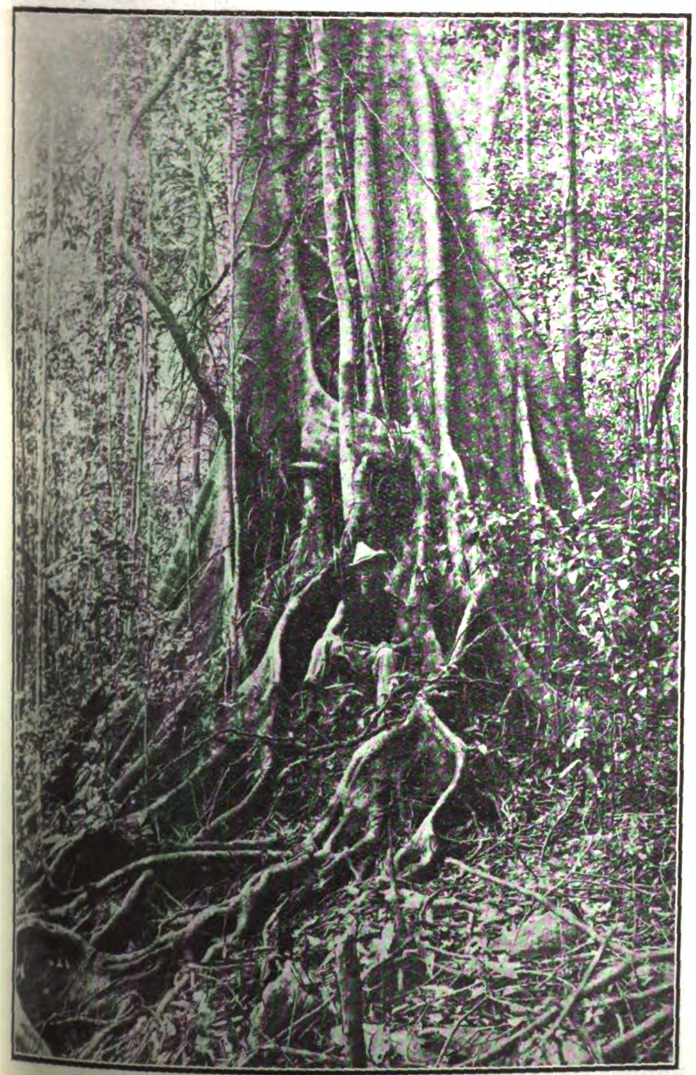
RED LAUAN. This is the most brilliantly colored wood of the family. It ranges from bright pale red to dark reddish brown, but the great bulk of the lumber on the market is of a very uniform red color about as dark as average cigar box cedar. Owing partly to its very regularly cross-grained structure and partly to its color, the ribbon grain in Red Lauan is also more conspicuous than in most of the other Lauans. It is for this reason as well as on account of its great abundance, that Red Lauan has been exported to the United States more than any other wood under the trade name of "Philippine Mahogany," though of course it is not a mahogany at all. For the same reason it has been more used in Manila for interior trim and highly finished furniture than all other cheap and medium priced woods put together. Finished with a transparent varnish, the natural reddish color changes to a rich reddish golden brown somewhat similar to that of a dark golden oak finish. A dark brown filler used before varnishing increases this effect. If a mahogany red finish is desired, a light red filler and a very slight stain will give it a permanent rich red color as brilliant as that of cherry or mahogany.



INSULAR LUMBER CO.'S MILL—SORTING AND DISTRIBUTING TRACKS

Prices. F.O.B. at mills, \$22.50 to \$25.00; F.O.B. Manila, \$25.00 to \$40.00.

TANGILE. This is the heaviest, hardest and finest-grained of all the Lauans. It is rather variable in color; in some regions it is of the bright, glossy red found in the wood of young trees of Red Lauan, while in others it is much darker, but the darker varieties are rather golden than reddish brown. Like Red Lauan, Tangile has a conspicuous ribbon grain. Being denser than the other Lauans, Tangile can be filled and polished with less expense of labor and materials. Also on account of its slightly greater hardness and density, it resists nicking or denting better, which is an advantage for furniture and parts of interior finish subject to occasional knocks.



PHILIPPINE FOREST GIANT SHOWING BUTTRESSED BASE

FOREST WITH UNDERGROWTH CUT AWAY

Prices. F.O.B. Manila, $30.00 to $35.00 per M.

WHITE LAUAN. Light, soft, but difficult to split and fairly flexible and tough; grayish white with sometimes a light brownish tinge, under transparent varnish taking a distinct yellowish tint.

White Lauan is one of the most abundant woods in the Philippines and in most regions where abundant it is cut and sold alone and under its own name. However, there are a number of less abundant species which in the rough board are practically indistinguishable from it and so are frequently found mixed in lots of White Lauan. Almon, light grades of Bagtikan, and Kalunti (a very white species found in Mindanao) are the ones most commonly confused with it.

White Lauan is used more extensively in Manila than any other one wood for all purposes where cheapness and ease of working are of more importance than strength and great durability. Many contractors and builders prefer it to Oregon Pine for concrete forms on account of its toughness and difficulty of splitting. While Oregon Pine can generally be used only once or twice for this purpose, White Lauan will stand using three or four times.

Logs of Pagatpat Ready for Shipment to China to be Used in Construction of the Mausoleum of the Emperor Kuang Hsu

On account of its very light color, it can be stained to any shade desired of gray or yellow to deep reds and browns.

Though somewhat heavier than the lighter pines, it makes excellent packing cases, which will stand much rougher usage than the average pine box.

Prices. F.O.B. at mills, $17.00 to $25.00; F.O.B., Manila, $20.00 to $30.00.

Beside the above, which are all woods of the Dipterocarp or Lauan family, two others, one little and the other not at all known until the recent development of the lumber business in Mindanao, have come into the markets and promise to furnish a steady supply for a good many years to come:

LUMBAYAO. A wood very similar to Red Lauan in general appearance. It has a richer red color and a more striking figure. It is a little harder and heavier and considerably tougher than Red Lauan and also seems to be somewhat more resistant to decay and insect attacks. Its chief use in Manila is for flooring, sheathing and ceiling, doors and windows, and general inside finish. A considerable amount of small dimension stuff is also used for joists, studding and rafters. The street car company has used it for interior finish in electric cars, for which it is a very pretty and durable material. It is also an excellent wood for boats and launches, for ships' interiors, deck cabins, etc. In Zamboanga and Basilan, where it is chiefly produced, it is a favorite for boxes, being tougher and more difficult to split, but very little heavier than the Lauans. Among the various kinds of flooring laid in the Philippine Forestry Exhibit at San Francisco, Lumbayao, on account of its lively color and conspicuous grain, attracted more attention than any other wood.

Prices. F.O.B. at mills, $24.00 to $30.00.

PAGATPAT. This is a hard, heavy wood of very even and straight grain and fine texture, grayish brown to dark chocolate brown in color. It is strong and stiff and durable, being very rarely attacked by insects and having especially a good reputation for durability in wet situations, though not considered quite equal to Molave, Dungon and Ipil.

The chief uses of Pagatpat in the Philippines are for ship, wharf and bridge building, general strong construction, flooring and interior finish.

Pagatpat is easy to work and to finish. Under varnish it takes a very dark brown color. It would undoubtedly take black stains very easily.

The trees are not as large as the largest species of the Lauan family, but still very large timbers can be obtained. The immense timbers furnished for the emperor's mausoleum a few years ago were of Pagatpat from Mindanao.

Prices. F.O.B. at mills, $25.00 to $37.50.

[Supplementary to the article on the same subject, published in the Far Eastern Review of August, 1915, by Forsythe Sherfesee, then Director of the Philippine Bureau of Forestry and now Adviser in Forestry and Co-Director of the Chinese Forest Service. Panels representing the typical natural appearance of all of the woods discussed in this article can be seen in the offices of the American Commercial Attache, Peking—Ed.]

## SUGAR CENTRAL MAY BE DEFERRED

The Philippine Government may be compelled to abandon for the present its plans for the construction of a central sugar mill at Isabela for handling the 1917-1918 cane crop. It is stated that the great increase in ocean freight rates and the increased price of metals of all descriptions will make a central plant at this time cost approximately P3,000,000, while the board has only an appropriation of P2,000,000 at its disposal. In addition to this there appears to be no firm willing to bid on the project if a clause is contained therein obligating the firm to guarantee completion of the mill at any given date, and from the government's point of view this is indispensable.

It is pointed out that to acquire a mill at the present inflated price of materials and abnormal freight rates will mean, in addition to the greatly increased investment of the government, that after war prices have dropped and freight rates have returned to normal, the value of the mill will depreciate in like manner, and that the property itself will be then worth considerably less than it cost to the government.

# BRITISH NORTH BORNEO

[By American Consul George M. Hanson, Sandakan]

The State of British North Borneo is governed by the British North Borneo Co., a chartered company, the only one remaining under the British flag, with headquarters in London. The government is practically the same as that instituted by the British in the government of oriental colonies. The State is under British protection. There is a governor, who is appointed by the company with the approval of the British Secretary of State, and various other executive officers. The country is divided into subdivisions, the head of each being a resident. All appointments to positions are made by the Court of Directors in London, and after 25 years the officeholder is entitled to a pension of half salary for life.

Borneo is a vast island of which little is known. Politically it is divided into four districts—Dutch Borneo, comprising about seven-tenths of the area; Sarawak and Brunei, nearly two-tenths; and British North Borneo, a little more than one-tenth. The old Sultanate of Brunei, on the northwest coast, from which the island derived its name, is now an independent British protectorate. It lies between Sarawak and British North Borneo. The island of Labuan, off the west coast of British North Borneo, is a dependency of the Straits Settlements, and its affairs are administered from Singapore. The other islands that fringe the northeast coast belong to British North Borneo. The company still pays tribute to both the Sultan of Brunei and the Sultan of Sulu. The latter lives in Jolo, in the Province of Sulu, which comprises the islands of the southern Philippines. The east coast of Borneo was formerly included in the Sultanate of Sulu.

### Population of British North Borneo

The population of British North Borneo has been estimated at 500,000, but that figure is but a guess, as a large part of the interior has never been explored and no one has any idea

Dyak Man and Wife in Gala Dress

Mr. George M. Hanson

of the number of Dusuns and Dyaks who live there. The known population is estimated at about 200,000, which includes the whites, less than 400; the Chinese, Japanese, and Hindoos, about 30,000; and the native Malays of the coast towns and island villages. The only means of transportation anywhere in Borneo is by boat, and the back country away from the rivers has never been traversed by white people. The writer is told that within 20 miles of Sandakan are natives who have never seen a white man and who live by the spear and the blow-pipe the same as their forebears of the tenth century. Their villages are hemmed in by mountains and jungle and there is no communication except when some members of a tribe go on a head hunting trip. These natives are for the most part of the lowest, especially in their manner of living. Their courage, however, is undoubted, and they make good material for any kind of police work. The inhabitants of the island and river towns are quite different. They show the effect of white occupation for between 30 and 40 years.

Civilization has stamped Borneo here and there along the coast whenever good anchorage could be found, and a number of settlements have been located a hundred miles or more apart. To these settlements have come the Chinese in great numbers and, in lesser proportions, Japanese and Hindoos. The Chinese as a rule come to stay, and many have taken wives from among the native Malays. The result is a strong Chinese strain in the population in all the towns from Sarawak around the north and east coasts to Dutch Borneo. Later followed the artisans and gardeners from Canton and Hongkong, and when rubber cultivation was started coolies were brought over in great numbers. So that Sandakan, which has a population of about 10,000, is a Chinese town. The business men generally, contractors, artisans of all kinds, skilled workmen, and clerks, are practically all Chinese. The white population is small. Oriental labor is so cheap that no white man is employed, except in some capacity of leadership or head of a department. In subordinate positions, such as accountants, chief clerks, etc., are found Hindoos and Eurasians.

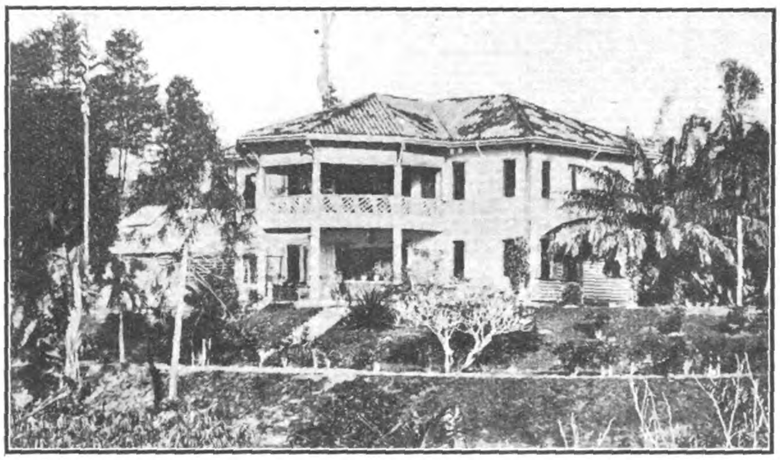
### Wild Animals Numerous

A peculiar feature of Borneo is that it is practically an immense game preserve. The white inhabitants are Government officials, planters, and businessmen and have neither time nor inclination to do any hunting. The result is that the game with which the country abounds is rarely disturbed. Elephants and rhinoceroses are so plentiful that they are a nuisance to rubber and coconut estates by destroying young trees. The telegraph line across the country is out of commission a third of the time because the elephants rub against the posts and push them down. Two kinds of wild buffalo are found and many kinds of deer. As in all tropical countries, wild pig is everywhere. Many are killed every year in and around Sandakan. Crocodiles are numerous near the mouths of rivers and snakes are plentiful. The most common are the python, sometimes 25 to 30 feet long, and the cobra. The latter is venomous, as is also the swamp snake and the rainbow-colored bamboo snake. The carniverous animals are represented by the honey bear, the black panther, and a small tiger. The black scorpion, from 6 to 10 inches long and broad in proportion, is seen occasionally. Iguanas are common, as are also anteaters, sloths, and armadillos. Orang-utans grow to a height of 4 feet 6 inches and are husky. An export duty of $2.77 each has been put on Orang-utans, dead or alive.

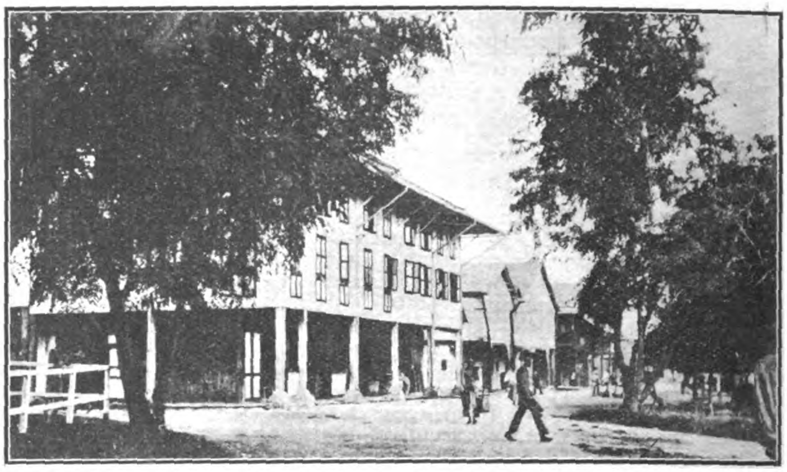
### Industries and Products of British North Borneo

The industries of British North Borneo are divided into two parts, or three, if manufacturing may be included. These are: (1) Cultivation of tropical products, such as tobacco, coconuts, pepper, and rubber; (2)

Tapping a Rubber Tree



AMERICAN CONSULATE, SANDAKAN



SCENE ON THE BUND, SANDAKAN

gathering jungle and forest products, including timber and animal products.

Manufacturing is limited to the making of copra and cutch, the latter a dye and the product of the mangrove tree. Small boats and lighters for local use are built by the China-Borneo Co. and the North Borneo Trading Co. A small factory in Sandakan puts up aerated waters and manufactures enough ice for local consumption and for supplying ships. A small amount of coal is mined.

### Tobacco and Rubber Estates

In the cultivation of tropical products tobacco has led for several years, closely followed by rubber. The tobacco estates, however, have been gradually reduced in number each year, while the production of rubber has been increasing, so it is only a matter of time until rubber will take first place. No less than 20 rubber estates, with an acreage of 26,360 and capital of $11,970,000 are under cultivation, 12 of which are producing. Within two or three years all estates will be exporting crude rubber and in five years all the trees that have been set out on all estates will be ready for tapping. The total rubber production, that is, cultivated rubber, amounted in 1914 to 1,373,000 pounds. Considering the loss of the entire continental market, the price has kept up well, and practically every estate now producing will show a profit.

Only six tobacco estates (capital, $1,265,900; acreage, 12,220) raised a crop for export. The tobacco growers for several years have been complaining of the uncertainties of tobacco cultivation owing to the absence of rain at the time it is particularly needed. That is the reason tobacco cultivation is not growing in favor. Both rubber and tobacco growers are inclined to the opinion that if their estates were planted in coconut trees the output would be more profitable. The coconut crop is a natural one which rarely fails and the trees require little attention. There is always a ready sale for copra and coconut oils at prices that guarantee a splendid interest on the capital invested.

### Jungle and Forest Products

The gathering of jungle produce is the one thriving business in Borneo. Outside of the timber trade, which is carried on regularly with Hongkong at profitable figures, the jungle and forest products range from armadillo skins to birds' nests. The latter are found in great numbers in the dark recesses of the immense caves which are found all through the mountainous country along the east coast. These nests are built or formed of a sort of gelatin, or masticated food, by a kind of swallow, and vary in value according to color and quality. The pure-white nests are the most valuable; the darker ones are cheaper and less palatable. Hongkong is the great market for birds' nests, where they enter into the food supplies of the wealthier Chinese.

An important jungle product is rattan. It is plentiful all over British North Borneo, and the exports for 1914 were valued at $58,667. There are at least three different kinds, and the price varies accordingly. The cheaper kinds are used for making the blinds and mats so common in tropical buildings, while the better kinds are made into furniture, or used for whip handles, walking sticks, etc. The exports go to Singapore and Hongkong.

Other jungle products include camphor, dammar and various other kinds of gums and resins, including gum copal, beeswax, guttapercha, india rubber, fruits, etc. The supply of jungle produce could be vastly increased if the demand justified it. The business is handled by Chinese traders who arrange with the native Malays to search the jungle and bring in everything salable. These Malays, however, are naturally indifferent to work of any kind and, besides, are very superstitious. For instance, when on a produce-gathering expedition, if a certain kind of bird flies across the trail ahead of the party, no work can be done that day; if a snake is seen and not killed, the party must return home for the day; if the cry of a certain bird is heard on the right of the trail, it is a warning that no work must be done for two days, etc. But the amount of practically all kinds of jungle produce is so great that, notwithstanding the little work done, large quantities are gathered, and the trade is a great help to the native population. The Bajaus or Sea Gypsies, Malay natives who live on the water along the east coast, add to the export trade by collecting turtle eggs, tortoise shells, shark fins, beche de mer or sea cucumbers, mother-of-pearl, clamshells, and other sea products. Their chief occupation is fishing, and the gathering of these articles is largely incidental.

### Discovery of Petroleum

At least two companies have full forces at work drilling and exploring for petroleum in British North Borneo. The discovery of oil in immense quantities in Dutch Borneo and also in Sarawak has led to the belief that it might be found in other parts of the island. A Dutch company is operating at Sebatik, in the southern part of the State, and an American company has been exploring the country on the west coast of British North Borneo and also in Brunei. Oil in small quantities has been found by both companies, but not enough to flow. The wells in Miri, Sarawak, have lately been taken over by the Standard Oil Co. In his annual report Gov. Parr refers to the oil situation in part as follows:

No one with any real knowledge of this territory can doubt its potential wealth. Of the existence of mineral oil in payable quantities it is premature to speak, but indications are promising in some of the localities prospected. The existence of mineral deposits

BRITISH NORTH BORNEO TOBACCO PLANTATION

DAVAL BAY TOBACCO PLANTATION'S OFFICES

DYAK CHILDREN, WEARING CORSETS OF BRASS WIRE

NATIVE HOUSES IN BRITISH NORTH BORNEO

remains to be proved, and I trust that efforts will be made in the near future to prove it; possibly the expert geologists employed by the oil companies have some exclusive information on the subject, but if so they are naturally reticent, and as far as one can foresee in the present stage of development, the future prosperity of the country depends chiefly on agriculture and the timber of its magnificent forests.

### Large Timber Supplies

Probably the greatest natural resource of British North Borneo is the supply of timber, as practically the entire surface is covered with forests. Both hard and soft woods are found in large quantities, and the export to Hongkong has become an important item of commerce. Steps are being taken by the Government to develop the timber possibilities, and if present plans are carried through there ought to be a market for several up-to-date American sawmills, together with logging equipment, etc.

### Exports to United States

The exports to the United States are limited to two articles—cutch, an extract from the bark of the mangrove tree, and crude rubber. Cutch is manufactured on a small scale at Sandakan, and regular shipments worth about $10,000 a year are made to the United States. It is used as a dye, for tanning purposes, also as a preservative when applied as a varnish. The possibilities for the production of cutch are unlimited, as the entire low country bordering the coast and around the mouths of rivers is covered with mangrove trees. After the bark is stripped the wood is used for fuel. Large quantities are shipped to Hongkong.

Shipments to the United States of para, or crude rubber, were worth $11,500 in 1914 before the embargo laid on the export of rubber to foreign countries was declared by Great Britain. Ordinarily all Borneo rubber is either shipped overseas direct or is disposed of in Singapore, whence it goes to all parts of the world. American purchasers who deal direct with producers in Borneo will save the commission which otherwise would go to the middleman in Singapore.

### Exports to Philippine Islands

The $25,000 of exports to the Philippine Islands represents for the most part general merchandise and food supplies which go to the Chinese stores in Zamboanga and Jolo from branch houses here. It is customary for the larger Chinese firms to have branches which can be supplied by a regularly established steamer service, and in that way considerable merchandise is sent from here to the southern Philippines. Some lumber in the shape of camphor wood, highly valued for building purposes as it is considered ant proof, is shipped. The largest single item in the Philippines trade is coal. Skippers of local steamers state that Borneo coal is preferable to either the Japanese or Australian article, because it does not "clinker" and leaves very little ash. The 3,020 tons sent to the Philippines last year was for the civil government at Zamboanga. It is customary for coast guard boats and vessels in the customs service of the Philippines to coal at Sandakan. The mines are situated in the southern part of the State, close to the Dutch boundary line, and the coal is brought to Sandakan in large lighters.

### Total Import and Export Trade

There is no record kept of the countries of origin of imports into or the countries of destination of exports from British North Borneo. The imports during 1914 were valued at $2,642,710, compared with $3,021,603 for 1913. The value of the exports decreased from $4,110,061 in 1913 to $3,477,935 for 1914.

In both imports and exports the trade for 1914 suffered considerably, due undoubtedly to the war. The long-continued drought affected the tobacco crop and to that cause may be attributed the loss of nearly $600,000 in the exports of this product. The loss of $85,000 in rubber exports was due in part to the drought, but mainly to the demoralization of the trade at the beginning of the war. Of late prices have picked up and better things are hoped for by estate owners.

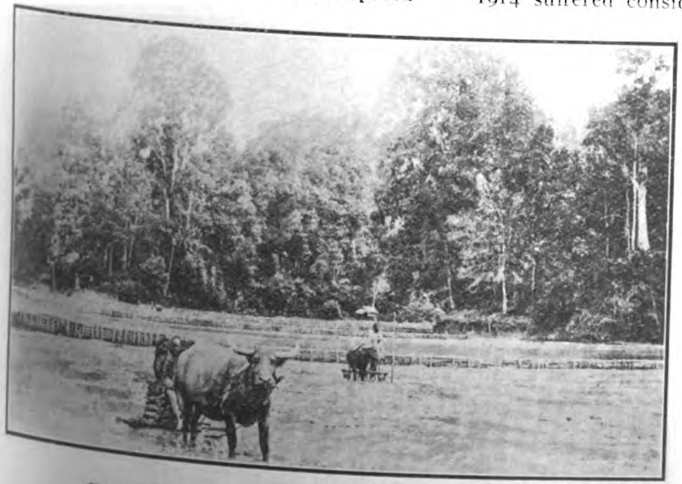
The great loss in the exports of sago is accounted for by the elimination of sago palms in clearing land for rubber estates. There was also a decrease in the exports of birds' nests, coal, dammer, including gum copal, gambier, gutta-percha, india rubber, pepper, and rattan. Timber about held its own. The decrease in the shipments of hemp was due to the loss in imports from the Philippines. The gain in the export of opium was due to the fact that the island of Labuan, under the Straits Settlements, is supplied from British North Borneo. Rhinoceros horns are shipped to Hongkong, where they are valued highly when ground as an ingredient of Chinese medicine.

Items showing gains in the exports included copra, cutch, opium, dried fish, beeswax, and hides.

The imports show a falling off in the total of nearly $400,000, largely in cloth, opium, rice, flour, and grain, and treasure. The great loss in railway and telegraph materials is not significant, for the reason that the wireless plant has been completed and the construction of the railway line on the west coast has been finished. The other losses can be charged largely to the war. Less opium was smoked and less provisions consumed. Many coolies returned to China after war was declared and the consuming capacity of the community was diminished.

### Opportunities for Trade Extension

The collector of customs informs the writer that the imports from the United



HARROWING A RICE FIELD WITH WATER BUFFALO

STREET SCENE NEAR SANDAKAN

States come mainly by parcel post. Trade with the United States does not amount to much, nor can much be expected. There can be no commerce without people who buy and sell, and the commercial population of British North Borneo is too small yet to have any effect on world trade. It should be borne in mind that this is a tropical country, where the wants of the natives are few and the native trade, therefore, is insignificant. As for the rest, a population of less than 400 Europeans, scattered over an area nearly as large as the State of Maine, has not enough needs to make the demands of trade interesting except to the country that has the transportation facilities.

The trade connections and transportation facilities are all British. The result is that nearly all principal exports except rattan and timber go to London and all imports come from there. There is practically no independent buying in Borneo. The business houses here are, for the most part, merely branches of parent houses in Singapore, and all stores and shops are supplied through Singapore. Since Singapore is British, naturally its source of supply is principally British. But Singapore is a large shipping center and distributing point, and besides is a free port. It would be to the advantage of American exporters to seek an outlet for their wares in Singapore rather than look for trade in the remote cities of the so-called Malay Archipelago. At Singapore all imports and exports for a district comprising a population of at least 100,000,000 people are transshipped. Singapore is the hub of the wheel where all trade and commerce for this vast district centers.

### Transportation and Mail Facilities

Since the war transportation facilities have improved in that now there is competition, whereas before the war only one line of steamers was scheduled from Singapore. A Chinese company is competing with the subsidized steamers of the Straits Steamship Co. from Singapore to the southern Philippines, calling at all Borneo ports, with the result that there is a weekly service to and from Zamboanga and Jolo.

An important aid in the administration of civil affairs is the wireless plant, consisting of four stations, one each at Jesselton, Kudat, Sandakan, and Tawao, recently installed. All stations can be used for communication with the Philippines.

### Other Improvements

Among the improvements carried out in 1914 may be mentioned the reclamation work at Jesselton, including the construction of a new steel and concrete wharf; an addition to the wharf at Sandakan, so that now two ordinary cargo steamers can dock at the same time; the completion of a new dam for the catch basin reservoir at Sandakan; the building of a hospital for the insane; and the continuous work of improvement on the roads. A large hotel has been built at Jesselton and an electric light scheme has been projected. A new laboratory has been constructed for the principal medical officer at Sandakan and new quarters for the lepers at Bahala Island have been completed. All public work, such as road improvement and keeping streets and parks in repair, is done by Chinese women.

The total revenue of the government during last year from customs duties, both imports and exports, extraordinary receipts, such as revenue from opium, liquor, and gambling monopolies, and revenue from land taxation, telegraphs, harbor dues, etc., amounted to about $1,110,000. The published administration report does not, however, include a summary of expenditures, so it is impossible to even approximate a balance sheet as to the net annual income. The action of the Chartered Co. in setting aside large sums for improvements, together with the policy of aiding financially many of the estates in tiding over bad seasons, indicates, however, that the treasury is in good shape.

# THE SOUTHERN SHAN STATES RAILWAY

The Southern Shan States Railway has occupied prominent public attention of recent years, but we do not think it is fully realized that this project is distinctly of a mountain character in its climb to the wheat-growing uplands, but the photograph which we are privileged by the courtesy of the Indian Railway Board to reproduce in this issue will serve to bring this home. It was the highly successful results which followed the introduction of wheat cultivation in the Southern Shan States which rendered necessary railway communication between the wheat-growing districts and the port of Rangoon. Surveys were sanctioned as far back as 1900 for a light line from some point on the Rangoon-Mandalay section of the Burma Railways to Taungyi. This work was carried out during 1901-02 and showed the prospects of the railway being remunerative as very doubtful.

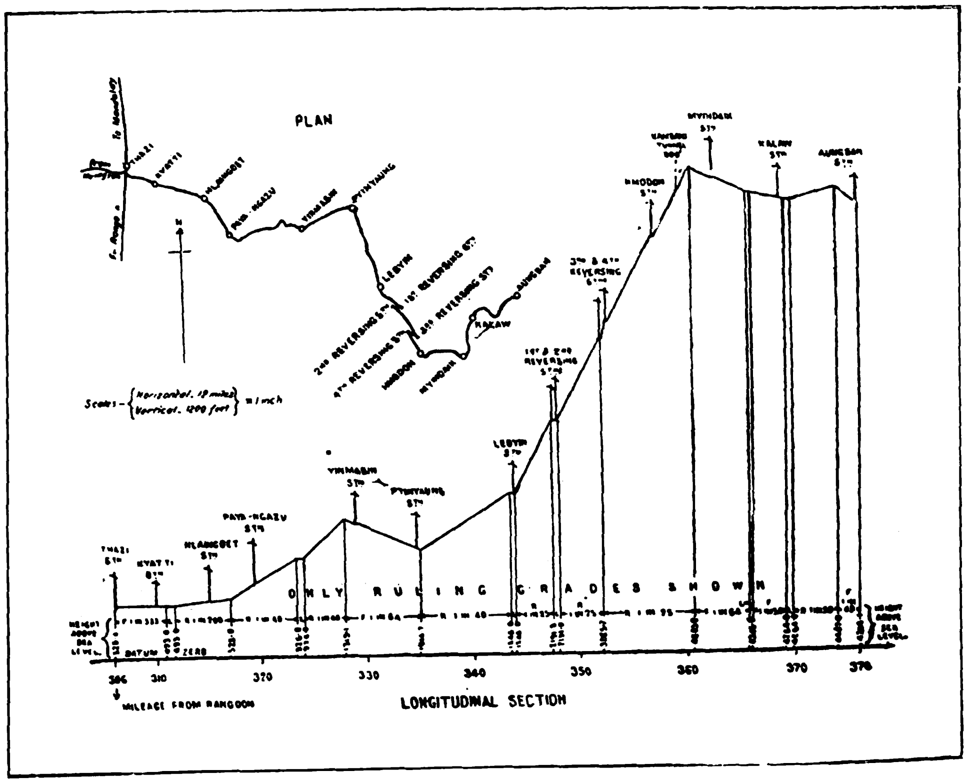
The projected line was to start from Nyaungyan, about 299 miles from Rangoon, and terminate at Sanghai, which is 7 miles short of Taungyi by the cart road. It would be 112.2 miles in length and was estimated to cost, on the 2' 6" gauge, Rs. 6,857,667, being at the rate of Rs. 61,110 per mile.

As a result of further investigation later it was determined that the railway should be constructed of the same gauge as the parent line, *viz.*, metre, the junction being at Thazi.

Altogether 70.25 miles have now been opened for passenger traffic, of which 16.05 miles were opened in June, 1912, 6.95 miles in August, 1913, 40.46 miles in February, 1915, and the last section 7.19 miles from Kalaw to Aungban on 19th March, 1915. The through mileage from Rangoon of the section now open is 305.91 to 375.99 miles, and it is now proposed to extend the line on to Heho, a distance of 19.31 miles.

The project, as noted above, was undertaken in order to assist in developing the Southern Shan States, and in particular to serve the trade of the fertile valley of the Inle Lake which lies some 33 miles beyond the present terminus of the Railway. It will also facilitate the civil administration of the States.

At Thazi the climate is not unlike that of the Punjab, and the line, running east, commences at the fifteenth mile to climb into a tangled mass of forest-clad hills and precipitous river gorges, until at mile 63, Kalaw is reached. Here the railway enters a country of rounded grassy hills and pine woods where the climate is pleasant and temperate.




Profile and Plan of Southern Shan States Railway

It is expected that Kalaw will gradually develop into a popular health resort for Lower Burma, for which it possesses many natural and physical advantages.

The profile and plan of the line (skeleton diagrams of which are given) indicate the natural difficulties which, together with the scarcity of any kind of labour and the unhealthy climate of the foot hills, have had to be overcome by the engineering staff in constructing the line.

The cost of extending the line from Aungban to Heho has been estimated at about Rs. 19 lakhs; but the further extension, Yongwhe from Heho, only another 14 miles, would, owing to the difficult nature of the country, probably cost as much as Rs. 40 lakhs, or an average of nearly Rs. 3 lakhs per mile.

# PHILIPPINE GOVERNMENT'S PROPOSED PURCHASE OF THE MANILA RAILROAD

Latest advices from Manila are that the plan for the purchase of the Manila Railroad Companies' lines, has been approved by the Commission and has been introduced into the assembly where it was referred to the Committees on Appropriations, Railroads and Franchises. The measure, which consists of a short introductory clause, followed by the full text of the memorandum agreement, is titled as follows:

"A bill ratifying the memorandum agreement of the 18th of December, 1915, between the governor general and Horace L. Higgins in representation of the Manila Railroad company, and the Manila Railroad company (1906), Ltd., appropriating funds for the carrying out of the contract, conferring upon the governor general the right to vote the stock acquired by virtue of the contract, and for other purpose."

In the memorandum agreement reference is made first to the government's having guaranteed four per cent interest on the bonds of the new southern lines of the company.

Next reference is made to the loans of the government to the company to enable it to continue the construction of those lines, the company being unable to secure capital elsewhere and being confronted with stoppage of its construction work. The government's loan, from the gold standard fund, now amounts to P5,637,000.

The funded indebtedness of the railroad company is then discussed. The manner in which the government is to assume the company's indebtedness provides:

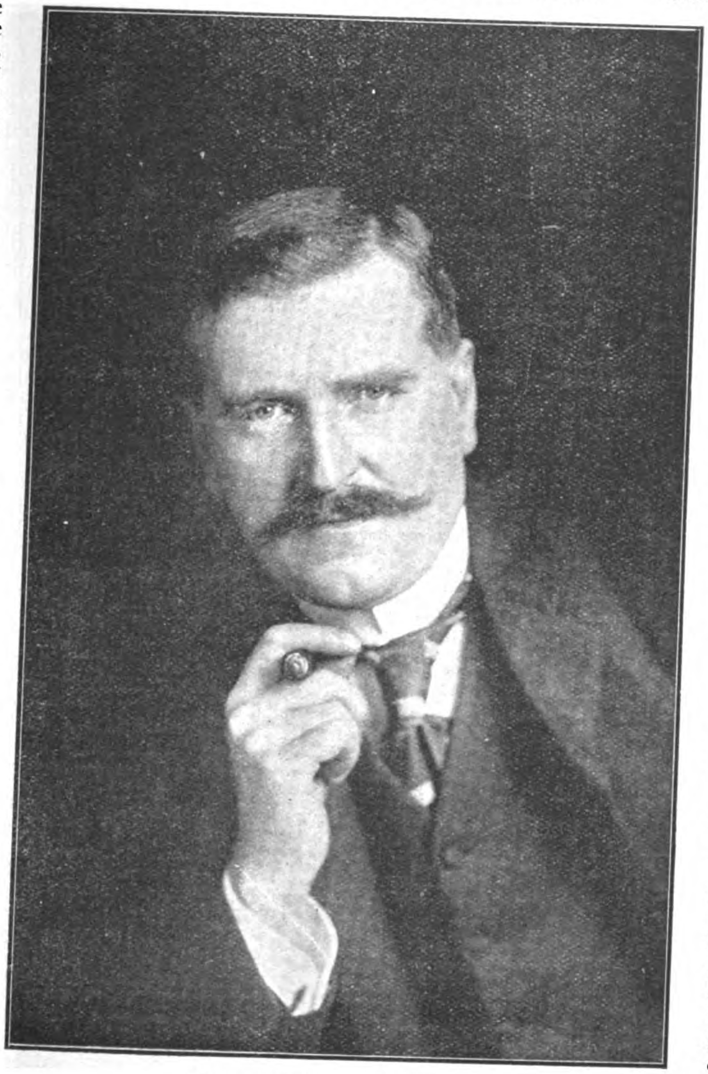
That the four per cent bonds whose interest is guaranteed by the government, and of which $10,575,000 have been issued, shall be extended for twenty years, that is to May, 1959, such extension applying also to the government's guarantee of 4 per cent. After being taken over by the government the company will establish a sinking fund to meet its bond issue obligations, the first three annual instalments of such payment, pending the 20 year extension, being P500,000 each, provision being made for the consent of the bondholders.

The government agrees to lend to the railroad company an amount sufficient to maintain the sinking fund at the required figure and it is stipulated that such portion of the sinking fund as is deposited by the railroad company shall be invested only in the purchase of the 4 per cent bonds, which, on purchase, shall be cancelled. Provision is made, on maturity of the 4 per cent bonds, for the sinking fund to be applied to taking up such of the bonds as have not been purchased and cancelled.

It is provided that the Government purchase all the capital stock of the company now outstanding, amounting to P8,000,000. Of this amount 50 per cent is to be paid on the date of sale and the balance within 18 months thereafter. It is set forth that the railroad company has advanced P9,730,650 to the construction company. Provision is made for the adjustment of this and all other accounts and the obliteration of the construction company.

The railroad company is required to refund at par and cancel all the outstanding $4,330,000 first mortgage 6 per cent bonds and $7,716,000 second mortgage 7 per cent bonds and issue in lieu thereof new bonds maturing at the expiration of 40 years from date of sale bearing interest at 5 per cent instead of 6 and 7 per cent. The issue of new 5 per cent bonds shall not exceed in the aggregate the principal amount of $13,336,000. The net balance due the construction company to be paid by bonds of the railroad company.

Provision is made for the government, on acquiring a majority of the stock of the railroad company by the first payment of P4,000,000, having the right to change the personnel of the board of directors and to nominate new directors and officers of the railroad company, including the general manager and counsel.



PRESIDENT HORACE L. HIGGINS

The agreement is signed by Governor General Harrison and acting Executive Secretary Ferguson, representing the government, and by President Horace L. Higgins and P. A. Alexander, representing the company.

### Harrison's Statement

In his lengthy statement to the legislature in support of the proposed transaction Governor General Harrison sets forth that the price finally agreed upon was eight million pesos or approximately 70 per cent of the face value of the stock of the company, which, of course, does not include the funded indebtedness and other liabilities, the total running up to P70,000,000 and over.

After setting forth the terms of the agreement, the chief executive then declares that public ownership is desirable because the railroad is a public highway and "should be operated for the benefit of those served thereby rather than for the financial benefit of private stockholders." Continuing, he says: "A railroad is, in the very nature of things, a monopoly, and experience throughout the world affords convincing arguments in favor of the ownership and control of such monopoly by the people themselves." Looked at from the standpoint of the Filipino people and their future, the perpetual franchise granted the company is declared unwise, and the advantages of abrogating it set forth.

Reference is then made to railroads owned by the government in other countries, the example and experience of Japan, the Dutch East Indies, and British India being especially dwelt upon.

Next is brought up the controversies and friction the government has had with the representatives of the company; the lack of capital, due to the war, tying up further construction work; and the manner in which the government will finance the deal out of its own funds. The governor general then points to a certain saving resulting from the purchase price, as follows: "In consideration of the price of eight million pesos agreed upon for the P11,567,000 par value of outstanding capital stock, the construction company, which is the owner of all of the outstanding 6 and 7 per cent first and second mortgage bonds of the Northern Lines, has agreed to a reduction in the rate of interest upon such bonds to 5 per cent, which will result in a net interest saving of P395,240 to the Manila Railroad Company. It is this saving which gives in my opinion value to the outstanding stock of the Manila Railroad Company."

Speaking of the annual deficits the government had to make good under its guarantee of four per cent interest on the bonds of the southern lines, the governor general states that in 1910 the amount was approximately P19,000; in 1914 it was P51,631.26; and in 1915 the estimated deficit on October 31 was P82,900. In addition the company suffered a loss on its northern lines which might amount to about P100,000, which had been financed by a temporary release of certain of the company's bonds held by the government.

Moreover, until the completion of the present construction plans of the company each year would impose greater interest obligation inasmuch as the new road had been built in sections and these could not be expected to pay for themselves until they had been linked up.

In conclusion the governor general was not very optimistic in regard to the government's management of the road proving a financial success, but he thought this was of less importance to the people of the Philippine islands "than that the road should be operated in such a way as to develop as quickly as possible and to the utmost the country served and the expansion of commerce in the Philippines." Still further, in a large sense, the very acquisition of the railroad system would remove the railroad from politics.

The proposal has met with opposition from the American press in the Islands and also

from a considerable portion of the native press. The objection is not the question of price, but that it is unnecessary, and that the money to be withdrawn from the sinking funds now lying dormant could be better expended on such important matters as irrigation, agricultural development, road and bridge building, and sugar centrals. "*La Democracia*," one of the leading Filipino papers, frankly confesses that the proposed purchase of the railroad comes as a surprise and that, on investigating the cause of the deal, it has discovered that the English companies operating in the transaction are desirous of disposing of their property as soon as possible so as to employ their funds for war purposes. The journal reminds the government of the inadvisability of undertaking this project at present, as the country is in a very precarious situation economically, while government indebtedness will annually increase and so add to the great burden the country is carrying. The American press in the Islands also considers the purchase of the railway as all-advised and unnecessary. The *Bulletin* closes a long editorial as follows:

"Some day the islands are going to need all their credit in order to borrow money on their bonds to acquire these things, only to find that credit has been exhausted to purchase a railroad, which the country needs about as much as a cat needs two tails. The country will have the railroad but will be unable to trade it for real needs. The only advantage that will accrue to the people will be the privilege of raising several additional millions of pesos in taxes to pay the interest on the indebtedness incurred by the purchase.

"The most essential factor in the future as well as present prosperity of the islands is the coming of capital for the development of its natural resources, industries, and public utilities. The largest investment of capital in the islands up to the present is that invested by the Manila railway. Is the government to announce now to the financial world that the government is to be the means of sending this capital out of the country? Will such action encourage other capital to enter the country?

"We do not know what political benefit is o be derived by the purchase of this railroad. One thing is certain; there will be no economic benefit derived from it. The only expert opinion available of the value of the road is that of the government itself. In a decision by the public utilities board, seven months ago, that body said: That the company's income is not sufficient to provide adequately for the protection of its property devoted to public use, to pay its fixed charges, and to pay a reasonable return upon its investment, is shown by the following comparative statement of its income account for all lines for the years 1910 to 1914, inclusive. Is the credit of the country to be mortgaged for generations, in order that the government may acquire a property of this kind? Will government ownership and management get better result than experienced and competent railroad officials have accomplished? If they are then the people should have some knowledge of why and how it is to be done."

## NANKING TRADE CONDITIONS

According to a Japanese Foreign Office report business in Nanking has not suffered from the effect of the war situation in the south-west of China. But the city is in a state of depression as usual owing to the close of the year. Owing to the European war prices continue to rise. As for Japanese goods, the Chinese merchants are ordering them in view of future sales, so that the number of transactions is rather large. The banks are cautious and the money market is generally depressed. At the same time the issue of bank notes by the National Bank and the Bank of Communications has increased considerably, which is a notable feature. The amount of circulation cannot be known exactly; but it is about 23,000,000 *yuan*, of which about 700,000 *yuan* was issued recently.

# NATIVE DYES OF CHINA

A writer in the *British Chamber of Commerce Journal* (Shanghai) says:

"The subject of dyes is occupying so much attention at present that the following notes on native dyes may be of interest to readers of the Journal. Classification according to colours has been adopted as the easiest method of distinguishing the dyes. These colours are—blue, green, yellow, red, black, and brown:—

"BLUE.—The most common dye employed in China is blue, produced from the 'indigo' plant. There are in reality four plants cultivated for this purpose, viz.; (1) Strobilanthes flaccidifolius, found in central and western China; (2) Indigofera tinctoria, a leguminous shrub cultivated in the south and in India; (3) Isatis tinctoria, resembling the woad of the ancient Britons, and (4) Polygonum tinctorium, the dyers' knot weed of Manchuria, Hupeh, etc. Of these four the indigofera appears to be the most widespread. The principal indigo-producing districts are—or were, for cultivation on a large scale has owing to the competition of foreign dye-stuffs, died out in some provinces—the Sungari basin in Manchuria, Anhui province near the Yangtze, some districts in Kiangsi and Hupeh, central Chekiang, and, in the South, more especially on the West River in Kwangsi. It is, however, grown for local use in practically every province, and is a staple article of Hainan Island.

"In some parts of China three crops of indigo leaves are gathered yearly—in July, August, and September. One *mow* of land yields over 700 catties of manufactured dye if the crop is good. The shoots are steeped in concrete pits for several days in cold water, when they are removed, leaving a greenish water, which, after being well stirred and exposed to the air, becomes darker. Slaked lime is placed in the water to precipitate the indigo, and, when the water is drained off, the dye is found deposited at the bottom of the pit.

"The history of the indigo trade is interesting, as revealed in Consular and Customs reports. As far back as 1878 it was predicted that native dyes, then cheap would be supplanted by cheaper and more dazzling substitutes, the people having a taste for bright colours which they were only prevented from indulging by the incident of cost. Large quantities of indigo then came down in carts from Central Manchuria to the coast; Hankow exported a great deal, and Wuhu imported 40,000 to 50,000 piculs yearly. In the south the exportation from Kwangsi reached high figures, between 40,000 and 70,000 piculs being the annual shipments through Pakhoi and Wuchow also sending many thousands of piculs down the West River to the dye-works at Fatshan and other towns in the neighbourhood.

"The exportation to foreign countries never reached high figures, as the dry article as required in Europe is not produced. In the early seventies a Commission was sent to Hankow to investigate Chinese indigo, but interest died out, as the colour was found to be too dull to compete with the more brilliant arsenical dyes used at home. It is in the middle eighties that the first reports are heard of the competition of foreign dyes. In 1886 the Consular Report for Chinkiang says that foreign dyes are displacing native for dyeing silk and the finer kinds of cloth. They cost £6 per case of 250 bottles, while only one picul of indigo could be bought for the same sum. The foreign dyes can also dye a greater number of pieces than the native, but the Chinese dyes stand washing better, and do not fade. Dealers in native dyes were finding that their business was becoming confined more and more to coarse foreign cloth and to native cloth. Aniline dyes in bottles first appeared at Hankow in 1882, and made rapid strides; they first appear as a 'principal article' in the Customs Returns in 1886, when Hk. Tls. 700,000 worth were imported to China. The million tael figure was reached in 1893, by which time reports were general that native dyes were being displaced. However, indigo shared in the great development of trade—internal and foreign—which was the feature of Chinese industrial history during the years between the China-Japan War and the Boxer Rising. The development of steamship traffic and the first stirrings of the awakening of the country from its long quiescence caused the opening of new avenues for native trade, which showed a marvellous capacity for expansion. Thus we find Swatow exporting 93,000 piculs of indigo in 1898, and Pakhoi which twenty years before had only produced 15,000 piculs, in 1899 sent away over 84,000.

"But the trade had reached its highwater mark, and from the end of the century there has been a continual decline in the production of indigo, due to the competition of aniline dyes and synthetic indigo from Germany and Belgium. This latter article first appears in the Customs Returns in 1902, when 3,265 piculs worth Hk. Tls. 131,224 were imported to China. Three years later, such was the popularity of the dye, and so great the energy with which its sale was pushed, this figure had increased, tenfold, and in 1913 the figures were Piculs 314,268 and Tls. 9,628,670—a truly remarkable development! In the same period aniline dyes ran an almost parallel career. In 1902 the value of imports was Tls. 2,180,000 and in 1913 Tls. 5,352,000. The struggle between this German monopoly and native indigo and other dyes was over.

"This result had been predicted time and again by British Consuls. In 1901 it was pointed out in the Report on the Trade of China that native indigo, would, as in India, have to enter upon a severe struggle, of which the issue could not be in doubt. In 1908 it was stated that vegetable indigo was being gradually superseded, the same complaint coming from Shantung in the north and from Pakhoi in the south. Artificial indigo was not at first much used for foreign shirtings, as it washes out, but for native cloth, but on the other hand native dyers found that not only was it cheaper, but it had the quality of imparting a clear blue colour, with faint sheen—a colour and appearance which was unobtainable with their own dyes. It was said (in 1911) to be extensively used in Hunan, and in Manchuria. Shantung and Honan were supplied with aniline dyes and artificial indigo from Tsingtau. In the south native dyers still preferred the liquid indigo on account of its imparting a more uniform colour to the cloth.

"Since the outbreak of the war Chinese dyers have felt the want of foreign dyes severely, and indigo cultivation has revived, but in the near future the importation will be renewed. The British Consular Report for Shanghai, 1914, expresses the hope that the new British dyes will be placed on the China market, and that an efficient distributing agency will be arranged, for the trade offers very fine prospects. In this hope all who have the interest of the Empire at heart will agree. It is trusted that the present imperfect sketch will stimulate interest in this question. Now that the monopoly established by the Germans in the production of the dyes no longer exists, the example of their pushfulness in this trade, as illustrated by the figures given above, may well be followed.

"RED.—The best known red dye in China is safflower—carthamus tinctorius—*hung hua*. The seed is said to have been originally brought to China by the famous traveller and general Chang Chien from Turkestan, and the

chief centre of production is central Szechuan, though it is also cultivated near Ichang and in N.W. Anhui. A generation ago the export from Hankow amounted to 6,000 piculs, but at present the industry is practically extinct, the dye being used now only for fine silk. The red worsted cord, for which Wuhu was famous all over the Empire, was dyed with Szechuan safflower.

"The balsam—impatiens balsamina, or *chih chia hua* (finger-nail flower) is used in combination with alum as a finger-nail dye, called *hai-na*, apparently in imitation of the Arabic henna. Other plants used for the same purpose are anchusia tinctoria in the north and lawsonia alba in the south, the latter produces the familiar rouge employed by Chinese ladies. Madder—rubia cordifolia, the Chinese *ch'ien ts'ao*, is a creeper whose stems and roots are employed to dye a deep red, whence its name *[illegible]-fei ts'ao*. A purple dye is extracted from the bark of lithospermun erythrorhizon—*tzu ts'ao*, now used chiefly as a drug in the northern and central provinces. The colouring matter is brightest if the plant is dug up in spring. Formerly 4,000 piculs of this dye were exported from Chefoo yearly, and sent to the south. Sappan-wood dye from Malaysia and the Philippines is an important article of import.

"YELLOW.—Turmeric is the product of longa or *yun chi*, found in Szechuan and Tibet and also on the delta of the West River of Kwangtung and in Formosa, whence it is imported to China. The powdered roots are used for dyeing cotton cloth, especially women's clothes. The export of this dye from Chungking reached the extraordinarily high figure of 60,000 piculs in 1912, apparently owing to the failure of the Indian crop. The normal exportation is very much lower. The plant is still extensively cultivated on the Lower Min in Szechuan.

"A yellow dye for silks and cottons is obtained from the buds of sophors japonica—*huai shu*—a familiar tree widely scattered over China. The koelreuteria, also named *huai*, is used for the same purpose. The gardenia florida produces a yellow dye used for staining woods.

"GREEN.—Green dyes are obtained from the leaves of rhamnus tinctorius and other species of buckthorn. The bark of two varieties is boiled together in Chekiang to produce the dye, which is very expensive, and so sparingly used—mostly for dyeing grasscloth. It is a very permanent colour, and constitutes the sap-green of water colour painters. The pigment is named *lu-chiao*. It has been almost totally displaced by aniline dyes, and the same fate has overtaken the dye obtained from a species of polygonum in Szechuan.

"BLACK.—The 'nutgalls' produced on the rhus javanica—the *fu-yang* tree—are extensively employed for dyeing fabrics—especially silk-black. The cloth must first be dyed blue. This process has been elaborately described by Hosie in his report on Szechuan. Mixed with cochineal and other colouring substances the powder from the galls (Chinese *wupeitzu*, produces grey, brown, and fawn tints. Nutgalls are also largely used in tanning. The history of the export trade in this article is one of continuous upward progress from the time when records were first kept (the early sixties), when only a few thousand piculs were sent abroad each year. In 1876 over 20,000 piculs, at about Tls. 10 each, were shipped, the thirty thousand piculs figure was first reached in 1887. In 1888 the general mourning in Germany stimulated the demand, as nutgalls were needed to make black dyes, and since then the demand has never fallen off. Here again Germany, not despising the "muck-and-truck trade," was ahead. In 1893, 48,000 piculs, worth Tls. 570,000 were exported, and in 1906 58,000 piculs, worth almost a million. The record year was 1909, with 66,337 piculs, and the price, at Customs valuation, is now from Tls. 17 to 20. As the Occidental demand is greater than the supply, this trade is worth developing by British merchants, who appear to have allowed it to fall into other hands.

"BROWN.—The dye yam (*shu liang*) or false gambier yields a dark brown dye and tanning agent, commonly used in Yunnan and exported thence to Tongking. It is also widely grown in Kwangsi, and shipped to Kwangtung from Wuchow. It is used for native and foreign cottons, grasscloth and silk, and furnishes the lustrous dark-brown waterproof-looking colour so much affected by Chinese in summer. If a darker colour is required alum and nutgalls are added and in Canton the juice of green or unripe persimmons is frequently applied as a varnish to the outside of the cloth. It is waterproof, and perspiration does not show upon it, to remove dirt only superficial washing is necessary.

"From the artistic point of view the revival of the beautiful vegetable dyes is to be welcomed, as the substitution of chemical dyes has led to a sad degeneration of taste. Many years ago Wardle, the silk expert, observed with regret how the love of the modern gaudy European dyes had seriously affected the products of the native loom in India. This applies, however, to silk and grasscloth rather than to coarse cotton goods, and the principal question at issue for commercial men is the displacement of German dyes by British."

"*Note.*—The naturalist E. H. Wilson states that the galls produced on a less common species—rhus potaninii and named *ch'i-pei-tzu*, which are used in Chinese medicine, possess possibilities worthy of investigation in connection with the quest for an indelible black ink.

"As a dye for silk the cupules of two very common oaks—the *hua-si* and *hua-k'o-li*, are employed. Used with sulphate of iron a dye is produced very similar to that extracted from the vallonea oak of Asia Minor. In dyeing silk with this dye the fabric does not require to be dyed blue first. This dye is used in Manchuria, Hupeh, and the West generally. In the country districts of Szechuan local use is made of the leaves of the walnut, alder, tallow-tree, etc., for the same purpose, and soot from pine wood, mixed with millet spirit is also used."

## RUSSIA'S FORESTS

Russia now occupies first place among the nations of the world in the extent of its timber resources, the value and quality of two-thirds of which are practically unknown. The total area of the empire is about one-seventh of the land surface of the globe, and 39% of it is under forests. Those in European Russia cover an area of 474,000,000 acres; in Finland, 50,000,000 acres; in Poland, 6,700,000 acres and in the Caucasus, 18,600,000 acres—a total of 549,300,000 acres, exclusive of Siberia. In the Ural Provinces forests cover 70 per cent. of the area, in the northern provinces 68 per cent. and in the four lake provinces 57 per cent. It is estimated that in western Siberia alone there are 405,000,000 acres of virgin forests, and eastern Siberia, while not so richly endowed, has sufficient timber to supply the world's demand for years to come.

The government owns 285,598,941 acres of forest land in European Russia, 12,826,387 acres in the Caucasus, 300,519,435 acres in Asiatic Russia, and 288,742,000 acres in the Amur region, a total of 947,686,763 acres. Twenty-three per cent of the forest land belonged to landed proprietors and 9 per cent to the peasantry in 1910.

The principal timber lands of eastern Siberia are in the valleys of the Amur River system, which cover an area of about 2,000,000 square miles. Of this area, only about 400,000 miles is considered available for timbering, but according to local calculations, allowing 45 merchantable trees to the acre, this would give some 11,520,000,000 trees. As the time required for these trees to mature is placed at 100 years, 115,200,000 trees could be cut per annum without diminishing the forests, with proper reforestation methods. The Russian forestry department places the total timber land in Siberia at 810,000,000 acres, of which two-thirds can be successfully placed on the market.

The disturbed conditions of Russia, generally speaking, have not, however, stopped the work of developing the local forests. There are in course of organization two strong Russian companies, which are anticipating going heavily into the export of timber abroad. It is still too early to state anything definitely about them, but it looks as if one of them at least will begin this Winter. In two or three years these companies promise to have a visible effect upon timber industries and their influence will soon be felt in the Pacific timber market.

It is quite possible that these companies will not only apply to American manufacturers for the equipment of their factories, but even invite American specialists for the organization of the whole business. The plan includes not only large sawmills, but also box factories, pulp, matches and dry distillation of wood.

## REFORESTATION IN JAPAN

The forest area of Japan is decreasing at the rate of 1,000,000 acres a year. This area is being cut away partly for timber and lumber and for firewood, and partly to make the land available for the cultivation of rice.

The total of forest lands in Japan for each year from 1909 to 1913, inclusive, was: 1909, 54,032,565 acres; 1910, 52,048,464; 1911, 47,-038,230; 1912, 46,989,298; 1913, 46,231,458.

During the period for which statistics are given the forest area decreased by approximately 1,600,000 acres a year on an average. Estimating the annual decrease at this figure the forests of Japan at the end of 1914 covered about 45,000,000 acres.

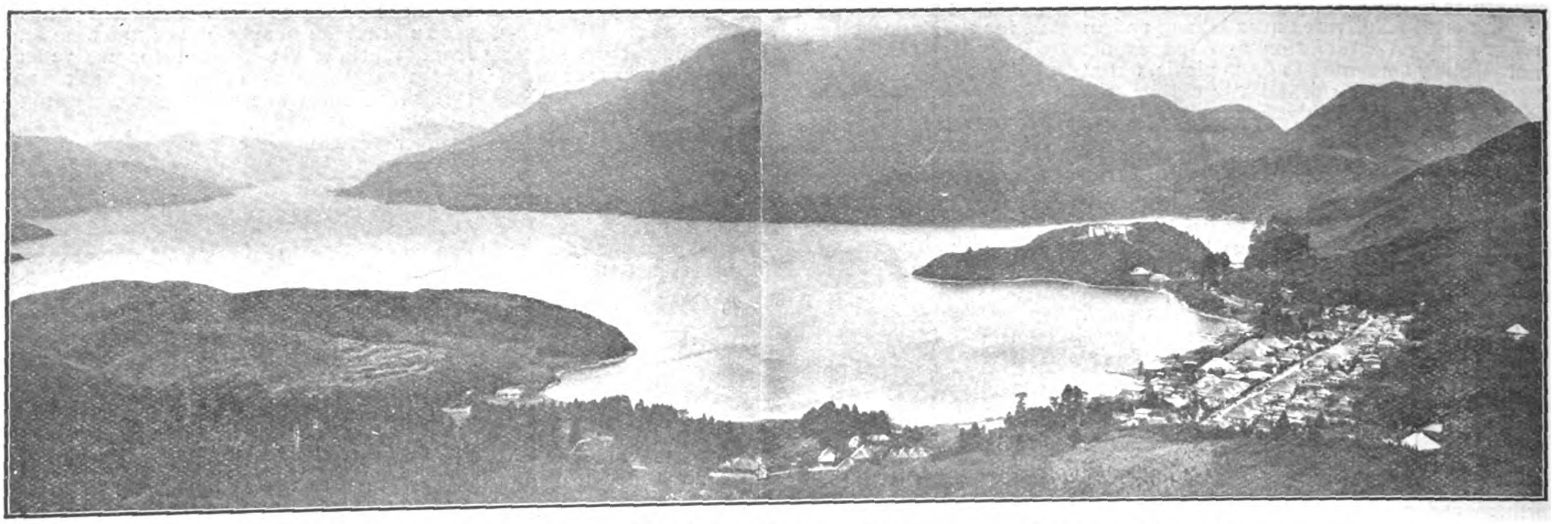
The value of lumber and firewood for these years were in 1000's of Gold dollars.

| Years | Lumber | firewood | Total |
|---|---|---|---|
| 1908-09 ........ | $23,810 | $14,223 | $38,034 |
| 1909-10 ........ | 22,834 | 15,104 | 37,939 |
| 1910-11 ........ | 21,293 | 12,928 | 35,222 |
| 1911-12 ........ | 22,436 | 14,753 | 37,189 |
| 1912-13 ........ | 24,045 | 15,222 | 39,268 |

The sale of timber from government-owned forests is a source of considerable revenue to the state. In 1914 the budget for the fiscal year 1913-14 estimated this revenue at $5,359,-845, in which are included the receipts from the sale of state-owned forest lands. The expenditures for upkeep, supervision and reforestation were estimated at $2,326,811, giving the government a profit of $3,033,034.

## BRITISH INDIA MINERAL OUTPUT

According to the report of the Chief Inspector of Mines in India the output of coal in that country last year was 15,727,631 tons, an increase of 241,313 tons over the output of 1913. Of the total output 95.85 per cent. came from Bihar and Bengal. For the first time since 1910 there was a decrease in the output of mica, 38,189 cwts. having been raised. The output of manganese was 555,672 tons. This was a decrease of 81,719 tons. The gold output of the previous year was nearly doubled, being 19,873 ozs., an increase of 80.35 per cent. The output of copper was 4,400 tons; that of wolfram, 31,526 cwt., and bauxite, 9,280 cwts.



Lake Ashi at Hakone in the Hot Spring District Reached by the Japanese Railways

# IMPERIAL GOVERNMENT RAILWAYS OF JAPAN

[General Resume of Annual Report for the Year Ending March 31st, 1914, and Statistical Report to March 31st, 1915]

The following report on the general working of the Imperial Government Railways of Japan, private and light railways and tramways in Japan proper and the South Manchuria Railway for the year ending March 31st, 1914, was submitted to H.E. Count Okuma, Minister President of State, by President Mitsugu Sengoku of the I. G. Railways of Japan. The total mileage of railways open to traffic at the end of the year under review was 7,231 miles, of which 5,473 miles were represented by the Imperial Government Railways, 1,061 miles by private and light railways, 697 miles by the South Manchuria Railway. The train mileage totalled 67,600,502 miles, the vehicle mileage 1,214,408,852 miles, the number of passengers carried 211,251,883 and the weight of goods hauled 47,063,324 tons, while the number of passengers carried one mile aggregated 4,227,712,134 and the weight of goods hauled one mile 4,223,855,803 tons. The total earnings derived from operation were 138,577,754 yen.

The mileage of tramways open to traffic aggregated 1,139 miles (comprising 565 miles of the electric, 203 miles of the steam-worked, 30 miles of the petroleum motor and 270 miles of the horse-drawn and 71 miles of the *rikisha* tramways). The vehicle mileage totalled 114,192,021 miles, the number of passengers carried being 576,229,774 and the weight of goods hauled 1,188,269 tons. The earnings derived from operation were 24,721,171 yen.

The returns for the State lines are as follows:—

### Traffic Results

The average mileage of railways open to traffic during the year under review was 5,298 miles for passenger traffic and 5,344.3 miles for goods traffic, an increase over the preceding year of 213.8 miles in the former and 218.2 miles in the latter. The train mileage aggregated 57,402,803 miles, the vehicle mileage 1,082,208,212 miles, being 3,408,871 miles and 93,952,225 miles, respectively, more than in the preceding year. The number of passengers carried totalled 167,773,143 and the weight of goods moved 36,348,362 tons, an increase of 7,061,406 in the former and 3,811,017 tons in the latter as compared with the preceding year. The total number of passengers carried one mile were 3,690,964,619 and the aggregate weight of goods moved one mile 3,053,852,638 tons, being 64,648,120 and 362,388,464 tons more than the respective figures for the preceding year.

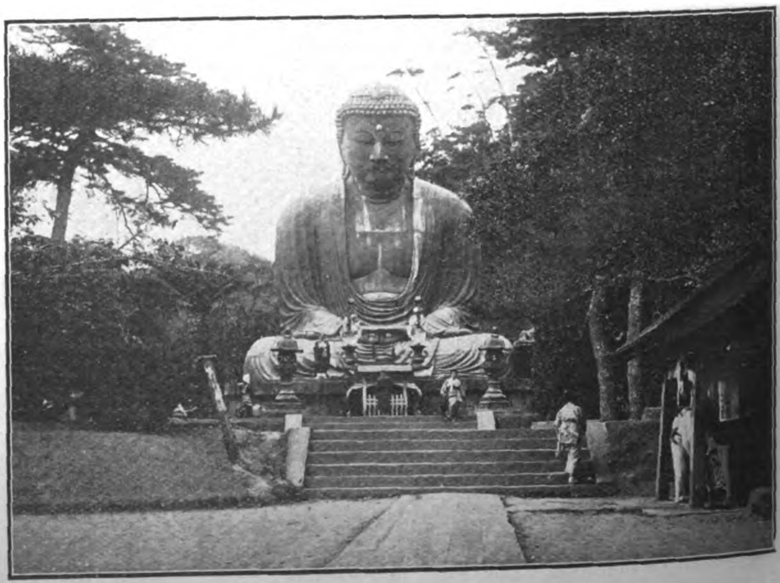
### Passenger Traffic

The earnings from operation were 55,975,342 yen for the coaching service, 53,368,932 yen for the goods, 2,240,842 yen for the shipping and 111,585,116 yen for the total, being an increase over the preceding year's figures of 5,760,592 yen in the total.

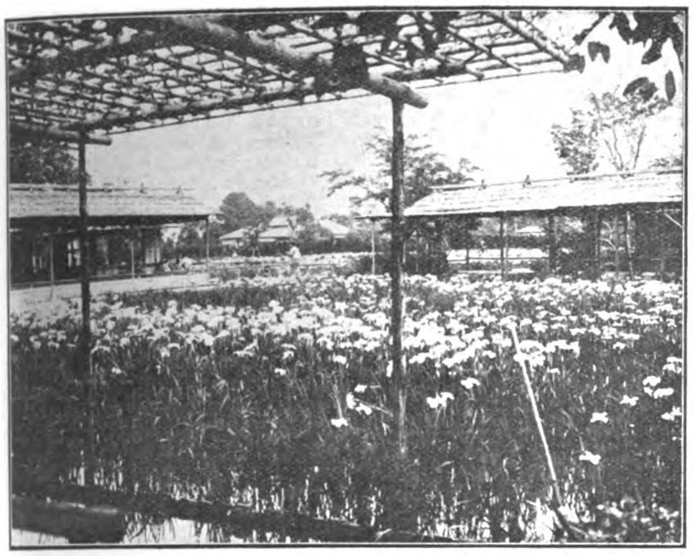
In reviewing the general results of traffic, it is noted that the depressing influence of the national mourning was generally manifest everywhere throughout the first half year, though, it is true, during the spring months a fair volume of passenger traffic was returned, notably in those districts served by the Hokuroku line, the last section of which was newly opened to traffic, thus ushering in a new era in the through route with the Shin-Etsu line.

The Colonial Exhibition held at Osaka in May and the celebration of the anniversary of the demise of the late Emperor in July attracted a substantial number of visitors to the seats of the respective functions. With the expiry of the period of the national mourning, which happened at the time of

Famous Torii at Itsuku Island near Miyajima



Colossal Buddha at Kamakura



Iris Garden Near Tokyo

Viewing the Chrysanthemum Garden

exodus of people to summer resorts, a general quickening of the passenger service began to be noticed, the returns of August and September being the heaviest on record for the year under review. In autumn the industrial fairs held at Yokohama and Toyama and the launching ceremony of the battle-cruiser "Haruna" at Kobe served an occasion of enlivening business, while the returns of holiday-makers going on autumnal picnics, such as maple-viewing and mushroom-gathering, compared well with the figures of the average year. The natural disasters in Akita and Kagoshima prefectures deranged train service to more or less extent, but on the whole the year closed with a fair prospect of business owing to the brisk transport of party passengers and visitors to the Taisho Exhibition held at Tokyo.

### Goods Traffic

As compared with passenger traffic, goods business kept up a very satisfactory show throughout the year. The prosperous conditions noticed in the closing months of the preceding year were well maintained down to summer, foreign rice, manures, cotton yarn and tissue and other commodities returning, one and all, an unusually heavy booking. Owing to the crop failure the business was seriously affected in the Hokkaido and the north-eastern districts, but what was lost in this direction was partially made good by the traffic in cereals, manures, fuels, charcoals and other goods which were immensely carried from and to the above-mentioned districts under 50 per cent. discount rates specially adopted for the benefit of the famine-stricken people. Toward the end of the fiscal year, the delivery of articles of summer consumption began, as is annually the case, to show signs of activity.

### Traffic Arrangements

To give a list of the more important arrangements made for the service during the year under review, on April 20th the Awa Kyodo Kisen Steamshipping Co.'s railway line, a distance of 6.9 miles, and on October 13th the Ashio Railway Co.'s Shimoshinden-Ashio line, 25.7 miles, were leased and brought under the direct working of the Imperial Government Railways.

On November 1st a revision was effected in the Rules of Railway Transportation, whereby the new provision was made for allowing dogs and other pet animals to be taken into carriages, while a measure was devised to prevent fraudulent attempts to misrepresent consignment as to designation and amount.

On October 1st, first class carriages were withdrawn from a portion of local train service, the second and third class carriages being substituted in their place.

As a device of fostering the export of cotton yarn and tissue bound for Manchuria, which began to grow in amount of recent years, a reduction of freight thereon was put into force on August 10th in league with the Chosen Railway.

### Joint Traffic

An extension was given to the scope covered by the oversea through traffic arrangements. The direct passenger and luggage service with the leading points in Western Europe for conveyance of passengers was inaugurated on June 10th, and on October 1st a similar service was opened with Peking and Tientsin on the Peking-Mudken line of the Chinese Government Railways.

At home, also, joint traffic arrangements were newly concluded with 16 railways and 3 steamshipping concerns.

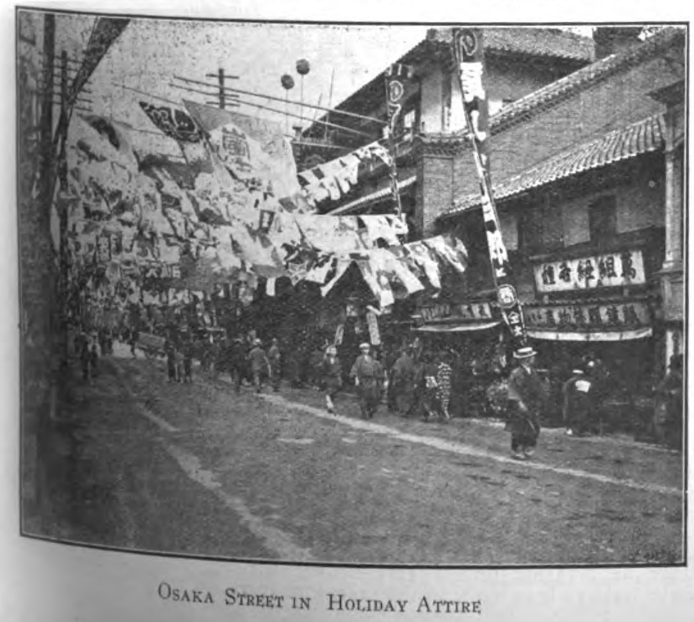
During the year working expenses amounted to 14,979,459 yen, an increase of 877,112 yen over the preceding year.

### Shipping

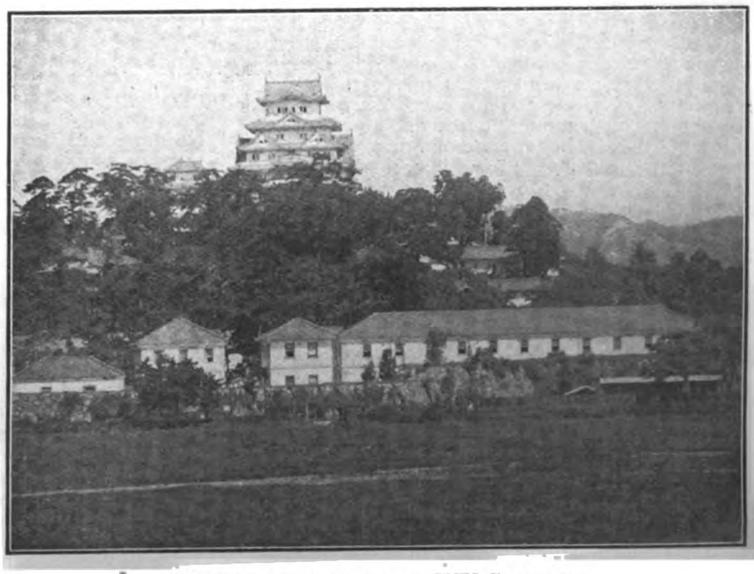
The average length of lines worked for steamer service in operation during the year under review was 218.3 nautical miles. The number of steamers in commission at the end of the year was 35 representing a gross tonnage of 19,640 tons of which 4 vessels with a gross tonnage of 4,233 tons were chartered. The trips made during the year numbered 36,473. The expenses incurred by the shipping service during the year amounted to 2,379,085 yen, being 761,191 yen more than in the preceding year.

### Locomotive Working

During the year under review locomotive mileage totalled 68,744,136 miles (inclusive of the figures of steam motor cars), vehicle



Osaka Street in Holiday Attire



Himeji Castle Built in XIV Century

mileage 1,212,827,176 miles, the amount of coal consumed for running purposes 2,910,164,152 kin (inclusive of 4,105,720 kin of petroleum dregs as converted at 1 sho of oil=5.4 kin) representing 7,702,947 yen in value, while the amount of oil consumed aggregated 16,139 koku representing 348,054 yen in value. Compared with the preceding year's figures, these items show an increase of 3,946,251 miles in locomotive mileage, of 129,119,631 miles in vehicle mileage, of 262,687,087 kin in the amount of coal consumed representing 819,267 yen in value, and of 1,003 koku in the volume of oil consumed representing 49,463 yen in value. As regards the average of the foregoing items per 100 locomotive miles, coal works out to 4,233 kin representing 11.205 yen, an increase of 147 kin or 3.6 per cent. in amount and of .582 yen or 5.5 per cent. in value, and oil runs to .0235 koku representing .508 yen, an increase of .0001 koku or .4 per cent. in amount and an increase of .046 yen or 10 per cent. in value, while the amount of coal per 1000 vehicle miles works out to 2,399 kin representing 6.351 yen, a decrease of 44 kin or 1.8 per cent. in amount and .001 yen in value. The increase in the amount of coal per 100 locomotive miles is accounted for by the increased service of larger type engines, whose enhanced efficiency is demonstrated by the proportional decrease in the coal consumption per 1000 vehicle miles.

Transportation expenses required during the year under review totalled 14,892,049 yen, an increase of 1,487,279 yen as compared with the preceding year.

### Rolling Stock

Rolling stock returns existing at the end of the year under review comprised 2,500 locomotives, 4 Imperial carriages, 6,449 passenger carriages and 42,705 goods wagons, showing an increase over the preceding year of 119 locomotives, 305 passenger carriages and 2,178 goods wagons. During the year various provisions were made for rolling stock and divers improvements carried thereon.

Rolling stock expenses incurred during the year amounted to 7,663,981 yen, being 19,546 yen more than in the preceding year.

### Electricity

The length of electric communication lines extended 2,256 ri, and communication wires 24,151 ri with 2,035 sets of telegraph, 9,439 sets of telephone and 2,818 sets of block apparatus.

The number of messages accepted for transmission at properly equipped 1,486 stations totalled 48,011,977, inclusive of 6,746,526 of public telegrams for which the Railways received 248,656 yen as their share in the service. The power and transformer stations numbered 41 with 61 prime motors installed thereto developing 11,058 h.p., while generators aggregated 63 developing 8,217.54 k.w. and transformers 94 developing 8,383.5 k.w. The total length of power cables measured 116 ri and their wire length 442 ri with 392 motors in use representing 5,123,416 watts. The number of electric trams were 87 with 236 motors for running purposes representing 11,592 h.p. The electric lighting apparatus comprised 51,553 glow lamps developing 3,081,146 watts, 710 arc lamps with 419,019 watts, and 28,588 lamps fitted in carriages. Altogether, 13,455,896 k.w.h. were generated and 6,257,149 k.w.h. transformed.

The mileage travelled by electric trams aggregated 4,952,495 miles with 5,823,941 k.w.h. of current consumed for the running, while the electric locomotive mileage totalled 122,155 miles with the current consumed to the amount of 2,246,847 k.w.h.

### Finance

The revenue account for the year under review gives 117,897,677 yen for revenue, 96,780,934 yen for expenditure and 1,322,428 yen for the balance of the light railway subsidies, leaving a surplus of 19,794,315 yen. After deducting light railway subsidies, rebates and advances, expenses on account of track supervision, surveying, additional expenses and interest charges, there are left 113,477,055 yen for earnings and 54,551,246 yen for expenses, netting a profit of 58,925,809 yen. Compared with the preceding year's figures, the earnings increased by 5,451,417 yen, the expenses by 4,537,599 yen and the profit by 913,818 yen. The percentage of expenses to earnings from operation stands at 48.1 per cent., being an increase of 1.8 per cent.

As regards the reserve fund account, the revenue for the year amounted to 2,609,310 yen, which were carried forward to the next year's account, there being no disbursement charged to the same account during the year.

In the railway stores and workshop account, the profit amounted to 42,998,614 yen and the loss to 43,076,289 yen, leaving a debit balance of 77,675 yen.

The capital consolidated from the inception of the service down to the end of the preceding year aggregated 932,671,280 yen, to which were added 40,420,215 yen for the year under review, bringing the total to 973,091,495 yen of which 219,252,564 yen were represented by special capital and 753,838,931 yen by the loans.

### Railway Stores

The purchase of railway stores totalled 33,081,213 yen including 2,900,375 yen of foreign purchase. Compared with the preceding year, the domestic supplies decreased by 6,106,916 yen, the foreign purchase by 3,175,244 yen and the total by 9,282,160 yen.

### Maintenance Work

In maintenance work numerous provisions were made where necessary throughout the system with a view to maintaining the tracks in efficient condition commensurate with the requirements of increasing traffic. To be particular, the re-sleepering, the repair of roadbeds, the repainting and re-rivetting of iron bridge girders, the replacement of worn-out rails and fastenings as well as the repair of buildings were assiduously attended to, while on the other hand extensive repairs and alterations were carried out to permanent way and buildings in connection with the additional and improvement works. Though no small sum was expended upon emergency and restoration works incidental to hurricanes, torrential rainfall and washaways which involved the lines in more or less damage during the year, the best attention was paid to keeping down expenses as well as to ensuring the satisfactory repairs. Then, the remaining portion of the repair work due to the damage from the floods in the previous years was carried out in several parts of the system.

The amount of expenses debited to the maintenance work during the year was 12,624,686 yen, an increase of 1,272,183 yen over the preceding year.

### Additional Work

In additional work, in pursuance of the policy of securing the facilities adequate to cope with the increasing traffic, particular attention was directed to the increase of siding accommodation, the enlargement and repair of buildings and structures and also the betterment of signalling and other safety appliances while various provisions were made in order to ensure better track and station accommodation.

### Improvement Work

The amount of expenditure debited to the additional work was 1,617,392 yen, an increase of 556,649 yen over the preceding year.

To mention some of the more important items of improvement work carried out during the year under review, the laying of two additional tracks on the Ueno Uguisudani section, North Eastern line, and the duplication work on the Oyama-Utsunomiya section and the Kitasenju-Abiko section, Joban line, were brought to a finish. In the Tokaido line where the rearrangement of tracks and stations had been in hand for some years past, substantial progress was made as regards the laying of two additional tracks between Shimbashi and Hodogaya, while the erection of the new Yokohama station was started, and the remaining portion of the duplication work was finished for the whole line with the completion of the girder erection of the Tenryu bridge. As to the laying of two additional tracks on the Shinagawa-Tabata section, Yamanote line, the duplication work between Shinagawa and Osaki was well forward, while the reclamation and extension at Shinagawa neared completion. In the duplication work on the Ofuna-Yokosuka line taken in hand during the year, the construction of a second line between Zushi and Taura and the erection of a new signal cabin were finished in greater parts. The water-and-rail terminal 'Link' and connected works for the Shimonoseki-Fusan ferry service were also well advanced. In the Kansai line, the duplication work between Osaka and Tamatsukuri was practically completed, while plate-laying was finished for the Kizu and Nara duplication work, the enlargement of Kizu station brought to the verge of completion, and the purchase of land nearly finished for the enlargement of Nara station. In the Kagoshima line the duplication between Orio and Ongagawa and the laying of Shippu branch line, continued from the preceding year, were completed. As regards the improvement work on the Hakodate-Otaru section, Hakodate line, the water-and-rail terminal 'Link' and connected works at Hakodate were commenced and the second reclamation work at Otaru completed in greater parts, while the reclamation and extension work at Temiya was completed as regards the pier and connected works continued from the preceding year. The Muroran reclamation and extension work was finished as regards the reclamation of the first section in the western part and the equipment of the recovered land in the eastern part, the completion of the track-laying on the latter section being now within sight. In the duplication between Oiwake and Yubari, the work on the Momijiyama and Shimizuzawa section made substantial progress. In the Tokyo Street line, the exterior and interior work of the Central Station building, continued from the preceding year, was finished, and the equipment and connected works are now well forward, while good progress was made with the construction of the main building of Karasumori station. The Central Station-Ueno and the Kajicho-Manseibashi section remain practically as they were left at the end of the preceding year.

### New Stations

The new stations erected during the year comprised 3 on each of the Tokaido and the Kagoshima line, 2 on the Central line and one on each of the San-yo, the O-U, the Hakodate, the Kushiro, the Abashiri and the Horonai line, while a new block station was built on each of the Tokaido, the Shin-Etsu, the Hakodate and the Kushiro line.

Permanent way improvement was carried out where necessary throughout the system, including the enlargement of space between track centres, the reduction of gradients and curves, the construction of new bridges and renewal thereof, the replacement of light rails by heavier metals, the strengthening of the tracks with additional sleepers, and improvement of the roadbeds, while steps were taken to replace bridge girders by stronger metals and otherwise to re-inforce the girders.

The amount of expenditure on account of improvement work for the year was 22,591,407 yen, a decrease of 8,426,358 yen against the preceding year.

The length of lines open to traffic during the year was 5,472.7 miles (inclusive of 60.2 miles of the leased lines), being an increase of 255.7 miles over the preceding year, while the length of all tracks extended 8,323 m. 22 ch., an increase of 425 m. 74 ch. over the preceding year. The number of stations in service totalled 1,529, being 88 more than in the preceding year.

## Construction Work

The following is a brief abstract of the more important items of construction work:—

The Izumoimaichi-Oda section, Hamada line, was completed and opened to traffic on November 21st, 1913, as previously arranged, though the work was seriously hampered on account of the loose strata which marked the section at places. As regards the Oda-Hanenishi and the Hanenishi-Asari section, the same line, a slight modification was made in the plan of track and bridging in view of floods and other considerations.

No noteworthy progress was made in the construction of the Tsuwano line which was taken up only in parts.

Except the erection of a few buildings, no substantial start was made with the Obama line.

The remainder work on the Omi-Itoigawa section, Toyama line, was brought to a finish and opened for service on April 1st, 1913, wherewith the opening of service was effected on the whole of the Toyama-Naoetsu line.

In regard to the Kitakata-Tokusawa section, Gan-Etsu line, the construction of the Kamanowaki cantilever bridge over the river Akano was brought to completion without a hitch, and with all equipment completed, the service was opened on the Yamato-Nozawa section on August 1st, 1913. The work on the Tokusawa-Omaki section which was seriously retarded owing to numerous engineering difficulties, remained to be finished as yet, while, with the completion of the Omaki-Satori sub-section, the service was opened on the Maoroshi-Tsukawa section on June 1st, 1913.

The Murakami line was practically completed as regards earthwork and other connected works.

The Koriyama-Miharu section, Taira line, was finished with the exception of a small part of work, and it is expected that it will be ready for operation early next year, the work on the remaining portion being well in hand.

In the Shinjo line, the Kogota-Iwadeyama section was completed and opened to traffic on April 20th, 1913, while the work on the Iwadeyama-Kawatabi section was practically finished and is expected to be available for use early next year. A partial alteration was made in the plan of tunneling work on the Kawatabi-Shinjo section which is regarded as one of the toughest works. The work on the Shinjo-Kiyokawa section, too, met with no small difficulties, but it was proceeded with as previously arranged, the Shinjo-Furukuchi section being opened for service on December 7th, 1913 and the Furukuchi-Kiyokawa section ready to be put into service early next year. Completion was practically effected on the Kiyokawa-Sakata section with the exception of part of the bridging of the river Mogami.

The Ohara-Katsuura section, Boso line, was completed with the equipment of all necessary provisions and opened for service on June 20th, 1913, the through service being thereby opened on the whole of the Boso line.

The Kisarazu-Minato section, Hojo line, made fair progress, while the work on the Minato-Hojo section has not made any substantial progress as yet.

The Oita-Kozaki section, Saiki line, was finished and is expected to be ready for operation early next year. No particular progress was made as yet with the Kozaki-Saiki section owing to the presence of loose strata at places.

The Tokushima line was opened for service on March 25th, 1914, and the Tadotsu-Kannonji section, Tadotsu line, was finished as originally arranged, the service being opened thereon on December 20th, 1913.

In the Sendai line, the Kagoshima-Higashiichiki section was opened for service on October 11th, 1913 and the Higashiichiki-Kushikino section on December 15th, 1913, while the remainder sections are finished and expected to be available for use at the beginning of next year.

## Statistics of the I. J. G. Railways, Comparison of Fiscal Years 1914 and 1915.

| | | 1914-1915 Total | 1913-14 | Increase or (—) Decrease |
|---|---|---|---|---|
| Open Mileage | Route Mile (*m. ch.*) | 5,686.26 | 5,470.64 | 215.62 |
| | Track Mile (*m. ch.*) | 8,611.51 | 8,200.68 | 410.83 |
| No. of Stations | | 1,604 | 1,529 | 75.00 |
| Locomotives | Tank | 1,259 | 1,248 | 11.00 |
| | Tender | 1,352 | 1,252 | 100.00 |
| | Total | 2,611 | 2,500 | 111.00 |
| Passenger Carriages | 4-wheeled | 4,279 | 4,245 | 34.00 |
| | Bogie | 2,414 | 2,208 | 206.00 |
| | Total | 6,693 | 6,453 | 240.00 |
| Goods Wagons | Covered | 20,535 | 19,726 | 809.00 |
| | Open | 23,167 | 22,979 | 188.00 |
| | Total | 43,702 | 42,705 | 997.00 |
| No. of Passengers carried | | 166,002,421 | 167,773,143 | —1,680,722 |
| No. of Passengers carried one mile | | 3,623,743,236 | 3,690,964,619 | —67,221,383 |
| Tonnage of Goods hauled | | 35,272,875 | 36,348,362 | —1,075,487 |
| Tonnage of Goods hauled one mile | | 2,982,798,481 | 3,053,852,638 | —71,054,157 |
| Traffic Receipts (yen) | Coaching | 54,671,971 | 55,975,342 | —1,303,371 |
| | Goods Wagon | 51,750,496 | 53,368,932 | —1,618,436 |
| | Shipping | 2,244,105 | 2,240,842 | 3,263 |
| | Total | 108,666,572 | 111,585,116 | —2,918,544 |
| No. of Passengers carried per day per mile | | 1,795 | 1,909 | —114 |
| Passenger Earnings per mile per passenger (yen) | | .0138 | .0139 | —.0001 |
| Coaching Receipts per day per mile (yen) | | 27.09 | 28.95 | —1.86 |
| Tonnage of Goods per day per mile | | 1,464 | 1,566 | —102 |
| Goods Earnings per ton per mile (yen) | | .0172 | .0174 | —.0002 |
| Goods Wagon Receipts per day per mile (yen) | | 25.40 | 27.36 | —1.96 |
| Traffic Receipts per day per mile (yen) | | 52.20 | 56.01 | —3.81 |
| Train Mileage | | 57,378,867 | 57,402,803 | —23,936 |
| Average No. of Vehicles coupled per train | | 18.7 | 18.9 | —2 |
| Vehicle Mileage | Passenger Carriages | 355,101,502 | 345,223,815 | 9,877,687 |
| | Goods Wagons | 715,924,526 | 736,984,397 | —21,059,871 |
| | Total | 1,071,026,028 | 1,082,208,212 | —11,182,184 |
| Locomotive Mileage | | 69,137,394 | 68,664,112 | 473,282 |
| Average No. of Vehicles hauled per engine | | 17.65 | 17.66 | —0001 |
| Shipping | Nautical Mileage of Lines worked | 218.3 | 218.3 | — |
| | No. of Ships | 42 | 35 | 7 |
| | Gross Tonnage | 21,515.82 | 19,640.05 | 1,875.77 |
| | No. of Passengers carried | 2,163,202 | 2,193,979 | —30.777 |
| | Earnings from passengers (yen) | 1,163,632 | 1,213,866 | —50.234 |
| | Tonnage of Cargo | 755,030 | 666,631 | 88.399 |
| | Earnings from Cargo (yen) | 921,429 | 875,082 | 46.347 |
| Works | No. of Workshops | 23 | 24 | —1 |
| | No. Workmen and labourers | 14,991 | 15,918 | —927 |
| | Average Wages paid per day (yen) | 10,273 | 11,186 | —913 |
| | Average Wages paid per day per capita (yen) | .707 | .710 | —3 |
| Revenue Account | Traffic Receipts (yen) | 112,169,616 | 113,477,055 | —1,307,439 |
| | Working Expenses (yen) | 57,178,286 | 54,551,246 | —2,127,040 |
| | Profit (yen) | 54,991,330 | 58,925,809 | —3,934,479 |
| Capital Outlay | Construction Expenses (yen) | 16,301,375 | 18,686,241 | —2,384,866 |
| | Improvement Expenses (yen) | 22,230,487 | 22,591,407 | —360.920 |
| | Additional Expenses (yen) | 3,362,088 | 2,617,392 | 744.696 |
| Working Expenses analysed | Maintenance Expenses (yen) | 13,084,922 | 12,624,686 | 460.236 |
| | Transportation Expenses (yen) | 16,794,654 | 14,892,049 | 1,902.605 |
| | Traffic Expenses (yen) | 15,628 158 | 14,979,459 | 648.699 |
| | General Expenses, Maintenance of Equipment, Hotels, Shipping, etc. (yen) | 11,670,551 | 12,055,051 | —384,500 |
| Capital (yen) | | 1,006,923,089 | 973,091,496 | 33,831,593 |
| Staff | President | 1 | 1 | |
| | Vice-President | 1 | 1 | |
| | Engineer-in-Chief | 1 | 1 | |
| | Directors | 6 | 6 | |
| | Secretaries | 143 | 133 | 10 |
| | Engineers | 322 | 308 | 14 |
| | Clerks | 4,569 | 4,526 | 43 |
| | Assistant Engineers | 2,140 | 2,175 | —35 |
| | Railway Foremen | 687 | 104,936 | |
| | Inferiors and servants | 29,432 | — | |
| | Labourers of regular employ | 77,604 | — | |
| | Total | 114,966 | 112,087 | 2,879 |
| Relief Association | Brought over from last year | 2,467,123.69 | 1,982,131.94 | 484,991.75 |
| | Revenue | 1,198,687.12 | 1,095,865.35 | 102,821.77 |
| | Disbursements | 540,447.74 | 610,873.60 | 70,425.86 |
| | Carried forward to next year | 3,125,363.07 | 2,467,123.69 | 658,239.38 |

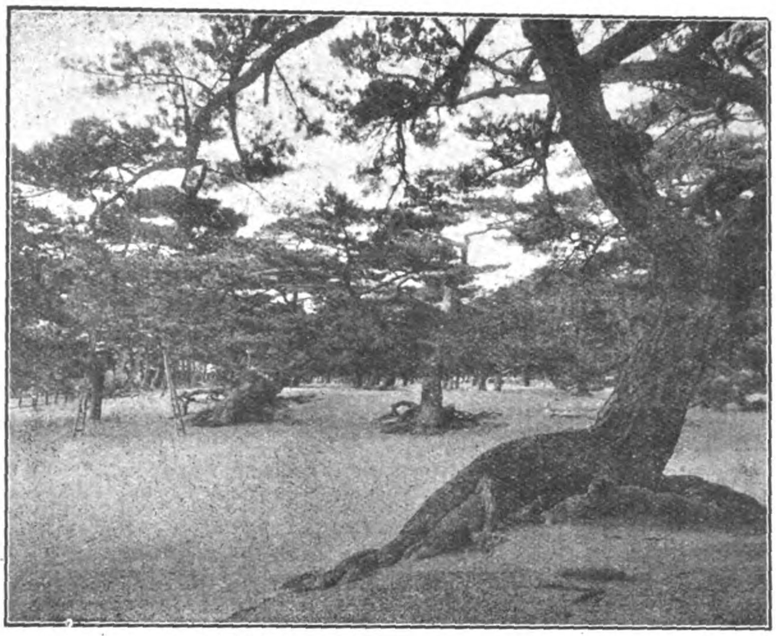
In the Miyazaki line, the Kobayashimachi-Tanigashira section was opened to traffic on May 11th, 1913, the Tanigashira-Miyakonojo section on October 8th, 1913, and the Miyakonojo-Mimata section on February 11th, 1914. The Mimata-Yamanokuchi section, too, was well forward and is expected to be available for operation next year.

The Otoineppe-Kotombetsu section, Soya line, was seriously retarded owing to the difficulty in the transport of material. However, the work made fair progress, so that it is expected to be put into service next year. No progress was made with the work on the Kotombetsu-Nakatombetsu section, as only a portion of it was taken up this year.

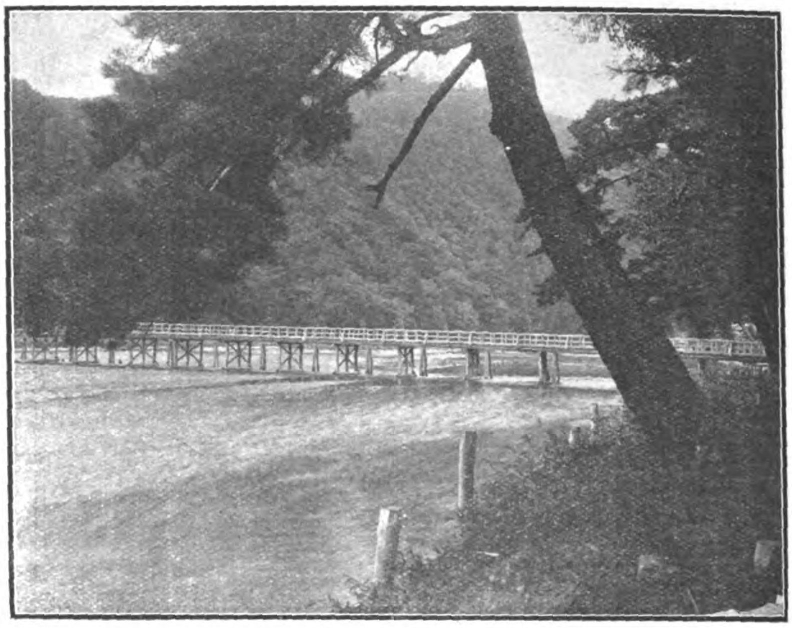
The Shimofurano line was brought to a finish as prearranged, and opened to traffic on November 10th, 1913.

As regards the Nemuro line, commencement was made with the purchase of land, no work being taken in hand as yet.

Turning next to light railway lines, the Moka line was opened for service on July



Maiko Park Renowned for Distorted Pine Trees



Arashiyama Bridge Near Kyoto

11th, 1913, the Kamiiso line on September 15th, 1913, the Akayu-Nashigo section, Nagai line, on October 26th, 1913, and the Oiwake-Futada section, Funakawa line, on November 9th, 1913. The remainder portion of the Manji and the Nagai line as well as part of the Funakawa, the Inukai, the Miyaji, and the Yubetsu line were completed in greater parts, and are expected to be available for use next year.

The total outlay on construction works during the year amounted to 18,686,241 yen, an increase of 9,546,896 yen over the preceding year.

### Railway Laboratory

In the Laboratory of the Railway Investigation Office, chemical experiments were carried out on cement, rubber, oils, brick, metals, etc., and tests made on the strength of metals and other materials. Tests were also conducted on the consumption of fuel and the tractive power of locomotives.

As regards sleepers, tests are now in progress on different kinds of wood creosoted, laying them on the specified tracks with a view to ascertain their durability.

### Relief Association

In regard to the Relief Association, the Membership on the roll at the end of the year under review aggregated 102,352, an increase of 2,429 against the preceding year. The revenue to the coffers of the Association totalled 1,095,865 yen, and the expenditure 610,874 yen, and the balance 484,991 yen and 1,982,132 yen brought over from the preceding year's account, the total carried forward to the next year's account amounting to 2,467,123 yen. The Association maintains the Tokiwa Hospital in Tokyo and 10 dressing rooms at the workshops in the different localities.

## PRIVATE AND LIGHT RAILWAYS IN JAPAN PROPER AND SOUTH MANCHURIA RAILWAY

During the year (1914-1915) there was not a single case of charter newly granted to private railways or of an old charter invalidated. Nor was there any extension made in the open lines. In consequence the number of private railways, both open and not yet open, and their aggregate mileage remained the same as in the preceding year, being 9 companies representing 252 m. 10 ch. open to traffic and 353 m. 76 ch. under construction. In the list of light railways, however, a certain change has been brought about as a result of either new grants or invalidations of charters. The former covered 91 companies with the total mileage of 1,034 m. 27 ch. and the aggregate capital of 52,080,264 yen, and the latter represented 20 companies with 239 m. 47 ch. and 12,850,000 yen. The mileage of light railways open to traffic at the end of the year extended 324 m. 6 ch., which means an increase during the last twelve months of the total open mileage of light railways from 799 m. 12 ch. to 868 m. 77 ch. The lines under projection came up to 104 m. 10 ch. in total for the private railways, while in the light railways they represent 3,103 m. 68 ch.

The aggregate capital at the end of the year was 28,550,000 yen for the private railways and 56,539,222 yen for the light railways.

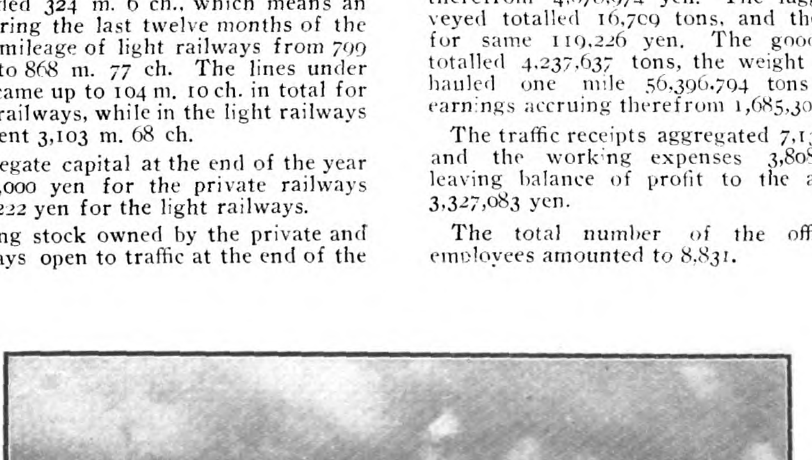
The rolling stock owned by the private and light railways open to traffic at the end of the year consisted of 260 locomotives, 916 carriages, 160 electric trams, 16 steam motor cars and 3,285 wagons.

The locomotive mileage was 5,302,220 miles and the coal consumed 140,116,194 tons. The train mileage reached 4,460,910 miles and the passenger car mileage 21,032,041 miles, exclusive of the electric tram mileage and the steam motor car mileage amounting to 9,076,168 miles and 291,261 miles respectively, while the wagon mileage reached 17,831,690 miles.

The passengers carried during the year totalled 39,267,106, the passengers carried one mile 280,838,421, and the earnings derived therefrom 4,678,974 yen. The luggage conveyed totalled 16,709 tons, and the charges for same 119,226 yen. The goods hauled totalled 4,237,637 tons, the weight of goods hauled one mile 56,396,794 tons and the earnings accruing therefrom 1,685,305 yen.

The traffic receipts aggregated 7,135,516 yen and the working expenses 3,808,433 yen, leaving balance of profit to the amount of 3,327,083 yen.

The total number of the officials and employees amounted to 8,831.



Water Pierced Rock Near Matsushima

# ROYAL STATE RAILWAYS OF SIAM

[DIRECTOR GENERAL WEILER'S REPORT FOR THE YEAR 2457. A. D. 1914-15]

On 15th June 1914 a further section of the Northern line Pak Ta—Ban Pin was opened to traffic bringing the total length open up to 836 Kilometers made up as follows:—

Korat line (Bangkok—Korat) 264.1 km; Eastern line (Bangkok—Petriu) 63.4 km; River line (Makasan—River station) 6.5 km; Sawankaloke line (Bau Dara—Sawankaloke) 28.9 km; Northern line (Ban Phaji—Ban Pin) 473.1 km.

The capital outlay from the commencement on all open lines amounted at the close of the year to 56,383.969 Ticals as specified below:— Korat line, 17,673,189; Eastern line, 3,424,333; River line, 614,150; Sawankaloke line, 816,582; Northern line, 28,817,492; and the Den Chai—Ban Pin Northern Line of which accounts are not yet closed, 2,153,500; Extensions and improvements, 2,836,598; and Various surveys 48,125; Total 56,383.969.

### Passenger Traffic

The number of passengers conveyed shows an increase in all classes, and in total 75,774. Regarding the passenger traffic on different sections the appreciable increase between Ban Phaji and Pitsanuloke is probably due to general development of these districts by extensive cultivation of former waste lands. Certain stations show noticeable increase in number of passengers as:—

Bangkok, 23,205; Ban Nong Don, 9,873; Ayuthia, 5,537; Tarua, 4,090; Chong Kae, 3,112, and Korat, 3,041. These are attributable to general development of the districts with residential and other places passed by the railway. The growth of Bang Sue with 14,667 is chiefly due to the establishment of the Cement-works and Don Muang with 3,832 to the Aviation-camps. The pilgrim traffic during the year shows a decrease of 3,013 passengers for Phrabat and 945 for Phraten. The increase of 9,392 Ticals for special trains is accounted to the military manœuvres. Average fare paid per passenger was Tical 1.—and the average distance travelled per passenger 50.15 km. Average receipt per passenger per km. amounted to stangs 2. 02.

### Goods and Live-stock Traffic

Receipts from Goods and Live-stock traffic show an increase of Ticals 122 722, as follows:

### Goods Traffic

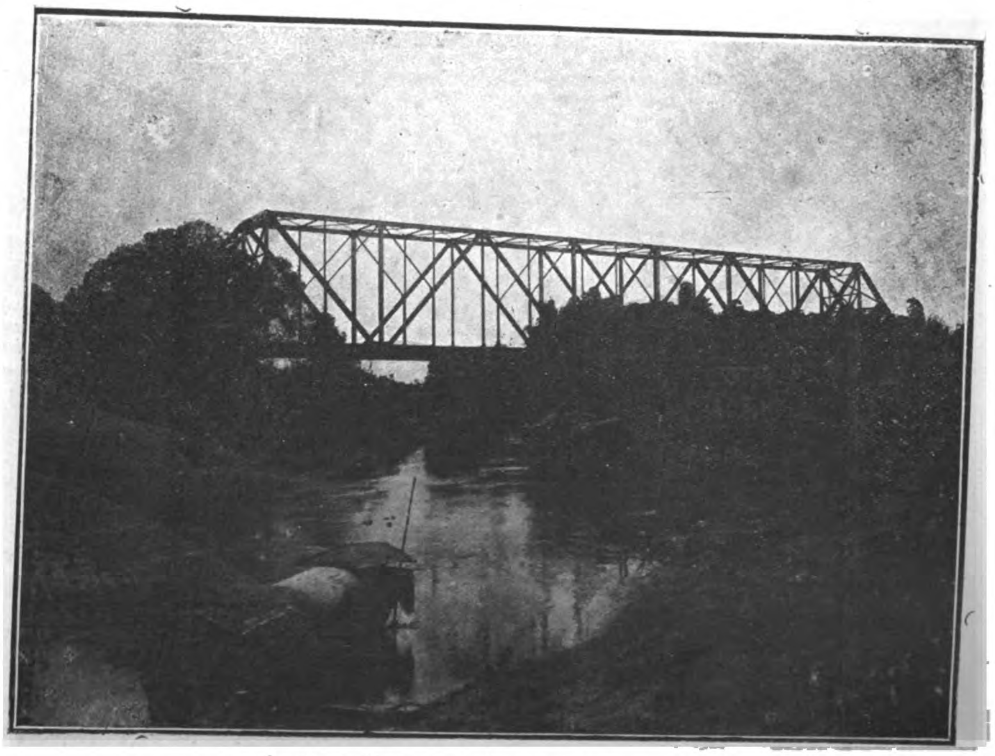
Deducting Railway materials for the Northern extension under construction, transported at a low rate, the total quantity of goods of all descriptions conveyed during the year under report shows an increase of 33,749 tons.

There has been a decrease of 1,004 head of livestock and 3,762 Ticals in income, the latter decrease being due to a falling off in cattle traffic from distant stations, while betel nuts etc.—increased 1,064 tons and sugar increased 1,074 tons. These increases are attributable to the inclusion of other, partly lower class goods, such as cocoanuts, kapi, tobacco, garlic, onions, potatoes, etc., booked under the class of betel nuts and sugar. The above goods are generally loaded together, but booked under the commodity of the principal highest class goods. This evidently is responsible for the increase in the two commodities, and decrease in the other named articles.

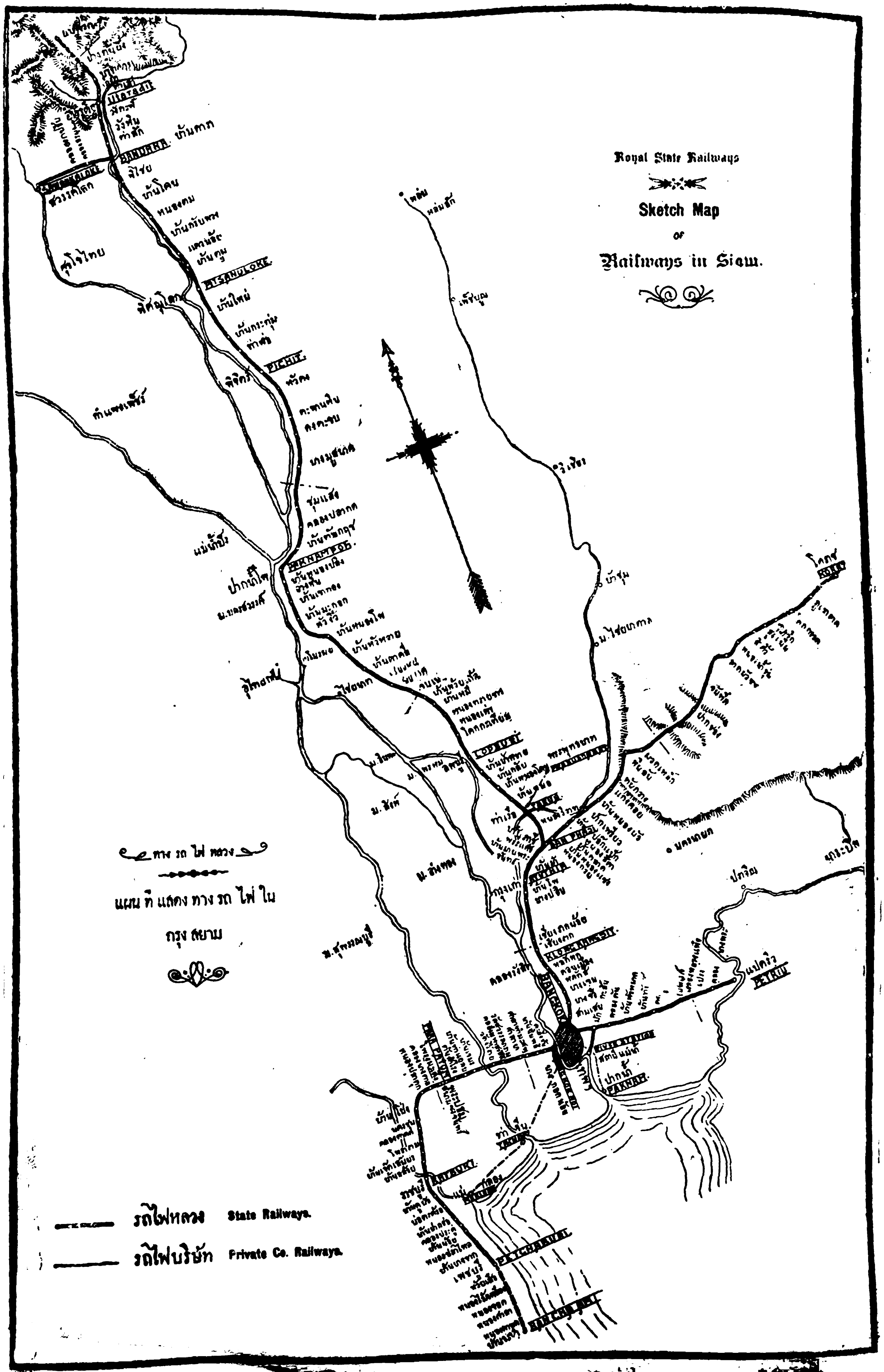
### Building Materials

The general development of the buildings and structures in the interior is evidenced by the following increases in transport of building materials such as:—Bricks and tiles, 1,157 tons; Cement, 368 tons; Sand, 985 tons; Timber including logs 2,246 tons.

STATION AT PETRIU, SIAM



STEEL BRIDGE OVER KLONG THA LAW


Royal State Railways
Sketch Map
of
Railways in Siam.
แผนที่แสดงทางรถไฟใน
กรุงสยาม
รถไฟหลวง State Railways.
รถไฟบริษัท Private Co. Railways.

The conspicuous absence in the transport of *Cardamum* can not otherwise be explained, than that of the difficulty of export and consequently the ruling low price.

### Charcoal Shipments

The falling off 3,131 tons in Charcoal is probably due to over production caused by too many competitors during the last year, thus leaving still a considerable quantity of the stock unsold at the different stations. This tendency on their part resulted consequently in the reduction of transport of this article in the year under report. A decrease showing of 720 tons in this commodity must be accountable to less demand of black clothing, in Siam, as well as in the neighbouring countries. The welcome increase in firewood of 6,739 tons is the evident sign of the flourishing trade in this line. The second class wood, which is not suitable for Railway consumption, is found in abundance in the neighbourhood of the railway line, and with the exceptionally low rate for same, the business has helped to compete with those imported from the coast in former times.

The traffic in fruits shows increase of 655 tons more than the previous year, due to the increased demand, and in supply the stations Pichai, Utaradit and Sawankaloke contributed mostly towards the transport.

*Hides and Horns* show a decrease of 310 tons, the cause of which was owing to the difficulty in export. Gradually the transport increased again, but as the market prices were not profitable to the shippers a large stock is still kept up country.

*Household goods* have increased in transport by 858 tons. Kerosine oil, 369 tons; Packages, 1,775 tons; Rice, 834 tons; Salt, 1,645 tons; and this advancement is probably due to further extension of line in the North and the general prospects of the country along the line.

The staple production of the country, unhulled rice, shows an increase by 4,331 tons in transport, and it is interesting to observe that in spite of a decrease on Ban Map Phra Chan—Gengkoi section of 12,272 tons and Sawankaloke line of 323 tons a total of 12,595 tons, there is a compensating item of an increase of 16,926 tons, i. e. from 4 sections. The increase is remarkable in view of the fact that the most of the lands situated on two of these sections were barren and uncultivated in prerailway days.

*Sticklac* shows a decrease of 770 tons, the cause being probably the same as explained under Hides and Horns.

### Traffic Increase

The enhancement of traffic in stone shows 12,988 tons more carried than in the last year. The notable contributors to this increase are:—Bangkok, for public works, 3,600 tons; Bang Pa In, water works, 5,810 tons; Korat, public works, 2,290 tons; and Pitsanuloke, public works, 1,030 tons.

The increase of 1,632 tons in water was due to the scarcity of rain in the Chong Kae district during the year under report. Special water tanks are provided in wagons for the purpose and water supplied from railway pulsometers of Paknampoh at low freight charge only. Average receipt per ton amounts to 5.17 Ticals and the mean distance goods were carried comes to 202.05 km. Average ton-kilometer receipt amounts to 2.56 stangs.

*Rolling-stock.*—During the year under report the rolling stock has been increased by 9 passenger cars. Stock on 31st March consisted of 58 locomotives, 219 passenger cars and vans, and 806 goods wagons. One locomotive of the oldest type was dismantled, being unserviceable.

### Railway Staff

The total number in railway employ at the close of the year under report was 2,628. They consisted of 567 officials, 50 watchmen, 313 workmen and 1,698 coolies.

### FINANCIAL RESULTS OF TWO YEARS COMPARED

| | Year 2457 Ticals | Year 2456 Ticals | Increase Ticals | Increase in % |
|---|---|---|---|---|
| Gross Receipts ... ... ... ... | 4,493,494 | 4,283,669 | 209,825 | 4.90 |
| Working Expenses ... ... ... | 1,550,644 | 1,518,345 | 32,299 | 2.13 |
| Net Earnings ... ... ... ... | 2,942,850 | 2,765,324 | 177,526 | 6.42 |
| Contribution to Renovation Fund ... | 280,931 | 273,813 | 7,118 | 2.60 |
| Remaining Net Profit ... ... ... | 2,661,919 | 2,491,511 | 170,408 | 6.84 |
| Percentage on Capital Outlay ... ... | 4.74 | 4.53 | — | 0.21 |

The percentage of expenditure to gross receipts was as follows:—

| | Year 2457 | Year 2456 | Difference |
|---|---|---|---|
| Maintenance of Ways and Works ... ... ... | 11.09 | 11.68 | — 0.31 |
| Locomotive Department ... ... ... ... ... | 13.87 | 14.66 | — 0.79 |
| Traffic ... ... ... ... ... ... ... ... | 7.86 | 8.22 | — 0.36 |
| General ... ... ... ... ... ... ... ... | 0.79 | 0.88 | — 0.09 |
| Total ... | 34.51 | 35.44 | — 0.93 |

Receipts from Coaching traffic show an increase of 85,435 Ticals. Details are as follows:—

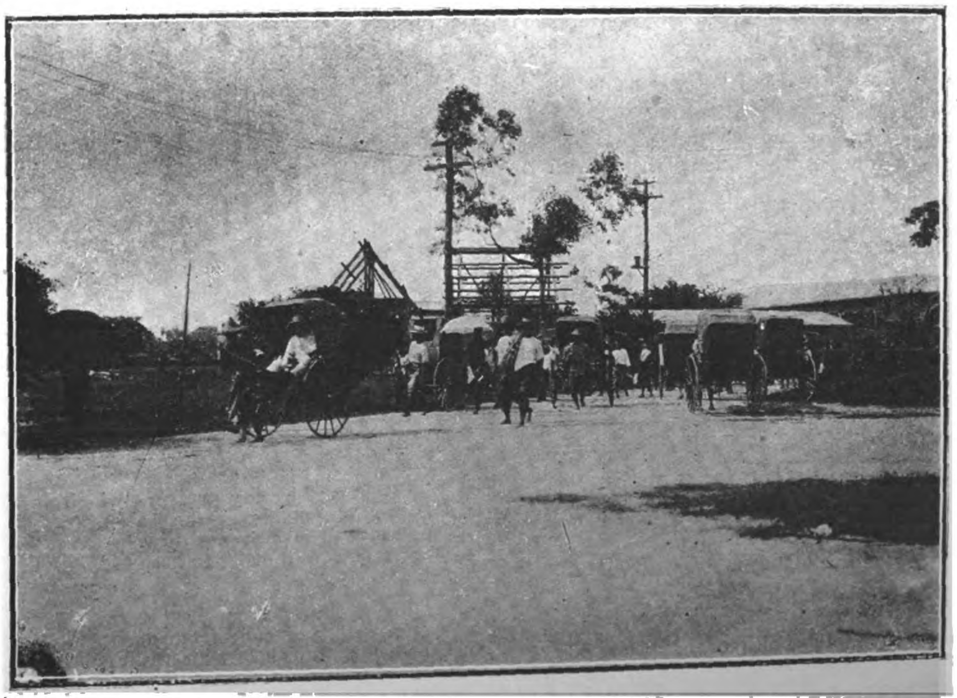
| RECEIPTS FROM | Year 2457 | | Year 2456 | | Increase | |
|---|---|---|---|---|---|---|
| | No. | Amount | No. | Amount | No. | Amount |
| First Class ... ... ... ... | 8,445 | 35,139 | 6,324 | 34,949 | 2,121 | 190 |
| Second Class... ... ... ... | 35,822 | 101,899 | 34,033 | 100,880 | 1,789 | 1,019 |
| Third Class ... ... ... ... | 2,386,229 | 2,296,917 | 2,3 4,365 | 2,221,218 | 71,846 | 75,699 |
| Total ... ... | 2,430,496 | 2,433,955 | 2,354,722 | 2,357,047 | 75,774 | 76,908 |

### STATEMENT OF ACCOUNTS OF THE RENOVATION FUND

| Receipts | Ticals | Ticals | Expenditure | Ticals |
|---|---|---|---|---|
| Balance 1st April 1914 ... ... | | 2,218,266.78 | Purchase of 34,241 sleepers | 46,713.40 |
| 4% interest on the capital of the fund for the year 2456 | | 78,659.85 | „ „ 736 bridge sleepers ... | 3,191.95 |
| *Contribution for year 2457* | | | „ „ 516 switch sleepers ... | 2,776.45 |
| *a.* from traffic earnings: ½% on capital outlay (average during the year) ... ... ... | | 280,931.30 | | |
| *b. from Construction funds:* | | | | |
| On lines under construction 4 locomotives each Tcs 692 ... | 2,768 | | | |
| On lines under construction 50 wagons each Tcs 46 ... ... | 2,300 | 5,068 | | |
| Total ... ... ... ... | | 2,582,925.93 | Total ... ... | 52,681.80 |

### BALANCE

| | | |
|---|---|---|
| Receipts ... ... ... ... ... ... | Ticals | 2,582,925.93 |
| Expenditure ... ... ... ... ... | „ | 52,681.80 |
| Balance on 31st March, 1915 ... | Ticals | 2,530,244.13 |



STREET SCENE NEAR BANGKOK STATION

TOTAL RECEIPTS AND EXPENDITURE FOR THE YEAR 2457 (1914—1915)

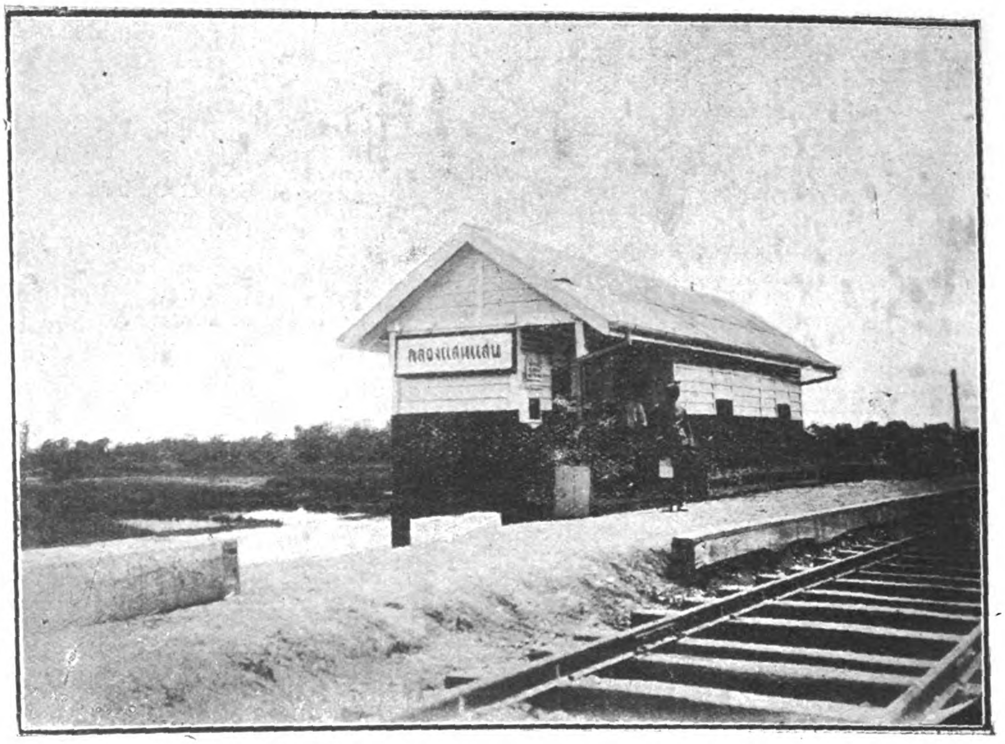
| Receipts | Ticals |
|---|---|
| Coaching traffic ... ... ... ... ... | 2,469,307.04 |
| Goods traffic ... ... ... ... ... | 1,807,948.58 |
| Live-stock ... ... ... ... ... | 134,712.30 |
| Miscellaneous ... ... ... ... | 81,526.06 |
| Total receipts ... ... ... ... | 4,493,493.98 |
| „ expenditure ... ... ... | 1,550,644.03 |
| Net earnings ... ... ... ... ... | 2,942,849.95 |
| Remitted to Treasury ... ... ... | 2,530,814.57 |

| Expenditure | Ticals |
|---|---|
| Personal emoluments ... ... ... | 634,087.93 |
| General charges ... ... ... ... | 54,731.13 |
| Expenses for maintenance of ways and works | 390,631.10 |
| „ „ fuel, pumps and rolling stock ... | 407,530.79 |
| „ „ new works which are not added to Capital Account ... ... ... | 63,663.08 |
| Total expenditure ... ... ... ... | 1,550,644.03 |
| Due to Treasury ... ... ... ... | 412,035.38 |

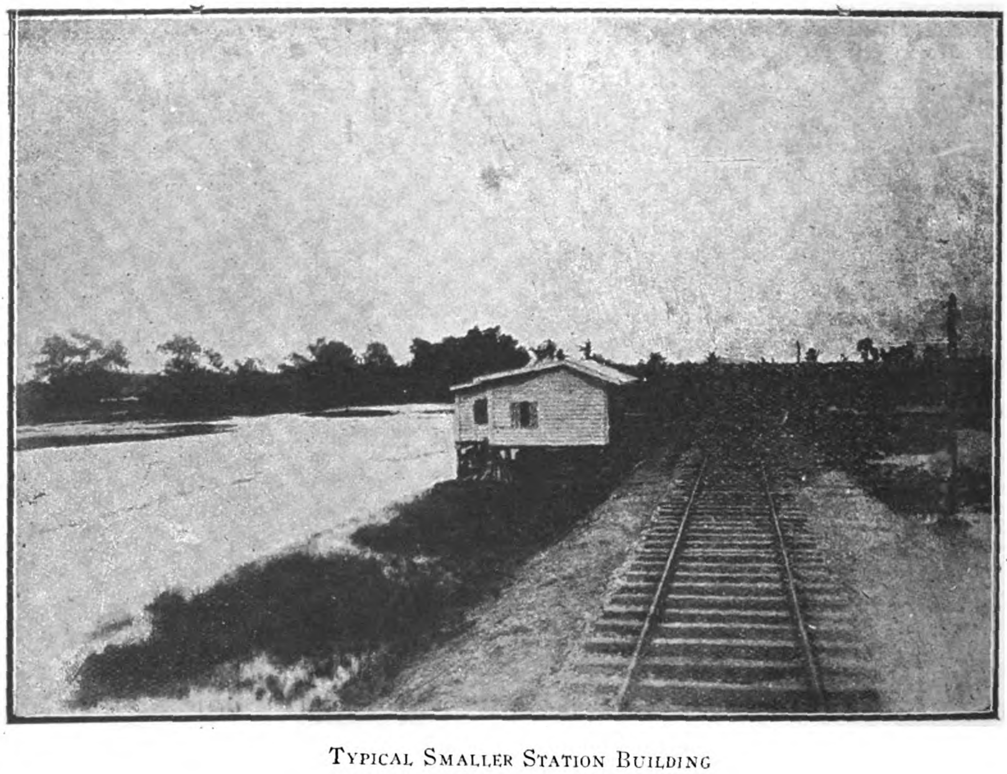
**BALANCE, 31st MARCH, 1915**

| Ticals | Liabilities |
|---|---|
| 3,563.86 | Due to Postal Department, account of stamps |
| 206,319.21 | „ Construction Department |
| 421,035.38 | „ Treasury |
| 2,530,244.13 | Renovation fund |
| 38,356.84 | Depreciation fund for printing office plant |
| 34,795.52 | „ fund for saw mill Nong Nam Khoon |
| 5.50 | „ fund for boats and launches |
| 31,171.86 | „ stone crushing plant at Chong Kehj |
| 500.— | Securities |
| 1,842.95 | Memorial Fund |
| Total 3,258,835.25 | |

| Ticals | Assets |
|---|---|
| 15,439.32 | Stock value of printing papers and tickets |
| 233,891.66 | „ „ materials in the workshop |
| 75,890.38 | „ „ firewood |
| 75,276.36 | „ „ timber, at sawyard Nong Nam Khoon |
| 4,035.— | „ „ explosives |
| 122,468.81 | Cash on hand with Accountant |
| 141,749.93 | Bank balance |
| 3,563.86 | Postal stamps on hand |
| 2,530,244.13 | Treasury balance for renovation fund |
| 56,275.80 | Sundry Debtors |
| Total 3,258,835.25 | |



STATION AT KLONG SENSEP



TYPICAL SMALLER STATION BUILDING

## AN INTERESTING INSTALLATION OF GOULDS CENTRIFUGAL PUMPS

In the Hotel Baltimore, Kansas City, Missouri, water is distributed from a large pressure tank located on the roof of their twelve-story building. This tank is normally kept charged by city pressure which is about 80 to 85 pounds at the basement. As this pressure drops at times these "booster" pumps are required in order to keep the tank filled.

Two of these pumps are in parallel each with a Cutler-Hammer pressure controlled self-starter to cut in one of them when the pressure drops below a certain point. One of these is kept in reserve all the time.

The discharge of the third pump is connected to the suction openings of the first two and has a pressure control which will cut it in if the city water pressure should fail entirely as it sometimes does. In that case this pump and one of the first two will be working in series.

The pumps are Goulds Fig. 3001 No. 4-L Double Suction Centrifugals direct connected to 25 H. P., 1,400 R. P. M. Type S. K. Westinghouse Motors. Pumps have a capacity of 300 G. P. M. each.

# THE PURIFICATION OF PUBLIC WATER SUPPLIES IN CHINA BY THE CANDY MECHANICAL FILTER

As all River Waters in China, as also many Well and other supplies, require purification before they are fit for human consumption, our Readers will be interested in the following description of the new system of Filtration carried out at Shameen, for converting the highly contaminated waters of the Canton River, into a safe, wholesome and brilliantly clear drinking supply.

This system known as the *Candy Declor Filter*, ensures the absolute destruction of the B. Coli, Typhoid Bacillus and Cholera Vibrio; it is in use at many large and well known towns in England, (such for instance as Reading and Windsor), and is one of the many types of Waterworks Filters supplied by the Candy Filter Company Limited, of Westminster, London, England, who specialize in Filter plants for rendering water fit for dietetic and other purposes.

By means of their various designs of Filters and Chemical Plants the Candy Filter Co. are able to deal with every kind of water and by removing therefrom impurities of all kinds, (i.e. bacteria, mud, silt, suspended matter, discolouration, etc., etc.), to make them fit for dietetic or manufacturing purposes.

The following copy of a Report shows the great success of the Filters, at Shameen, Canton City, China, dealing with the water from the Canton River.

### Report on Candy Waterworks Filters at Shameen, Canton City, China, Dealing with Water from the Canton River

Canton, August, 1915.

Gentlemen,

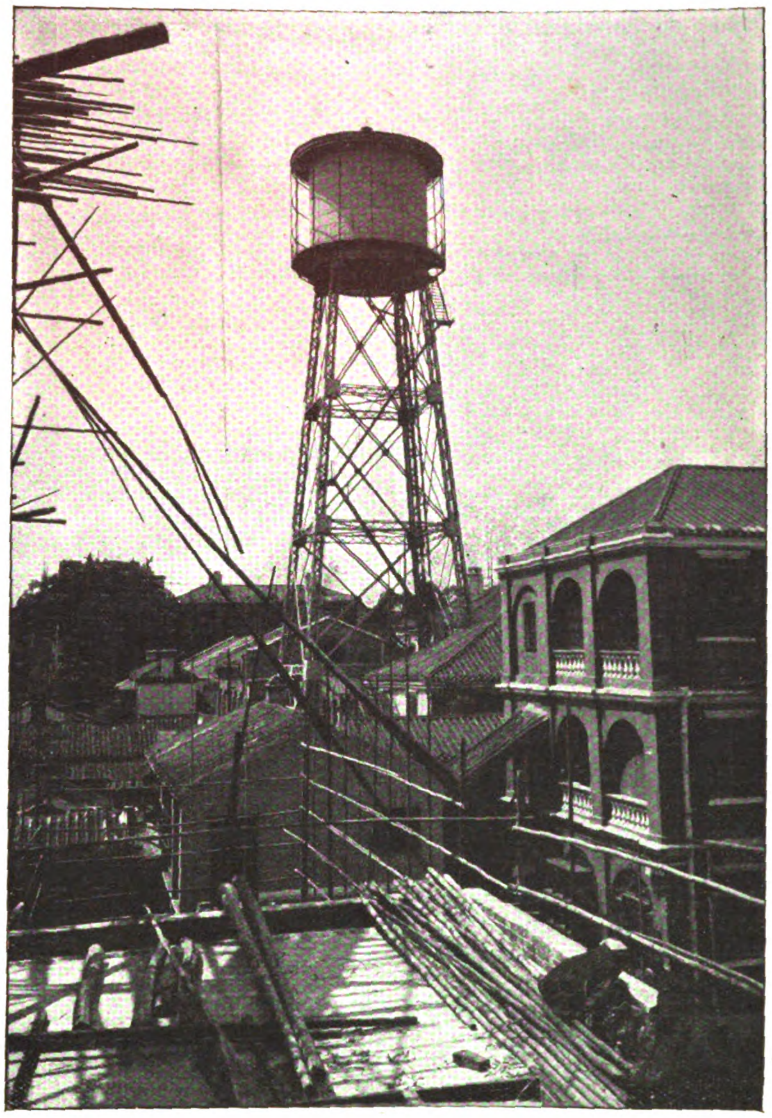
"In reply to your request for some particulars of the new Waterworks we have lately designed and carried out for the island of Shameen at Canton, China, in connection with which your Filters were installed, I have pleasure in giving the following information:—

"Shameen is a small Island formed by the Canton River and a Canal, and is connected to Canton City by a bridge. The River is a large one, and can accommodate Ocean going steamers opposite Shameen. It passes through a thickly inhabited district, and has a very large floating population, moreover the River passes through large tracts of rice-growing fields which fields are largely manured by human excreta, therefore the water is considerably contaminated by sewage, and further is more or less turbid, especially so in the rainy season.

"The new Waterworks comprise a pumping station taking water from the Canton River immediately in front of the Shameen, an elevated storage tank adjacent, 95 feet above ground, a Filter Plant and a distribution system.

"Owing to the nature of the water it is essential that the Filter Plant should be capable of dealing effectually with the turbidity which is of a difficult nature, and also be a complete safeguard against waterborne disease. For these reasons, after considering various types of Filters, we decided to instal your Compound Declor Filters with Alumina and Chlorine Injection Plant, and pump the water through the Filters into the overhead storage tank.

"The installation consists of two Filter units, each capable of dealing with 7,500 gallons per hour, two Tangyes Vertical Treble Ram Pumps, two Suction Gas Engines and Gas Producer; the Pumps and Gas Engines being in duplicate can be used singly or in pairs as may be required, and are housed together with the Chemical Plant in one building. As will be seen from the accompanying photos, the building is of substantial construction and well appointed, the floor and walls being tiled.



RIVER AT CANTON SHOWING PIER UNDER WHICH IS CARRIED SUCTION PIPE—ABOVE IS ELEVATED TANK AND SUPPORTING STRUCTURE.

"Each Filter is divided horizontally into two distinct and independent parts. The water on its way to the pumps, receives the Alumina solution in proportion, and is then lifted through the upper parts of the Filters which contain the Compound or Double Beds of filtering material. Here the turbidity is effectually dealt with, and the water then passes up to the overhead tank, receiving en route the proper quantity of Chlorine solution. In the overhead tank, the Chlorine has time to act, and the water then passes down and through the lower parts of the Filters, which contain the Declor Filter Bed, by means of which, the excess of Chlorine remaining is removed, and the water goes into the mains clear and bright, and bacteriologically safe.

"The Filters, Pumps, Gas Engines and Gas Plant, are looked after by three intelligent Chinese attendants, and the hours of pumping are about six hours per diem during the summer and five hours during the winter months.

"The Filters are washed out at varying intervals, dependent upon the condition of the water in the river; during the flood season we find it necessary to wash out the Filters every other day, but during the dry season we find once or twice a week is sufficient.

"When taken from the river before filtering, the water apart from being as a rule very turbid is quite unfit bacteriologically for potable purposes. Since we have found by experience the proper quantity of Alumina and Chlorine to use, the Filters are giving us, and the residents, every satisfaction. The Medical Officer of Health who tests the water regularly by MacConkey's method reports that it is eminently satisfactory.

"I may mention that the filtered water, besides being used for ordinary domestic purposes, supplies a Swimming Bath and the water viewed in bulk in this Bath is a severe test of the effectiveness of the filtration for the removal of the turbidity.

"I feel that we have discovered in the Compound Declor System, a Filter capable of dealing with very difficult waters, of which that from the Canton River is a case in point, and I am glad to be able to advise its adoption in connection with various schemes we have on hand, with the confidence born of experience that the system can be thoroughly relied upon."

Yours faithfully,

*(Signed)* F. R. J. ADAMS, A. M. I. Mech. E., Messrs. Thomas, Adams & Wood, Civil Engineers.

To Messrs. The Candy Filter Co., Ltd.
Westminster, London, S. W.

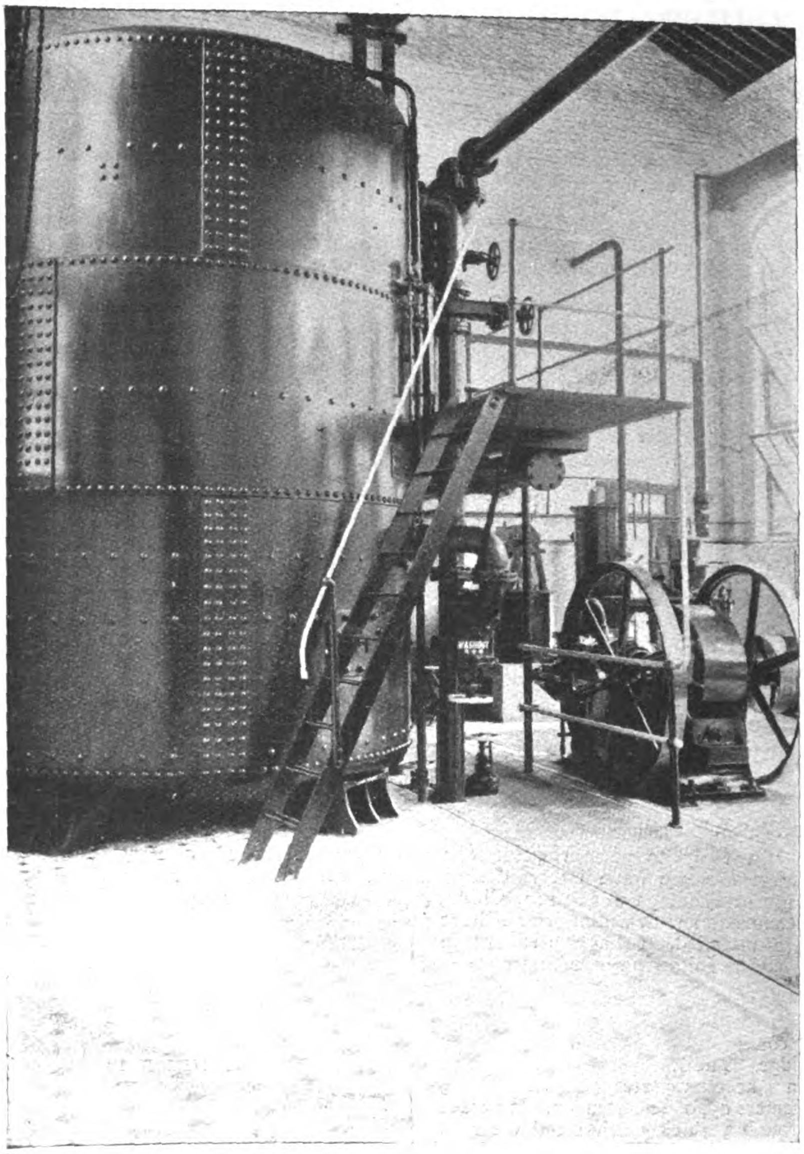
The Engineers under date August 30th, 1915, also kindly afforded the following supplementary information:—

Messrs. The Candy Filter Co., Ltd.,
Westminster,

Gentlemen,

"I have much pleasure in enclosing herewith some particulars of the Shameen Water Works, I have not sent them earlier as I wished to be thoroughly satisfied that we could get good water under the most adverse conditions, and the conditions for the last two months have been the worst on record; as you may have seen in the papers, the floods here last month were the highest and most disastrous ever known in the Province, the Shameen was four feet or so under water, a state of affairs which has never been known; the highest recorded water level being a few inches above Bund level some thirty years ago. As you can imagine, the amount of mud, sand, excreta, etc., which was carried down by the river was immense. The Pump House for five days was under water but as soon as possible after the flood had subsided sufficiently to allow the pumps to work, water was supplied to the Settlement. We did not increase the amount of chlorine usually used and that result was quite satisfactory. I enclose three reports of the Medical Officer, one made a week or so before the flood, one from sample of water taken immediately after the pumps were able to work again, and one three weeks later, from the last of which you will see we are getting excellent results; although a great part of the surrounding country is still under water.

I am, gentlemen,
Yours faithfully,
*(Signed)* F. R. J. ADAMS.



VIEW OF ENGINE AND FILTER HOUSE

## CHINA AS LUMBER MARKET

According to a Canadian Trade commission's report, the growing importance of the timber trade of China is a matter of much significance. Considerable as the trade already is, the volume should materially increase in the future. The quality of timber sent to this market is known as China grade, which is not the first quality, but contains a certain percentage of marketable timber and the balance of No. 2. Formerly a large proportion of the demand was made up of large squared logs, 18 to 24 inches square, which were eventually sawn or worked up by hand by native workmen. Less of this class of lumber has been coming in of late than was formerly the case. The greater portion now usually comes already sawn in the form of large planks and long pieces of square timber, flooring and joists and other sawn lumber. Dressed lumber and tongued and grooved is not imported in any great quantity.

Railway sleepers have represented in some years a large proportion of the importation of softwood timber into China, and up to the present time, Japan has supplied by far the greater quantity of this class of wood. Jarrah wood from Australia has been used to some extent in railway construction on certain lines in South China, but on central and northern roads, such expensive wood has not yet been found to be necessary. Creosoted Oregon pine, white oak and tamo (the latter from Japan) are both cheaper and work out at a less annual cost, comparing the life of both kinds of wood, than that of Jarrah. Nevertheless, Jarrah is popular among British engineers engaged in railway management and construction in China. They are not as yet sufficiently familiar with creosoted pine or fir, and have no data as to the life of the latter in this country to go upon, and whether it is prejudice or not, are all very much disposed to employ Jarrah wood whenever possible.

The matter of tea boxes is a subject which requires study, for not all kinds of wood are suitable for this purpose. The latter must be distinctly free from odor of any kind, which might be deleterious to the sensitive flavor of the tea. In all other respects it need not be of any very high quality, so long as it is strong enough in fibre to securely hold the nails without splitting. In addition to the China market for tea boxes, there is also a similar market in Ceylon for the same article. A certain firm in Colombo has, for several years, been supplying that market with tea boxes made from Japanese wood. Boxes for the shipment of eggs are now being made locally in large quantity, and soap and candle boxes will probably be in demand at no great distant date. With the extension of the export trade of China, the employment of wooden boxes must greatly increase.

## TUNGSTEN FROM MALAYSIA

During 1915, 3,939.71 piculs of tungsten were exported from the F.M.S., the duty on which amounted to $5,074, being a decrease of $2,720 on the sum collected in the previous year.

# ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

## RAILWAYS

**New Railway in Inner Mongolia.**—Amplifying the brief statement regarding the Ssupingkai — Chengchiatun Railway line that appeared in the Engineering and Financial columns of the *Far Eastern Review's* January issue, the following more detailed account giving the bearing of the road from a political standpoint, may be of interest. It is abstracted from a report by the Harbin correspondent of the *North China Daily News*.

The news that the new loan for the building of a new railway on similar terms as the Ssupu Railway between Shihpingkai and Liaoyangchow, better known as Chengchiatun, has been successfully concluded with the Yokohama Specie Bank is only what was to be expected, for an understanding between the Chinese and Japanese Governments has existed for some time past. The importance of this line cannot be over-estimated, and though according to Japanese engineers' surveys the line will be only fifty-two miles, it will eventually be the first section of the main line to Taonanfu, which lies some 160 miles to the north of Liaoyangchow.

Taonanfu may now be designated as the northern boundary town in the Japanese sphere of influence, and though actually in Eastern Inner Mongolia and lying one and a half degrees due north of Changchun, which belongs to Kirin province, it is administered over by Fengtien Province, whose capital is Mukden. Once the construction of this main line to Taonanfu is decided upon, schemes will be on foot to continue this line on to Tsitsihar, the capital of the Heilungchiang province, but before anything definite can be decided, it will be necessary for the Chinese Government to come to an arrangement with the Russian Government, for all the territory north of Taonanfu lies in the Russian sphere of influence.

The actual situation from a Russian point of view created by the building of this quasi-Japanese line to Taonanfu is an interesting one, for it undoubtedly will affect traffic earnings in the Chinese Eastern railway, who will find it necessary to have at least branch lines to tap the natural wealth of Eastern Inner Mongolia and to link up with their main line in order not to allow the Japanese line to secure a monopoly of this trade and divert it southwards. I will at a later date deal with this important question of the future in detail. It is now necessary to give some details of the first section to Liaoyangchow on which work no doubt will begin this spring.

Lying some seventy-five miles south of Changchun, the northern terminus of the South Manchuria Railway system, on the main line to Tairen is Tsupingku station. The undulating stretch of country between these two points lying in the basin of the Liao, which is fully cultivated, resembles within a month of harvest a brown sea, for the principal crop grown is kaoliang, the staple food of man and beast in these districts. There is no Chinese town at Ssupingkai; it is a Japanese Railway settlement, pure and simple, governed by the Japanese authorities. It is, however, of historic interest, for it was here that the armistice agreement was signed by the delegates of Field-Marshal Oyama and General Linievitch before the Portsmouth Treaty had been arranged; and now again it is destined to play an important rôle, for from this point Japanese colonists, traders and merchants will pour in and prepare the way to secure a monopoly of the trading in Eastern Mongolia.

The present estimated population amounts to roughly some 6,000 souls, out of which some 10 per cent. are Japanese. It is only during the winter months that Shihpingkai shows any signs of commercial activity when produce is brought in here, as elsewhere, by native carts from the neighbouring districts, to be shipped southwards by rail. As it is the starting point for the trade marts of Eastern Mongolia, there is continually a stream of people arriving and going.

The present occupation of most of the Japanese residents with the exception of a few firms dealing in Japanese piecegoods and exporting of produce, is of a most despicable kind; medicine shops whose chief source of profit is the sale of morphia, pawnshops where extortionate interest is charged but no questions are asked as to where the goods to be pawned came from, gunshops where fire-arms and ammunition are sold to any one who can pay the price asked for, are to be found in the Settlement, and thrive at the expense of the natives.

The nearest Chinese town is Lishouhsien, situated thirty-five li north of Ssupingkai. Here a magistrate resides, under the jurisdiction of the Taotao of Taonanfu. The railway line will pass through Pamiencheng, a growing town boasting of 5,000 inhabitants on the main cart-road to Liaoyangchow. This latter city is one of the new marts in Eastern Mongolia opened up to international trade by virtue of the new Sino-Japanese Agreement. It stands on the right bank of the West Liao, which together with the East Liao form the dual head of the Liao River. It lies amidst a level plain sloping down on the western fringe, allowing this vulnerable portion of the town to ready flooding in time of heavy rain.

Forty years ago Chengchiatun was but a small village. The arrival of some Chinese interested in the cattle and horse trade marks the beginning of its growth. The immediate district is endowed with fertile soil, excellently adapted for agriculture, and the arrival of Chinese immigrants in increasing numbers has quickened the development of the place. In 1901 it was created a magistracy under the style of Liaoyang and five years later a river mart was opened near by at Sankiangkou, and this served to boom the junk traffic, whilst in 1913 it was made permissible for junks to go up the river a further seventy li beyond Sankiangkou, thus materially adding to its prosperity. The town has grown by degrees, and was not founded on a settled design, consequently there is a total absence of any shape of a design in building the town, and the layout of the streets is most irregular. From a village it was raised to a township, and from a township it has grown to a city. Its present population is somewhat under 40,000.

The city is some two miles in length and about a mile broad. There is no wall surrounding the town, but several of the produce dealers' and pawnbrokers' premises and compounds are enclosed with brick walls over 10 ft. in height, on which are mounted guns for protection against brigands. The principal Government Offices include the prefect's yamen, the tax-collectors' office, the Mongolian rent-collector's agency, the police station and the Court. Live stock fairs are held between the 8th and 11th moons of the old Chinese Calendar, but with the growth of agricultural produce the livestock trade has been universally affected.

The town is situated in the district often known by its Mongolian name, the Chelim region; it is linked up with cart roads on the north via Kiating (another of the new marts opened to international trade) with Taonanfu, on the south with Fakumen and Hsinmingfu, on the west with Chinchow via Paiyintalai (also now opened up to international trade) and on the east with Tsupingkai and other railway stations on the South Manchuria Railway. Thus the trade centre of the Eastern part of Eastern Mongolia is centred at Liaoyangchow, and with the construction of above mentioned railway section is the key to the mine of the latent natural wealth contained in Inner Mongolia.

The actual building of these fifty-two miles of iron road should proceed apace, for the country is flat and the only piece of work attended with engineering difficulty is the railway bridge over the Liao, which lies about a mile to the east of Liaoyangchow. There seems no doubt that owing to the natural resources of the district through which the railway will pass that it will be put on a paying basis as soon as it is completed. Liaoyangchow even before it become opened up as an International mart had a Japanese population of over 100 souls, and Samunchang a few Japanese of the pedlaring classes. No doubt these numbers will be increased greatly this year.

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**Ssupingkai-Chengchiatun Railway.**—Mr. S. Hori, Acting Director of the South Manchuria Railway Co., Bureau of Technics, has made the following observations regarding the delay in getting this projected line under way:—

It appeared at the time of signing the Agreement that the first thing was to appoint the Director of the Railway on China's part, and that the appointments of the chief engineer and other principal officials were to follow before the work of construction was begun. No official appointment of the Director has yet been bulletined. As matters stand, it is unlikely that the construction work will be begun this Spring. Unless the appointment of the Director and the Chief Engineer takes place during the present month of February, the construction work may be delayed one year, and the time for opening the line to traffic correspondingly put off. No thorough surveys have yet been made and some time must be allowed for the purchase of construction supplies. In the mean time cold weather will return, making the starting of work impossible. —*Manchuria Daily News.*

Later intelligence reports the appointment of Mr. Wu-wu (Director of the Kirin-Changchun Railway) to the additional post of Director of the Ssupingkai-Chengchiatun Railway.

The South Manchuria Railway Co. is hard put to it for rails as it has used all rails in stock, and finds it difficult to obtain a fresh supply either from abroad or from Japan. The rails of disused sections have been taken up to meet the more urgent requirements. The Railway Company negotiated with the Government Steel Works, Edamitsu, for a supply of rails, and was refused, but Baron Nakamura (the Company's President), who had been the reorganizer and President of the steel works for 13 years, induced the Works to furnish about 30 miles of rails. As to the 20 miles of rails wanted for the extension of sidings, etc., orders have been sent to the United States. On their arrival these rails will be exchanged for part of the lighter rails now on the Railway lines and the latter will be used for sidings and at the Collieries.

**Inner Mongolian Survey.**—According to the Chinese organ of the Mukden Government, the scheme to construct a railway between Chinchow and Dolonor via Chaoyang and Jehol, about 367 miles in distance, has made good progress, and the first surveys have already been finished.

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**Kirin-Changchun Railway.**—As negotiations are about to be opened at Peking over the Kirin-Changchun Railway Loan Agreement, the Japanese residents at Kirin are said to have passed resolutions to the following effect:—

China shall be asked to accept all the demands advanced by Japan when the negotiations for the Railway Loan were originally taken up. The Kirin-Changchun Railway shall be raised to a similar standard of efficiency as the S. M. Railway. The poles of the Railway service telegraphic system shall be utilized for the establishment of a telegraphic service between Changchun and Kirin, and the Japanese post office at Kirin shall be opened to telegraphic traffic, or else the Kirin Railway Station shall be made to take up public telegraphic traffic in Japanese *kana* syllables.

The resolution has been presented to the Foreign Office, Tokyo, and the Japanese Legation through the Japanese Consulate, Kirin.

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**S. Manchurian and Shantung Railway Agreement.**—The through passenger traffic agreement between the South Manchuria Railway Co. and the Shantung Railway was signed on February 5. The Dairen Kisen Kaisha also signed and the actual opening of the through passenger traffic is expected to take place before the end of the month. The steamship lines available will be the S. M. R. Co. Dairen-Tsingtau-Shanghai route and also the Dairen Kisen Kaisha route.

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## SHIPPING

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**U.S. Building Ships.**—American shipyards have under construction now more vessels than ever before were building in the United States, to add to an American merchant marine whose gross tonnage already is the largest in the country's history, said a report issued by the commissioner of navigation. Ninety-eight merchant vessels of more than 3,000 tons are being built or are under contract. These with many small vessels being constructed have a total tonnage of 761,511. The total tonnage of ships under the American flag, numbering, 26,888, Dec. 1, was 8,444, 258, a net gain of more than 50,000 tons since July 1. There was a net gain of 187 ships, despite 272 vessels lost, abandoned, and sold to aliens. Twenty-three came under the American flag from foreign registry and 436 were completed in shipyards.

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**American Naval Menace.**—The *Osaka Mainichi* says self-preservation or protection can become a cause of war. The programme of expansion of the American army and navy is about to be carried into practice. The necessity for it is attributed to the opening of the Panama Canal and to the need of securing supremacy on the Pacific, and this is explained as a measure of self-preservation. But when a country with inexhaustible wealth like the United States begins to build a formidable army and navy, she cannot but become a menace to others. It has been the long cherished desire of America to establish herself in China on the pretext of solving the Pacific Ocean problem. If therefore the armament expansion is part of the Pacific problem, it cannot but be looked upon as a direct threat to this country.

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**Ferry Boat for Canton.**—A 40 ft. motor ferry boat has been built by Messrs. Alex Ross and Co. in their yard at Kowloon for the Pak Hok Tong Launch Co. of Canton. The boat, which was designed by Captain Lukmanoff, and has been named the "White Crane," is engined with a Scripps 26 h.p. motor, and is provided with an electric starting system which also provides for the electric lighting of the boat. All the appointments are quite up to date, and the general design and seating arrangements present many practical novelties and improvements, all having special regard to the handling of boat and passengers in the crowded river between the Shameen and Pak Hok Tong. On the trials it accomplished a speed of 8.6 knots over the measured mile, which is considerably over the contract speed. The "White Crane" will be put into immediate service.

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**N.Y.K. to Raise Rates.**—The N.Y.K. has decided that the freight rate in free vessels on the American line will be raised 20 per cent. from April 1. But the rates on valuable articles, less weight and bulk, will be unchanged. The charge of 100 pounds of raw silk is to be $2, hemp braid $1.87½ and waste silk 65½ sen.

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**Ice Breakers to Vladivostock.**—A Chinese correspondent at Tientsin states that the Hai-ho Conservancy Board, having found it easy to keep open the river Pei-ho this year with two ice-breakers, has chartered the other two ice-breakers to the Kailan Mining Administration. These two steamers have gone to Vladivostok where they will be employed to assist the Russian ice-breakers in keeping open the two channels into the port, the one being used for ingress and the other for egress. The charter-price is not known.

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**Japan's Tonnage Decreases.**—According to an investigation carried out by the Department of Communications, the total number of vessels which entered and left ports in Japan during the year 1915 was 8,975, with a total tonnage of 19,634,882. This is a decrease of 3,930,601 tons from that of last year.

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**Activity in Japan's Shipyards.**—The shipbuilding industry in Japan is now in a very prosperous condition, all shipbuilding yards having orders to their full capacity. The number and tonnage of ships, which are now in the course of construction and for which shipbuilding subsidies have been granted are as follows:—

| Name of Dock | Number of vessels | Tonnage |
|---|---|---|
| Mitsubishi Dockyards. | 10 | 41,299 |
| Kawasaki Dockyards. | 8 | 38,580 |
| Osaka Iron Works ... | 14 | 42,340 |
| Uraga Dock Co ... ... | 5 | 10,640 |
| Harima Dockyards ... | 2 | 2,300 |
| Fujita Dockyards ... | 1 | 2,100 |
| One Dockyards ... | 1 | 1,250 |
| Total ... ... ... | 35 | 138,559 |

Besides, these shipbuilding yards are receiving large orders for future building, work on which has not yet been started. It is reported that the scarcity of shipbuilding materials is now being keenly felt, the present stock on hand being sufficient for only a very short period. The builders have to import the materials as the work advances, but the difficulty is that import from England is now practically impossible, while the American materials are either unsuitable for use in Japan because of the section length, or are too expensive. Vessels for transportation are also scarce. Already some shipbuilding yards are experiencing great difficulty in obtaining materials. Moreover, the present prosperity in this industry has caused a great demand for skilled shipyard laborers, especially for first class men. This has resulted in competition among the shipyards to secure these laborers. Consequently, wages have risen. The present rate is from one yen to one yen and a half per day, but it is expected that the rate will further increase in future.

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**Japan's Mercantile Fleet.**—Japan now occupies third place in the world's shipping according to a writer in the Japan Times. Lloyd's Register apportioned the world's tonnage before the war as follows, in millions of tons:—

| | | | |
|---|---|---|---|
| British ... ... | 21 | French ... ... | 2¼ |
| American ... | 6 | Italian ... ... | 1¾ |
| German ... ... | 4½ | Japanese... ... | 1½ |
| Norwegian ... | 2½ | Dutch ... ... | 1½ |

Russia, Sweden, and Austria each have a million, and Spain and Denmark slightly less. The biggest sailing fleet belongs to Norway, while Japan's large junk and schooner fleet is not included in the returns, which take count only of vessels over 300 tons.

Mr. Wakamiya, of the mercantile marine bureau of the Department of Communications, has made the following statement regarding Japan's increase in Shipping facilities:—

Prior to the outbreak of war, the total tonnage of mercantile ships in the world was about 49,000,000 of which some 14,000,000 tons must now be deducted as so many ships are either destroyed or detained in enemy ports, while many others are employed for military uses. Before the war, twenty-three ships on an average used to come to Japan monthly from Europe, but the number is to-day less than half, while the American route is almost monopolised by Japanese shipping.

At present there are eleven periodical sailings of Japanese ships, eleven special ships on the European service, while the tramp boats, owned by Japanese, plying from one end of the globe to the other, number over sixty aggregating 400,000 tons. Japan is now 3rd in rank in the world's shipping, in contrast to the seventh place she held before the titanic war broke out in Europe. The immediate need for Japan is experienced and well disciplined seamen for this enormous expansion of her mercantile marine.

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**Progress in Shipbuilding.**—Japan now has 2,132 vessels over 20 tons with a total tonnage of 1,604,900 while the number of vessels over 1,000 tons is 416 with a total tonnage of 1,331,308. The details are as follows:—

| Ships | | Number | Tonnage |
|---|---|---|---|
| 20 tons to | 100 tons | 1,036 | 47,143 |
| 100 ,, ,, | 300 ,, | 438 | 80,002 |
| 300 ,, ,, | 500 ,, | 92 | 36,044 |
| 500 ,, ,, | 1,000 ,, | 150 | 110,403 |
| 1,000 ,, ,, | 2,000 ,, | 124 | 188,605 |
| 2,000 ,, ,, | 3,000 ,, | 120 | 206,017 |
| 3,000 ,, ,, | 4,000 ,, | 79 | 263,946 |
| 4,000 ,, ,, | 5,000 ,, | 27 | 119,007 |
| 5,000 ,, ,, | 6,000 ,, | 31 | 175,547 |
| 6,000 ,, ,, | 7,000 ,, | 13 | 82,078 |
| 7,000 ,, ,, | 8,000 ,, | 10 | 76,405 |
| 9,000 ,, ,, | 10,000 ,, | 6 | 57,039 |
| Over 10,000 tons | | 6 | 72,604 |

It is interesting to note that all this fleet has been created since 1884. For a period of 218 years—from 1635 to 1853—the building of vessels over 50 tons net was prohibited, and it was not until the arrival of three U.S. ships at Uraga under Commodore Perry the government was awakened. A few ships of European type were built by some of the daimyos, but as the Japanese shipbuilders were ignorant of the proper methods they only imitated the outside appearance. In 1845 a Russian man-of-war was washed ashore and sunk by earthquake. The Russians, with the assistance of some Japanese shipbuilders, started building a wooden schooner at Heda,

which gave the Japanese their first opportunity of observing the actual construction of European vessels. It was not, however, until 1884 that Japan really began to build ships of iron, while the first steel vessel was laid down in 1890.

**Refloating P. & O. Nile.**—The work of refloating the P. and O. liner, Nile, which sank near the island Iwai, in Yamaguchi prefecture, will be started Tuesday. The Mitsu Bishi Company is in charge of the work. The Department of Communications has announced that ordinary steamers will not be permitted to pass through the region during the period.

**Taikoo Dock is Busy.**—Delivery is expected to be made this month of one or both the two steamers which are being constructed at the Taikoo Dockyard, Hongkong, to the order of the Straits Steamship Company. Upon their being launched, it is reported that the ways will be used for the construction of two new vessels for the China Navigation Company.

**China Imp. & Exp. Lumber Co. in Yangtsze Trade.**—The trial trip of the new steamer Tsangtah, built by the Kiangnan Dock and Engineering Works for the China Import and Export Lumber Co., Ltd., for the Yangtsze River trade, was highly successful, an average speed of 11.2 knots being made. The new steamer is especially designed for the economical handling of lumber and bulk cargo. It has winches and equipment to swing 15 tons at a time, and a tonnage of 767.47; net 294.15. Its length is 215 feet over all, beam 35.2, depth of hold 13.9, designed to carry 750 tons drawing 9 feet of water and 1,100 tons on 11 feet. The vessel's maiden trip bore out the expectations of the company whose "three tree" flag is now well known on the river.

**Diesel Engine Tanker's Long Trip.**—A remarkable tribute to Diesel-engine, oil-burning oil tankers is paid in the recent report of the Anglo-Saxon Petroleum Co., an English oil shipping concern, which now operates nine tankers of this type ranging from 500 to 2,200 horsepower.

Referring to the "Selene," a 2,200-horsepower vessel, in service since the fall of 1914, the report states the vessel recently completed a 14,300-mile voyage without taking on fuel at any intermediate port, proceeding from Cardiff, Wales, to Port Arthur, Texas, thence via the Panama Canal to North China and thence to Singapore.

"This would not be an economical procedure in the case of a coal-burning vessel," reads the report, "for it would mean giving over a considerable portion of the ship's space to fuel bunkers. The master of the 'Selene' had orders to replenish the bunkers at Shanghai, but he found his consumption of oil fuel on the run across the Pacific so moderate no additional fuel was needed. All told the 'Selene' steamed 54 days with a full cargo of oil and 12 days on ballast only without replenishing her fuel supply.

"It might have been reasonably expected that, in the course of the first six months running, defects in the machinery would become manifest, but the 'Selene' and her sister vessel, the 'Artemis,' were sent across the North Atlantic and Pacific in the depth of winter, as soon as they left the builder's hands, on runs which would probably have not been considered in the case of a steam vessel."

**China Mail Adds Capital.**—The China Mail Steamship Co., has decided to increase its capital stock from $2,100,000 to $5,000,000, owing to the many stock subscriptions coming in, and also to the end that the company may more readily acquire additional steamers. Look Tin-eli, president of the Canton Bank, of San Francisco, and president and general manager of the new company, has just announced the appointments of an assistant to the president and general manager and a general passenger agent.

**Japanese Gain on Pacific.**—The following figures show the number of ships and net tonnage, Japanese and American, in Pacific Coast ports and outward and inward bound in the Oriental trade in November 1914 and 1915. The figures were compiled by the foreign trade department of the San Francisco Chamber of Commerce:

November 1914 American steamers, 6, tonnage 45,315; Japanese steamers, 22, tonnage 89,932.

November 1915 American steamers, None, Japanese steamers, 42, tonnage, 141,262; Increase, Japanese 20, tonnage, 51,330; Per cent increase Japanese steamers 99.9; Japanese tonnage increase 57.0 per cent. It is reported there are from 25 to 40 Japanese steamers being built to secure control of the Pacific Ocean commerce.

**New M. M. Steamer Porthos.**—The S.S. Porthos belonging to the Messageries Maritime Co., which left Marseilles on November 28, on its maiden trip, arrived in Shanghai early in the month bound for Japan. This vessel, a sistership to the S.S. Athos, was also built in Dunkirk and has the following dimensions:—Length, 530 feet; breadth, 62 feet; depth, 45 feet; and displacement, 18,133 tons.

The engines develop 9,000 horse-power. An average speed of 17½ knots was realized. The first-class portion of the ship with dining-room, music room, smoking room finely decorated, can accommodate 94 passengers. The second and third classes are fitted out with spacious cabins for 96 and 100 passengers respectively. The between decks are able to take over 1,000 persons. The cargo is loaded into five hatches with electric cranes of the latest type. The owners have devoted close attention to the matter of life-saving appliances on board. A great number of life-buoys can be put overboard merely by handling an electric switch. The hull of the ship, entirely of steel, is divided into ten water-tight compartments. All of them can be shut simultaneously from the bridge by the officer of the watch in case of danger, so that the Porthos is practically unsinkable.

## FINANCE

**Philippine National Bank.**—As soon as the officers and board of directors have been appointed by the governor general the organization of the Philippine National Bank will be undertaken immediately. The officers and board of directors will be named by the governor general within a month at the latest, and as soon as they are ready for business, the appropriation of the government is ready for instant use, while the treasurer will turn over to them the agricultural bank, according to the terms of the act. The bill as passed on February 5, provides for the establishment of two branches or agencies in the United States, as may be determined by the board of directors, and authorizes the establishment of branches in foreign countries. Under a proposal made by the governor general, P10,100,000 of government funds needed to supply the capital of the institution insofar as the bill stipulates that the government shall subscribe to the stock issue will be secured as follows: P1,800,000 from the assets of the agricultural bank, P1,300,000 from the insular surplus at present in the treasury, P2,000,000 from insular trust funds, this amount to be made available for the payment of the stock subscription during the present year, and P5,000,000 from insular treasury funds to be made available at the rate of P1,000,000 per year during the next five years. The question regarding the funds which are to come from the insular treasury was not decided insofar as the manner in which they are to be made available is concerned. If they are appropriated for the purpose, the insular surplus will be reduced in proportion, but if the chief executive can be authorized to invest the sums from the surplus in stock of the bank, it is believed that this seeming shrinkage of the surplus can be avoided.

**P. I. Customs Decrease.**—Figures given out early in the month at the Manila custom house bearing upon collection for January 1916 show that collections for the port of Manila amounted to P875,353.06 as against P955,256.01 during the same month in 1915, thus leaving a decrease of P79,902.95. A slight loss is also reported from Iloilo where the collections for last month amounted to P102,649.86 as compared with P105,793.03 in January 1915.

**China's Communications' Budget.**—According to the Budget of the Ministry of Communications for 1916, the following amounts of estimated expenditure have been provided for the extension of its activities in the three principal departments:—On account of railways $11,142,559; on account of telegraphs $2,939,380; and on account of posts $439,950. Total $14,521,889.

**Japan's Russian Bond Issue.**—The issue of Russian bonds of Y50,000,000 as advertized in the Tokyo and Osaka papers are for one year and bear interest of 5 per cent. per annum, that is, they are issued at 95 and redeemed after a year at par. Although the subscription is called for up to the 12th inst., it is generally believed that the general subscription will not reach that amount, in which event the underwriting banks will be saddled with the balance. The bankers are to receive 1 per cent as commission for underwriting. Therefore, the Russian Government have to pay 6 per cent in all. It is also reported that the money thus raised will be deposited with these banks as payment for the war material to be purchased here.—*Japan Advertiser.*

**Committee Approves new Banks in China.**—The bills providing for the establishment of the Japan-China Bank and the Bank of Manchuria were adopted at a meeting of the committee in charge of the measure in the House of Representatives February 14. The Bill for establishing the Manchurian Bank is composed of 38 articles and aims at facilitating the financial working for the development of South Manchuria and the eastern part of Inner Mongolia. The Bank is to be capitalized at Y10,000,000, which is to be divided into 200,000 shares. Its head office is to be located at Mukden. The Directorate will consist of a president, a vice-president, and three directors, who are all to be nominated by the Government from amongst the shareholders. Three auditors are to be elected at a general meeting of the shareholders. The Bank is to engage in the loan service on the security of real estate, its leasehold, railways, well-secured credits, national bonds, debentures, negotiable instruments, and goods, the deposit service, the discounting of bills, the collection of charges, the remittance service, the trust business, the transactions in bullions, the exchange of currencies, the agency for other banks, and the issue of debentures. The Government undertakes to supply the Bank for ten years with any deficit that the Bank may have to face for distributing an annual dividend of 6 per cent.

The Bill relative to the proposed establishment of the Sino-Japanese Bank has for its sole object the cementing of the economical relations between Japan and China and the

development of the Japanese economical interests in China. The Bank is to be established at Shanghai on a capital of Y20,000,000 which is to be divided into 200,000 shares. The Directorate is to be composed of a president, two vice-presidents, three directors and three auditors. A vice-president, a director, and an auditor may be Chinese. The Bank is to be authorized to issue transferable debentures, appended with interest coupons, of denominations above Y10, up to the amount of 10 times its paid-up capital. The workings of the Bank are to lie under the supervision of the Government. The Government is to furnish the Bank for ten years with funds, if necessary, to enable the Bank to distribute an annual dividend of 6 per cent.

**Japan's Specie Holdings.**—Owing to the trade balance last year which was favorable to Japan the holding of specie has greatly increased. It is reported that the amount at the end of last year was 512,000,000 yen in all, showing an increase of 171,000,000 yen compared with the year before last. Of this amount 130,000,000 yen was held in Japan, an increase of 2,000,000 yen and 382,000,000 yen abroad, an increase of 169,000,000 yen over the previous year. Classified as to holders, the Government held 152,000,000 yen showing an increase of 103,000,000 yen over the year before, and the Bank of Japan 360,000,000 yen, an increase of 68,000,000 yen.

**Mysore's Improvement Budget.**—The Mysore Budget estimates for the year 1915-16, as provisionally passed, were for a revenue of Rs. 2,74,02,000 and an expenditure of Rs. 2,73,70,000 under service heads, leaving a surplus of Rs. 32,000. There was further a grant of Rs. 66,35,000 distributed as under for special capital works:—

| | Rs. |
|---|---|
| Cauvery Reservoir and allied works | 25,00,000 |
| Capital outlay on State Railways and Steam Tramways ... ... ... | 26,35,000 |
| Subsidised or Aided Railways ... | 7,00,000 |
| Bangalore Electric Tramways ... | 6,00,000 |
| Cauvery Power Scheme, IV Installation ... ... ... ... ... ... | 2,00,000 |
| Total Rs. | 66,35,000 |

**China's Banks Prosper.**—A Chinese Press report states that the Ministries of Finance and Communications have received reports from the Bank of China and the Bank of Communications showing the profits of the Bank of China during the twelve months ended December 1915, to have increased $1,200,000 over the previous year, while the profits of the Bank of Communications during the same period show an increase of $800,000.

**Tokyo Bills Cleared Show Big Increase.**—There was a big increase in the amount of bills cleared in the Tokyo Clearing House for the latter half of the year, the increase being more conspicuous of late. According to the statement of the Tokyo Clearing House, the amount of bills cleared from the beginning of the year till December 25 reached 5,006,000,000 yen, the highest on record for many years past. As about 25,000,000 yen on the average is being cleared daily at present, the amount for the whole year is expected to reach over 5,200,000,000 yen, an increase of 700,000,000 yen compared with last year. The following shows the bills cleared in Tokyo Clearing House in past years:—

| | |
|---|---|
| 1905 ... ... ... | Y 256,000,000 |
| 1906 ... ... ... | 350,000,000 |
| 1907 ... ... ... | 354,000,000 |
| 1908 ... ... ... | 296,000,000 |
| 1909 ... ... ... | 348,000,000 |
| 1910 ... ... ... | 384,000,000 |
| 1911 ... ... ... | 270,000,000 |
| 1912 ... ... ... | 412,000,000 |
| 1913 ... ... ... | 436,000,000 |
| 1914 ... ... ... | 449,000,000 |
| 1915 ... ... ... | (Estimate) 520,000,000 |

**Japan to Float Railway Bonds.**—The Japanese Government, with the object of turning idle capital at home to good account has decided to float railway bonds of about Y20,-30,000,000 at home. The bill will be presented to Parliament as a supplementary Budget.

**Japan Paying Loans.**—The Government presented to the Imperial Diet the Supplementary Budget relative to the inclusion of Y38,600,000 in the sinking fund for the conversion of national loans, both foreign and domestic. Part of the 5 per cent. French railway bonds of Y77,400,000 redeemable within 12 years is to be paid back out of the sinking fund.

As to the flotation of the new domestic railway bonds, Mr. Kataoka (Chairman of the Budget Committee) stated that the bonds were to be issued at Y96 and Y97 net with 5 per cent. interest and to be made redeemable within 15 years.

**P. I. Customs Decrease.**—Gross customs collections for all ports in the Philippines except Balabac, for December, show a net decrease of P29,013.63 as compared with 1914, while the gross internal revenue collections on imported merchandise show an increase of P113,299.38.

## MINES AND METALS

**Seoul Mining Co., Korea.**—The record of gold mined by the Seoul Mining Co., operating Tul Mi Chung and Suan, for the past 5 months is as follows:

Results for January, 1916:—Ore crushed, 18,745 tons.

| | |
|---|---|
| Value bullion recovered ... ... | Y167,477 |
| Value concentrates recovered ... | 155,631 |
| Total Receipts ... ... ... | Y328,108 |
| Operating costs (Approximate) ... | Y100,000 |
| Operating earnings (Approximate) | 223,108 |

The following tables give the result of working from September to December, 1915:—

SEPTEMBER

| | |
|---|---|
| Total operating receipts ... ... | G. $58,912 |
| Less operating costs ... ... ... | 27,500 |
| Net operating earnings ... | G. $31,412 |

OCTOBER

| | |
|---|---|
| Total operating receipts, Suan mine | G. $48,959 |
| Total operating receipts, Tul Mi Chung mine ... ... ... ... | 19,300 |
| | 68,259 |
| Less operating costs (approximate) | 45,000 |
| Net operating receipts ... ... | G. $23,259 |

NOVEMBER

| | |
|---|---|
| Total operating receipts, Suan mine | G. $59,095 |
| Total operating receipts, Tul mi chung mine ... ... ... ... | 28,955 |
| | 88,050 |
| Less operating costs (approximate) | 55,000 |
| Net operating earnings ... | G. $33,050 |

DECEMBER

| | |
|---|---|
| Total operating receipts, Suan mine | G. $100,434 |
| Total operating receipts, Tul mi chung mine ... ... ... ... | 22,550 |
| | 123,984 |
| Total operating costs (approximate) | 65,000 |
| Total operating earnings ... | G. $57,984 |

JANUARY, 1916

Tons Ore Crushed, 16,745 tons.

| | |
|---|---|
| Value Bullion Recovered ... | Yen 167,477.00 |
| Value Concentrates Recovered | Yen 155,631.00 |
| Total Receipts ... ... | Yen 323,108.00 |
| Operating Costs (approximate) | Yen 100,000.00 |
| Operating Earnings (approximate) | Y223,108.00 |

**The Luhokow Coal Mines.**—A mandate issued on February 12 appoints Mr. Chang Cheng-fang, who is at present Chinese Director-General of the Fu Chung Kung Shih to be Director of the Luhokow Coal Mines in Honan. Originally, these mines belonged to a British concern, but they were later converted into a Chino-Belgian enterprise. The mines, which are situated in Changtehfu, are now entirely owned by Chinese capitalists with a certain proportion of capital supplied by the Central Government and the Honan provincial government.

**Japanese at Hangchow.**—Reports are that an enterprising Japanese is about to commence an iron foundry in the Settlement for the manufacture of silk-weaving and pattern-cutting machinery, of which at present quite a lot is imported from Japan.

**Rich Silver Mine.**—A silver mine at Pao-ching, Honan, has just been discovered. The ore contains 25 per cent of silver and 50 per cent of zinc, reports a vernacular paper. The local gentry are arranging for capital to operate the mine.

**Japan's Hardware Market.**—The effects of the war are daily enhanced in the hardware market and buyers are compelled to pay double, or in some cases three times, the prices paid last year. Enamelled hollowware is heavily demanded not only by British India, the Dutch Indies, and other Asiatic countries, but by Russia, France, and other European countries, which before the war sold such goods to Japan. Accordingly the Tokyo Hollowware Wholesalers' Association passed a resolution a few days ago that prices would be raised by 30 per cent.

Aluminium, copper, tin, and other ware is rising. Agricultural implements also have been affected by the boom in the metal market and there is a similar boom going on at the expense of farmers.

**F.M.S. Gold Production.**—The gold production in the F. M. S. during the last year amounted to 17,446 ozs. and was valued at $67,604. In 1914, the figures were 14,272 ozs. and $55,306 respectively.

**Tungsten in Japan.**—A very rich vein of tungsten has been discovered in a long range of hills in the Yamaguchi prefecture. According to the investigations conducted by the expert despatched by the Tokyo Imperial University, the vein now discovered is probably the largest ever found in the East and the ore obtained there is of very excellent quality. Experts from the Department of Agriculture and Commerce, too, are now on the spot to ascertain the extent of the vein and the quality of the ore obtained. In view of the increasing value of the ore as munition material the Government, it is learned, will undertake the working of the mine on its own account, instead of permitting private enterprise to prospect the ground.

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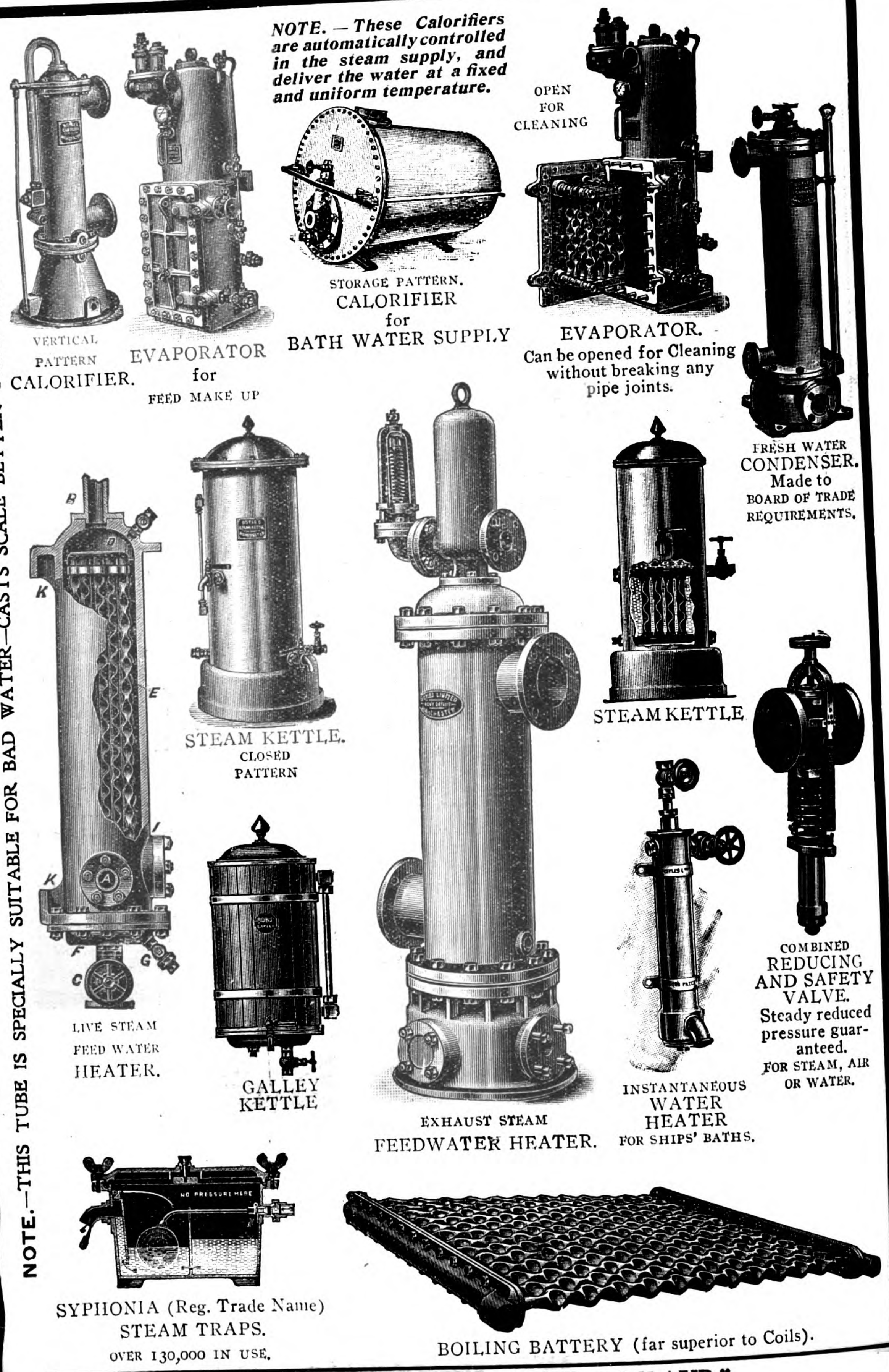


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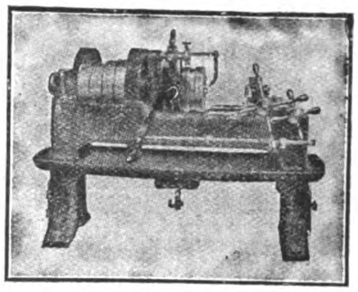

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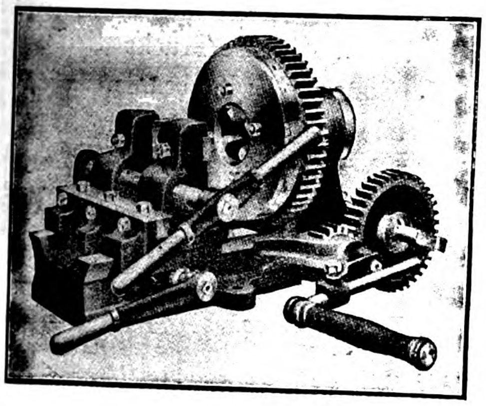

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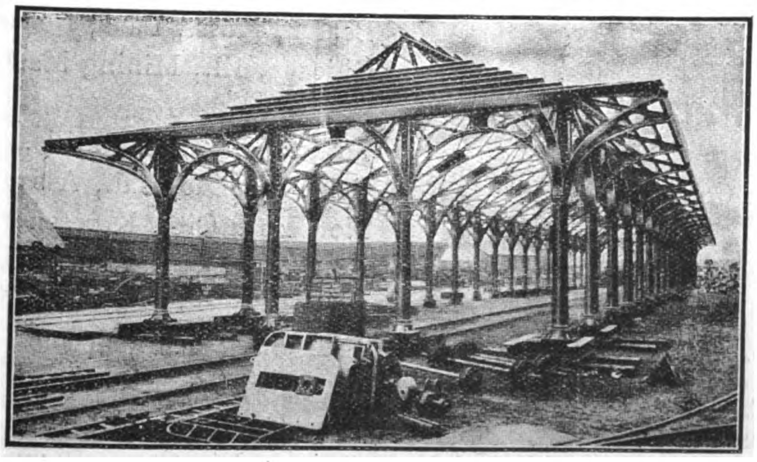

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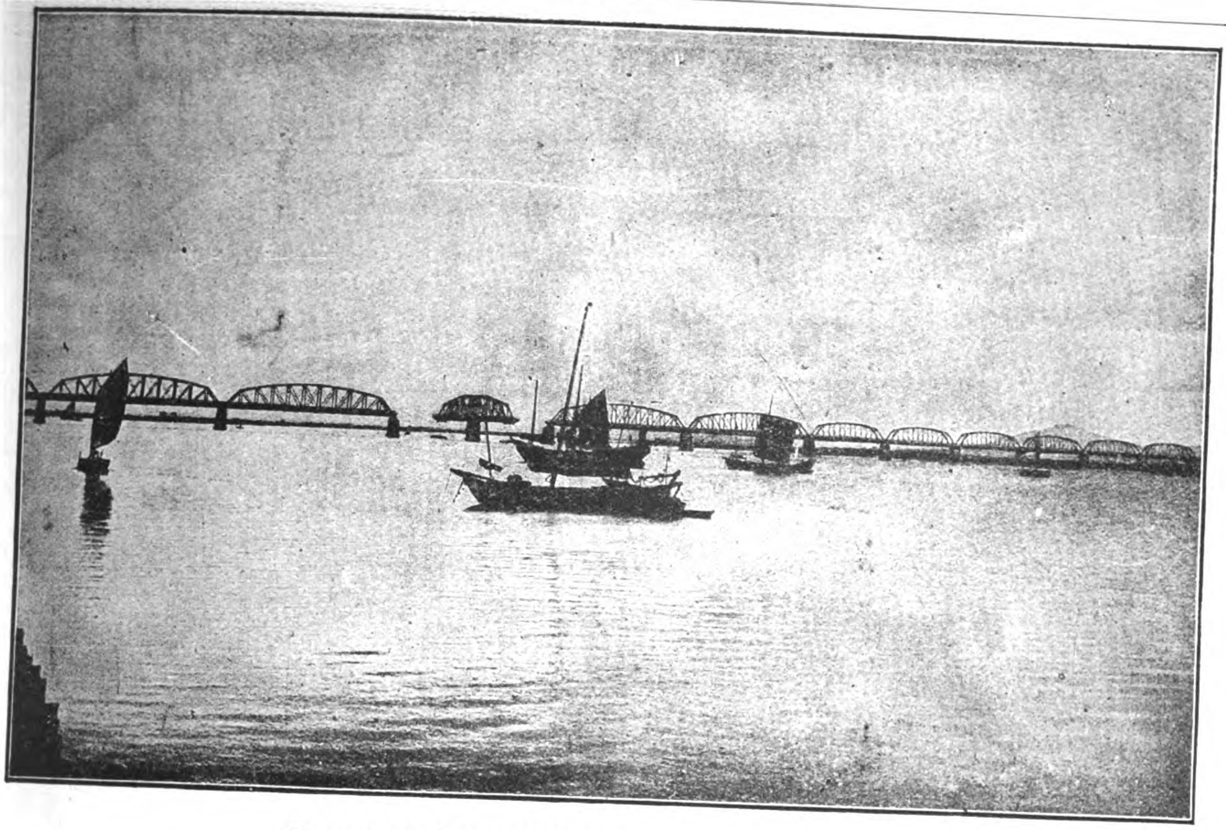

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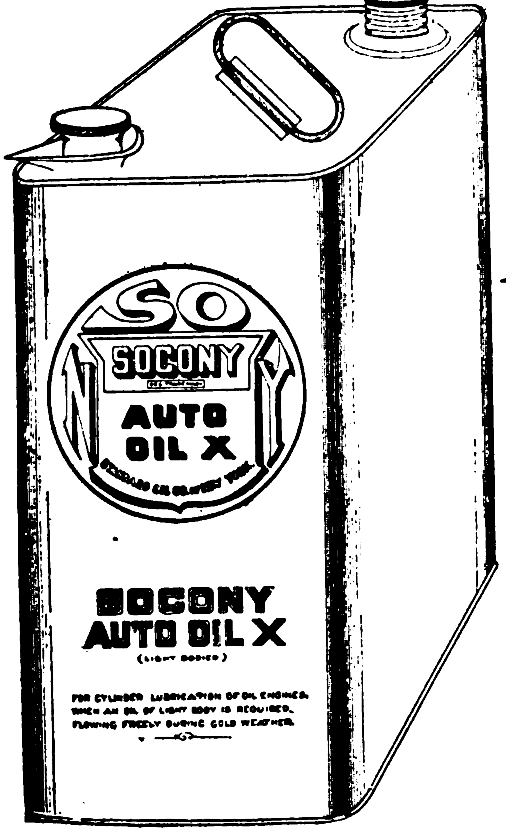


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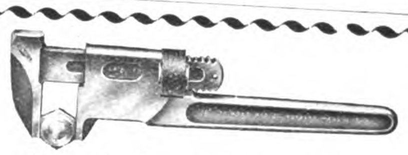

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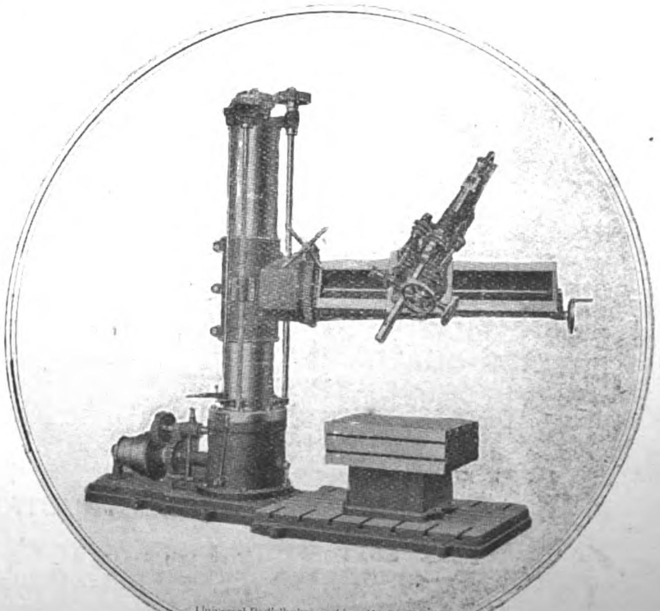

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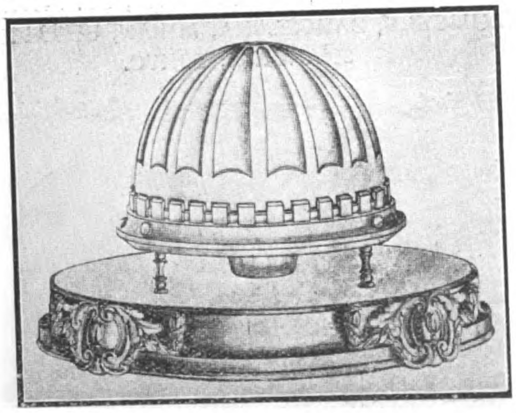

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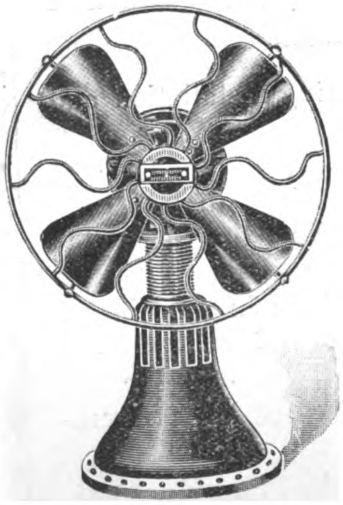

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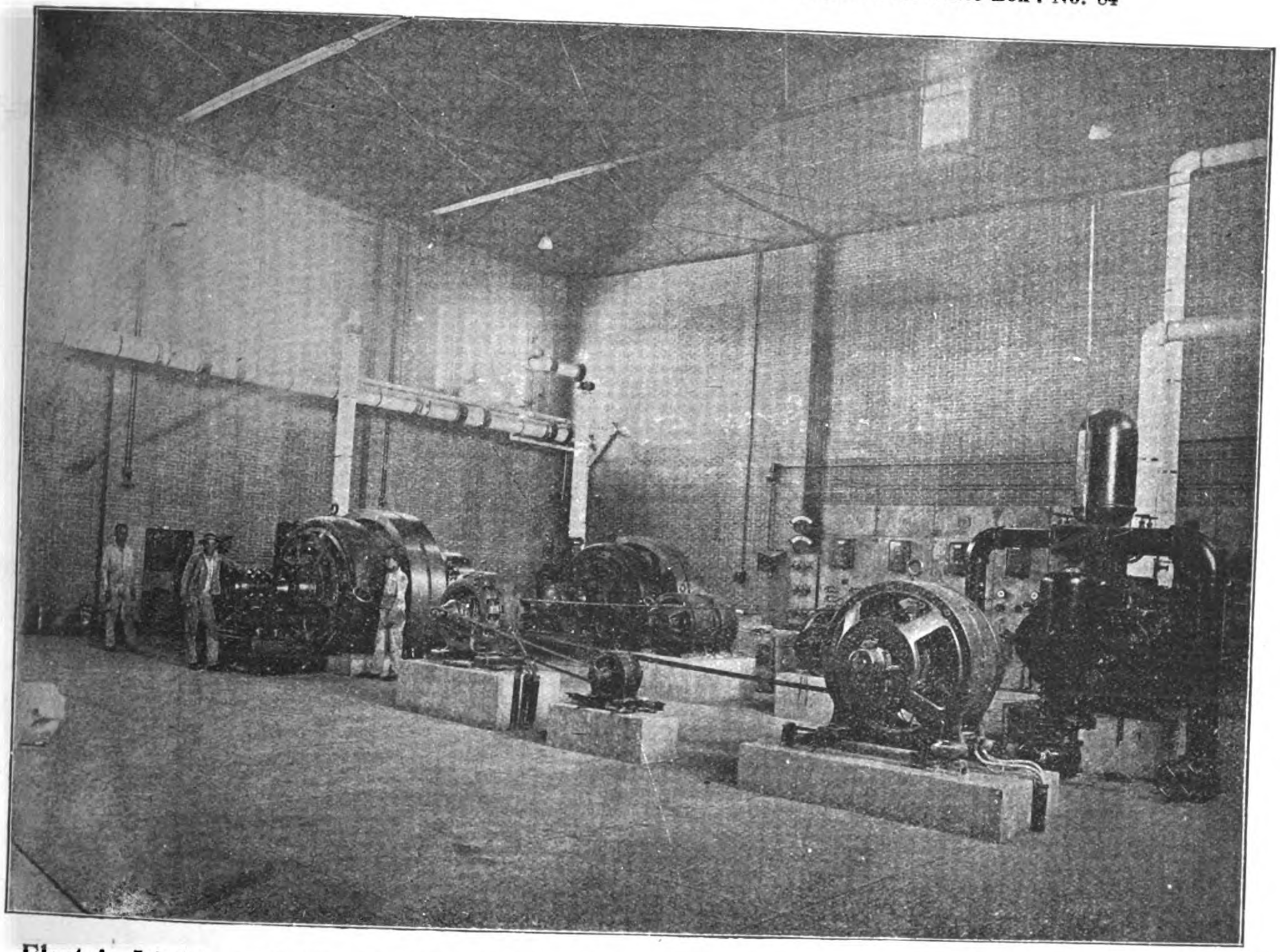

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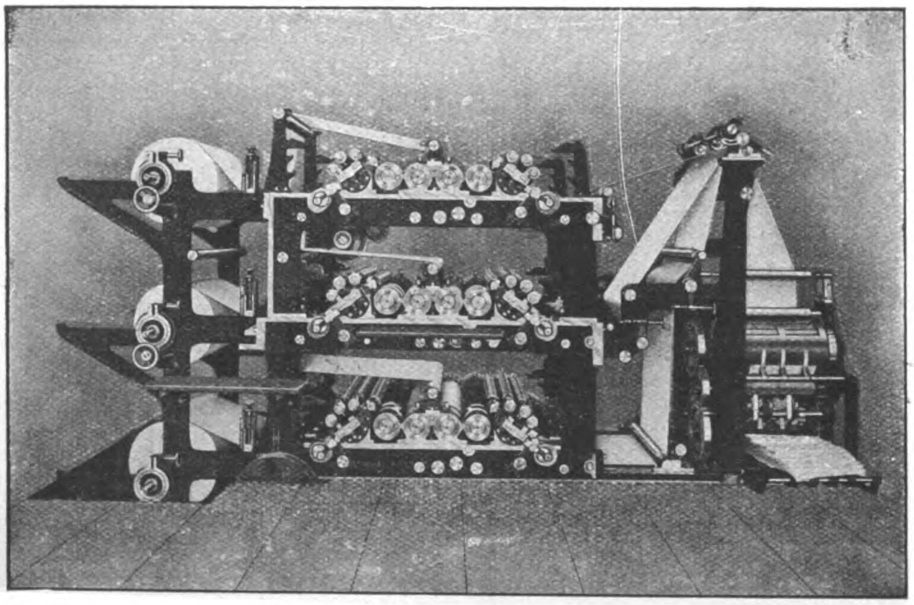

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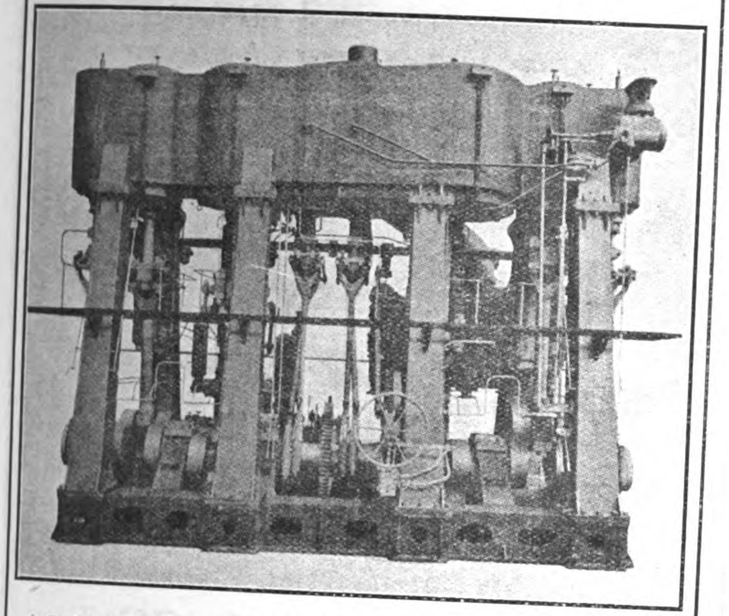

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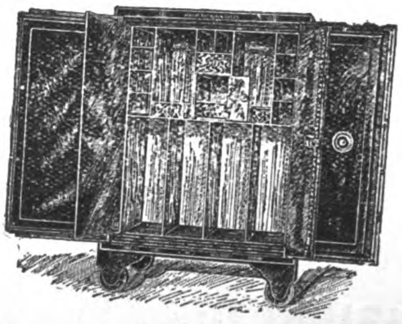

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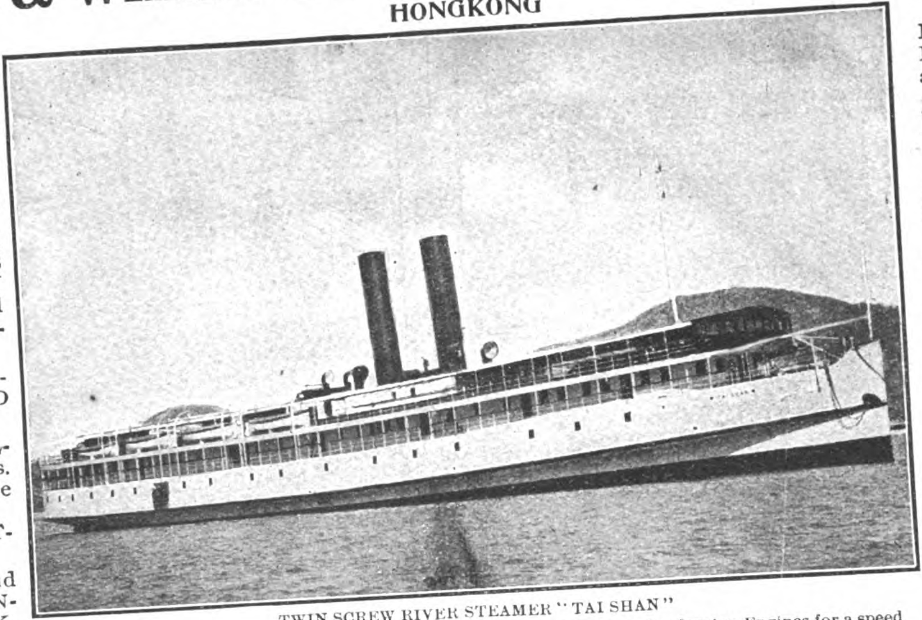

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|---|---|---|---|---|---|
| | | | | *Springs* | *Neaps* |
| | *Feet* | *Feet* | *Feet* | *Feet* | *Feet* |
| **KOWLOON** | | | | | |
| No. 1 Dock, Kowloon | 700 | 86 ft. top / 70 ft. bottom | 30′ | 7′ 6″ | 3 |
| No. 2 Dock, Kowloon | 371 | 74′ | 18′ 6″ | 7′ 6″ | —— |
| No. 3 Dock, Kowloon | 264 | 49′ 3″ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 1, Kowloon | 240 | 60′ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 2, Kowloon | 220 | 60′ | 12′ | 7′ 6″ | —— |
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| Cosmopolitan Dock | 466 | 85′ 6″ | 20′ | 7′ 6″ | —— |
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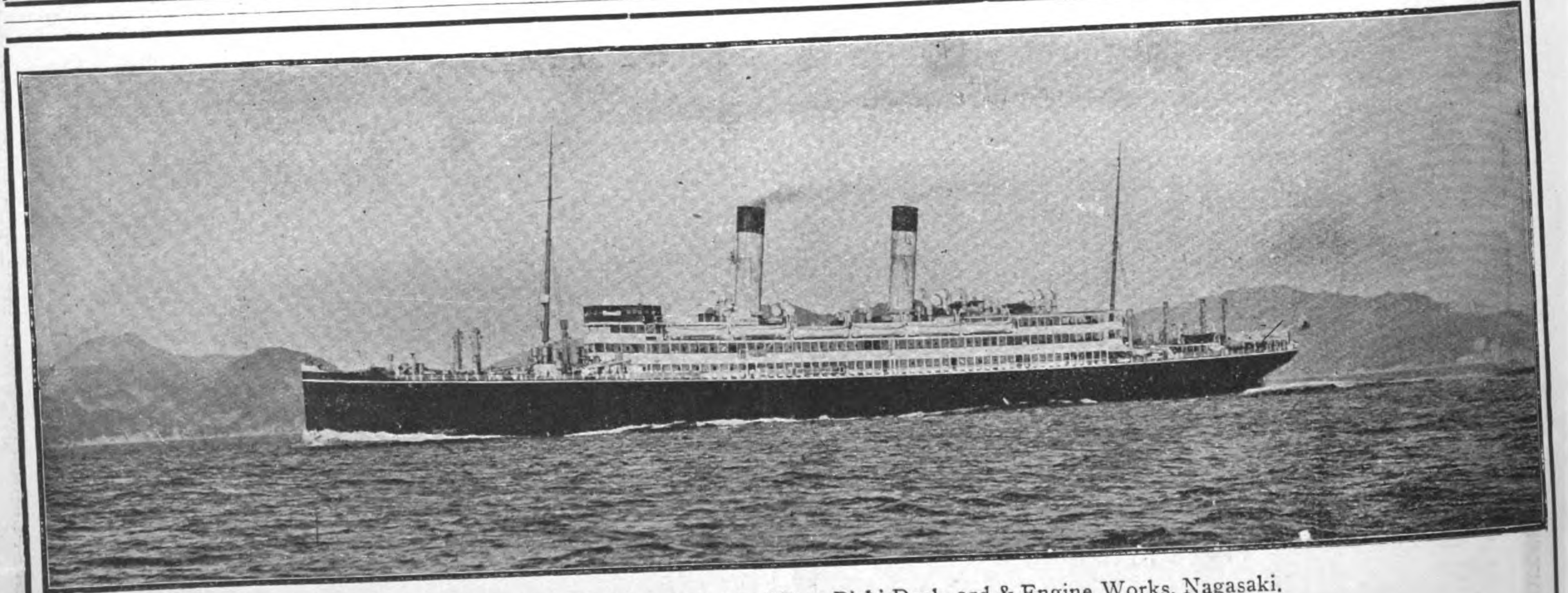

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|---|---|---|
| Extreme Length | 523 | Ft. |
| Length on Blocks | 513 | " |
| Width of Entrance on top | 88 | " |
| " " " Bottom | 77 | " |
| Water on Blocks at Spring Tide | 26½ | " |

**DOCK No. 2.**

| | | |
|---|---|---|
| Extreme Length | 371 | Ft. |
| Length on Blocks | 360 | " |
| Width of Entrance on top | 66 | " |
| " " " Bottom | 53 | " |
| Water on Blocks at Spring Tide | 22 | " |

**DOCK No. 3.**

| | | |
|---|---|---|
| Extreme Length | 722 | Ft. |
| Length on Blocks | 714 | " |
| Width of Entrance, top | 99½ | " |
| " " " Bottom | 88½ | " |
| Water on Blocks at Spring Tide | 34½ | " |

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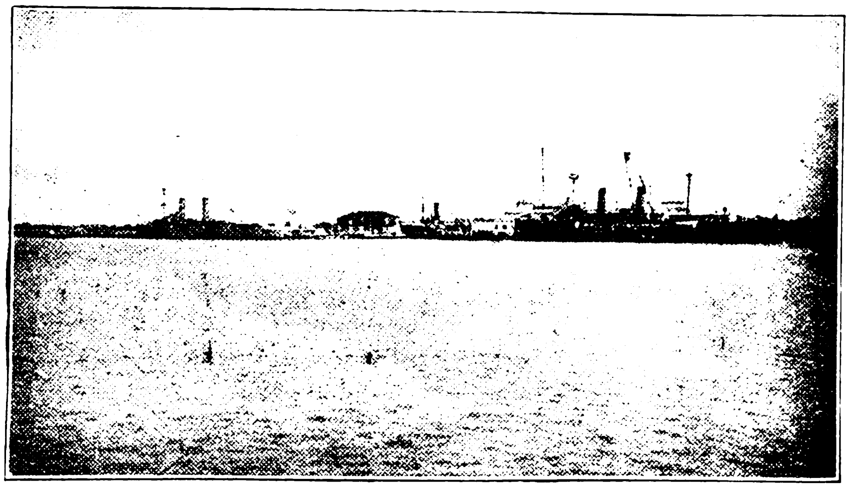

VIEW OF INTERNATIONAL DOCK
showing "M. S. Dollar" in Dock and the Chinese Cruisers "Hai Chi" and "Hai Yung" alongside Dock Co's. Wharf.

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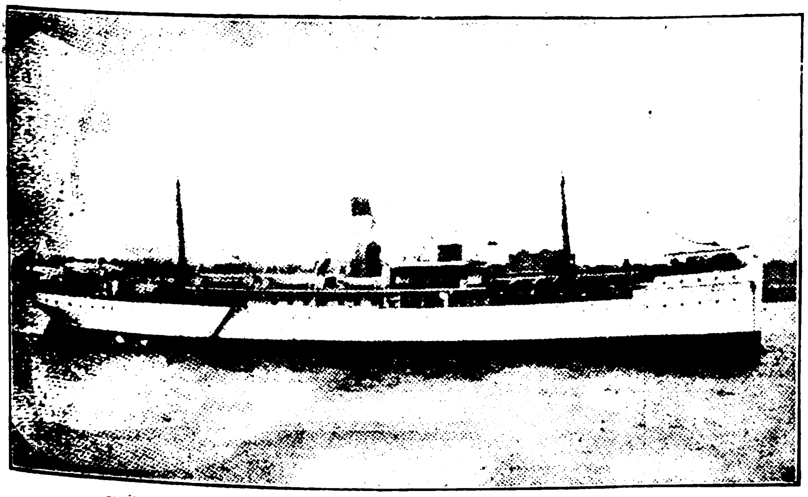

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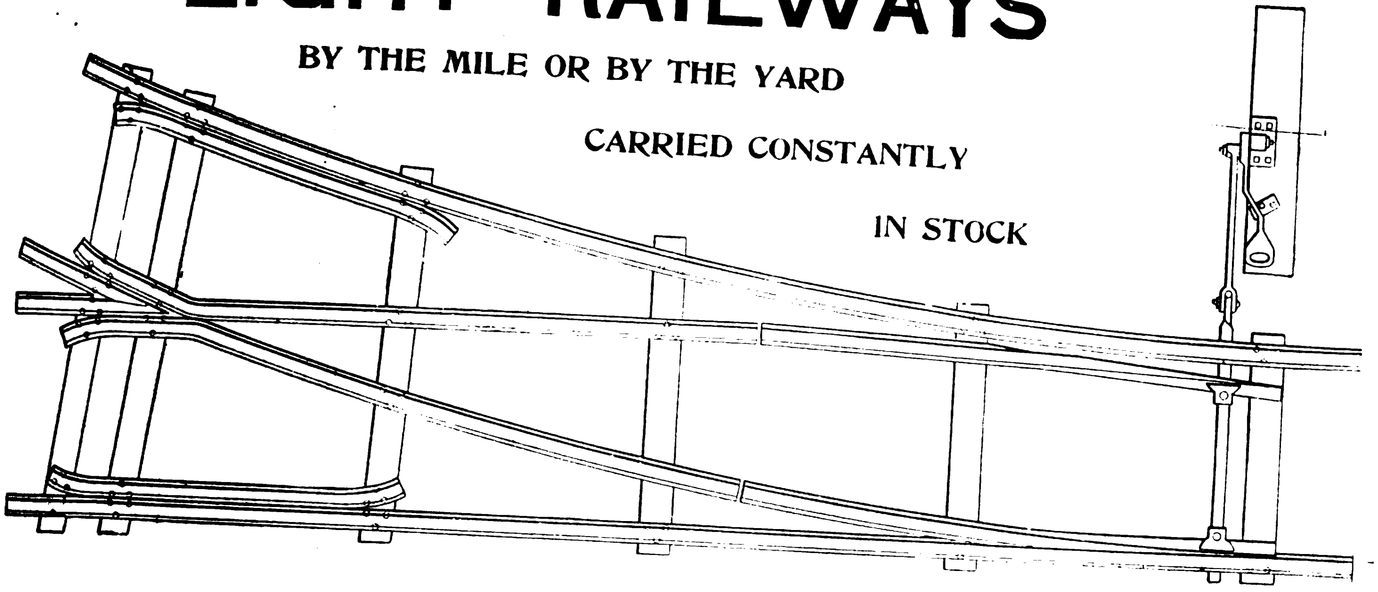

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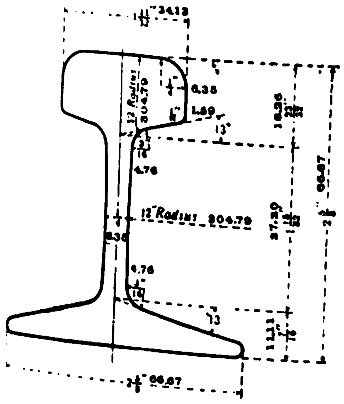
RAIL SECTION 2040

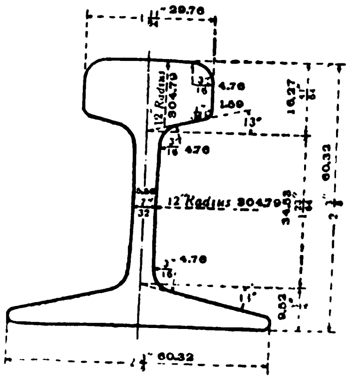


20 lbs. per yard.
9.92 kg. per meter.
31.43 gross tons per mile of single track.
19.84 tonnes per kilometer of single track.
168 ft. of single track per gross ton.
50.4 meters of single track per tonne.

## United States Steel Products Company

**Union Building, 4 The Bund, Shanghai.**

RAIL SECTION 1640



16 lbs. per yard.
7.94 kg. per meter.
25.14 gross tons of single track per mile.
15.88 tonnes per kilometer of single track.
210 ft. of single track per gross ton.
62.97 meters of single track par tonne.

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PATENT

## WATER-TUBE STEAM BOILERS

**11,000,000 H. P. Land-type 2,500,000 H. P. Marine-type installed or on order**

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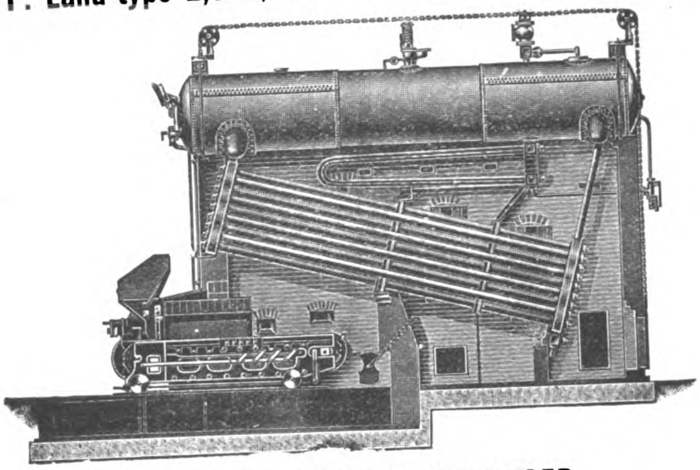

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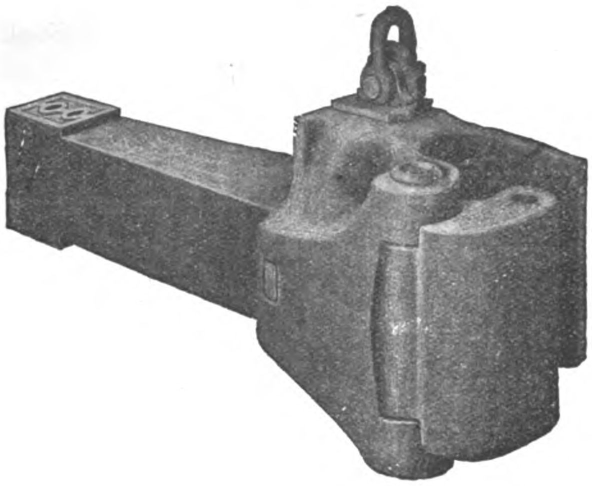

THE latest development of the Janney type of M. C. B. Coupling originally introduced and promoted by this company. This coupler has all the simplicity of the early type of the Janney coupler, and also has the up-to-date features of a "Lock-to-the-Lock," "Lock-Set," and a "Knuckle-Opener," and complies fully with all the requirements and recommendations of the M.C.B. Association of the U.S.A.

***Lock-To-The-Lock***—The locking pin cannot climb, being held in the locked position by a trigger the lower end of which projects into a recess in the coupler head, thus preventing accidental uncoupling.

***Lock-Set***—Lock setting is accomplished by the locking block resting on a seat on the inside wall of the coupler head when raised to the uncoupling position, from which seat it is dislodged on the closing movement of the knuckle in the act of coupling.

***Knuckle-Opener***—The knuckle-opener pushes the knuckle open to the fullest range of movement from a fully closed position, or from any partially open position, and its path of movement is such as to insure easy and complete opening of the knuckle.

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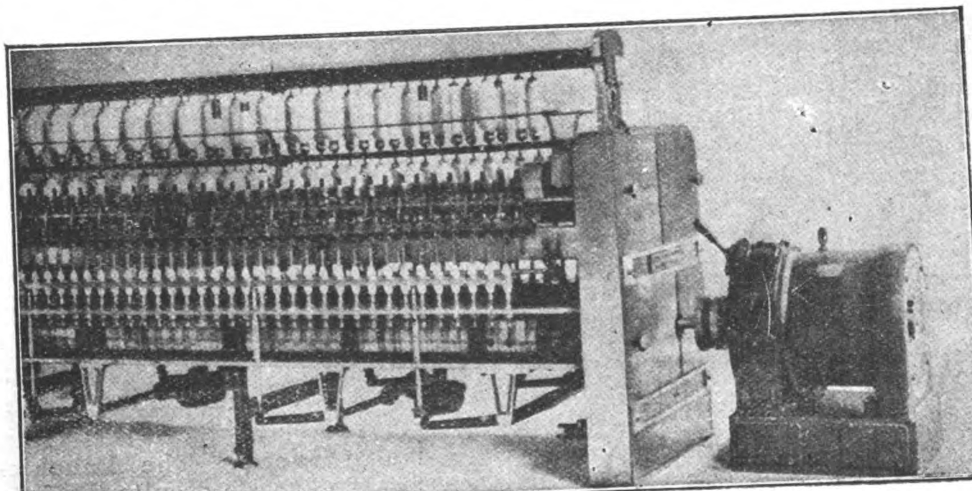
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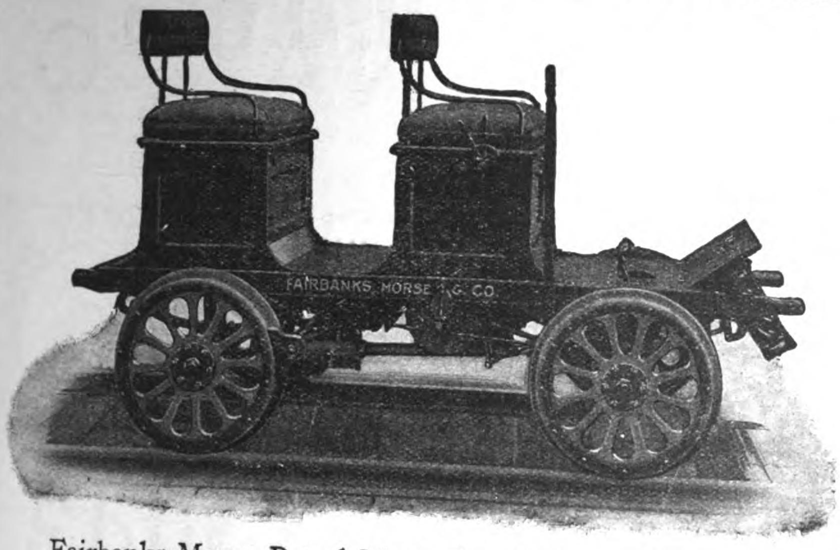


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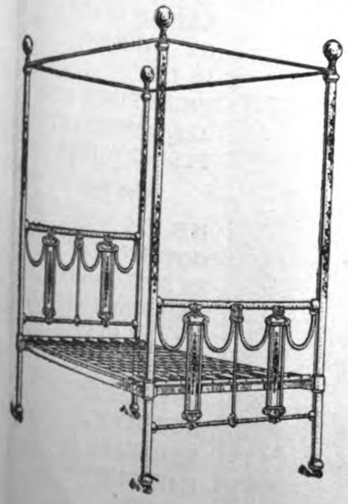

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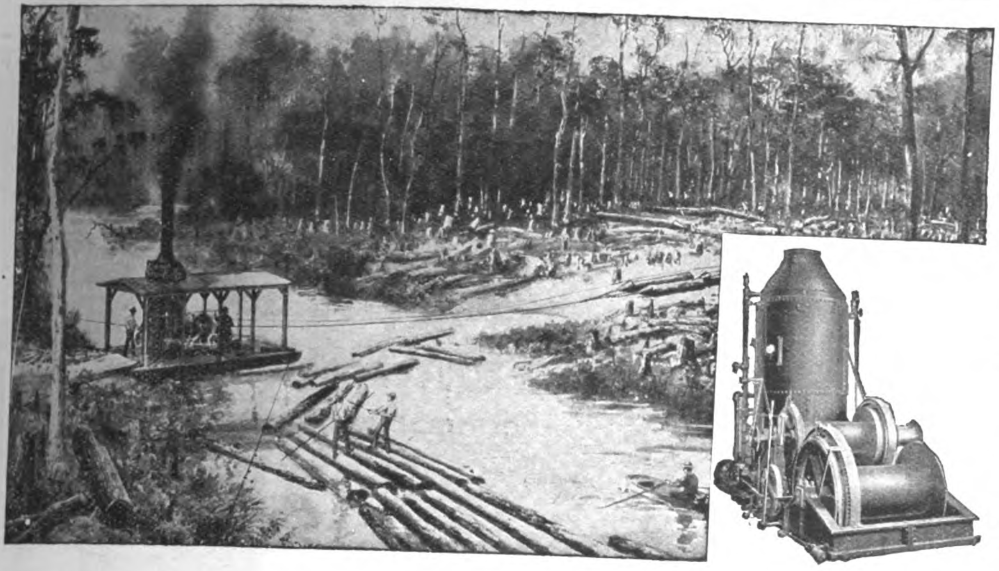

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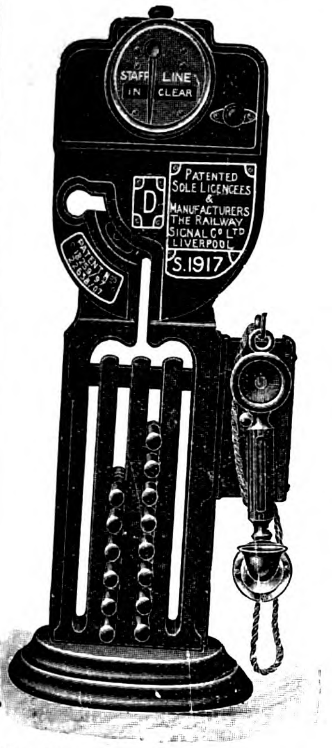


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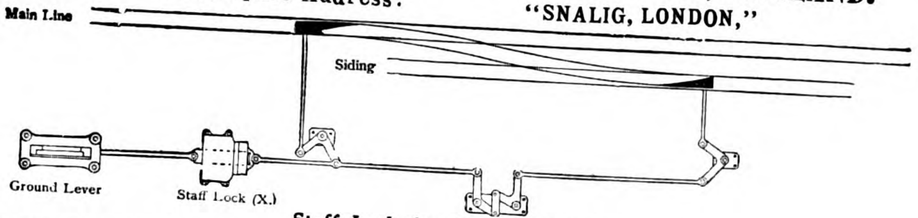


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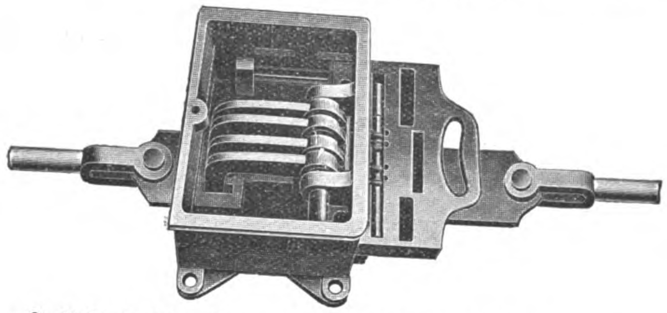

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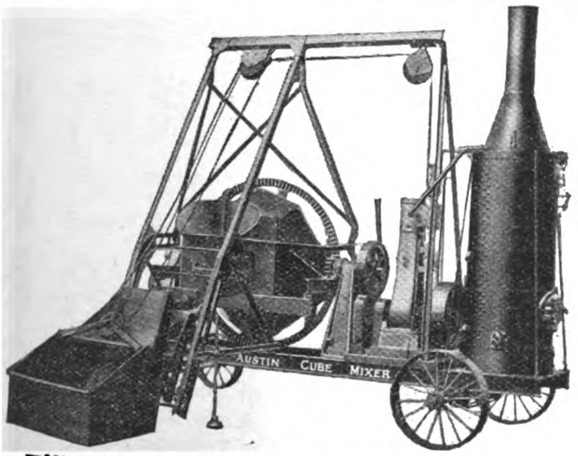


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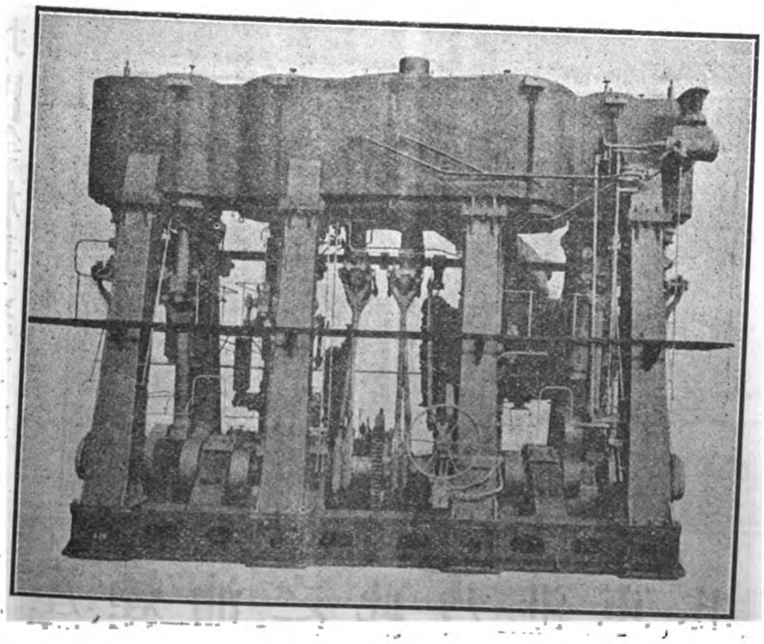

此圖爲四次自漲力汽之合抵力汽機計馬力四千八百匹

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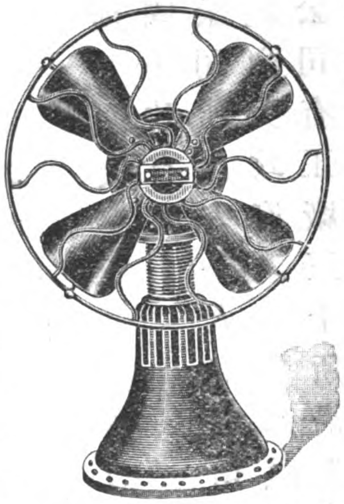
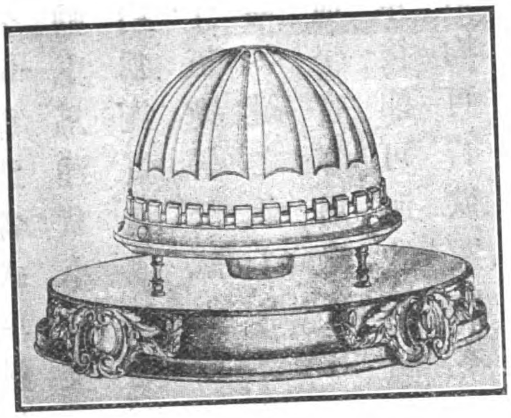


本行經理美國藍克勃里持廠（譯即湖風馬達）新發明扇一種無電自來風扇點燒火酒速率快捷每二十四小時祇費洋一角五分而一分鐘內自五百轉至六百轉之多故此風扇非獨內地極端歡迎即裝電之處亦覺搬動靈便危險毫無

## 新發明白來司康拉脫燈



此燈製造精美燃點清潔明如白晝且光頭柔和其色如銀輕巧可愛效力極佳質地美好因發光勻洽空氣透徹易於料理諸君試購用之方知此燈之適用也倘蒙　定購或願任各處經理者請函詢大馬路廿八號柏樂天洋行可也

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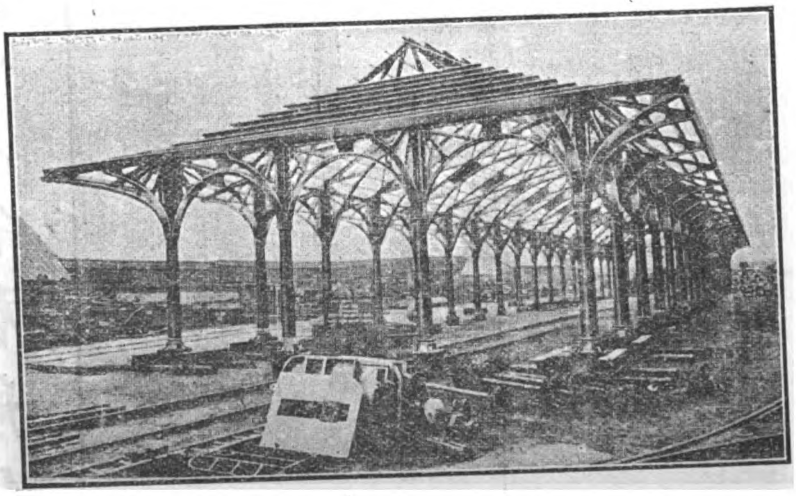
本公司有大廠三所專造煤礦場及各礦場所用之物及裝煤船貨車起重機風箱冶汽爐船塢門等橋坑總齒輪鋼質貨車屋頂煙筒油池之類此圖乃香港之車站其屋頂爲



本公司所建造本公司爲英國大廠之一每年出鑄件十萬噸出機器一萬七千噸且爲中國印度日本包辦各項工作

# 上海耶松機器船廠有限公司

The Shanghai Dock & Engineering Co., Ltd.

電報行名

Telegraphic Address and Code

"FARNHAM"

密碼本用

A. B. C. 4th and 5th Editions
A.-1 Watkin's, Scott's
Western Union
and
Engineering.

總公司

在百老匯路廿六號

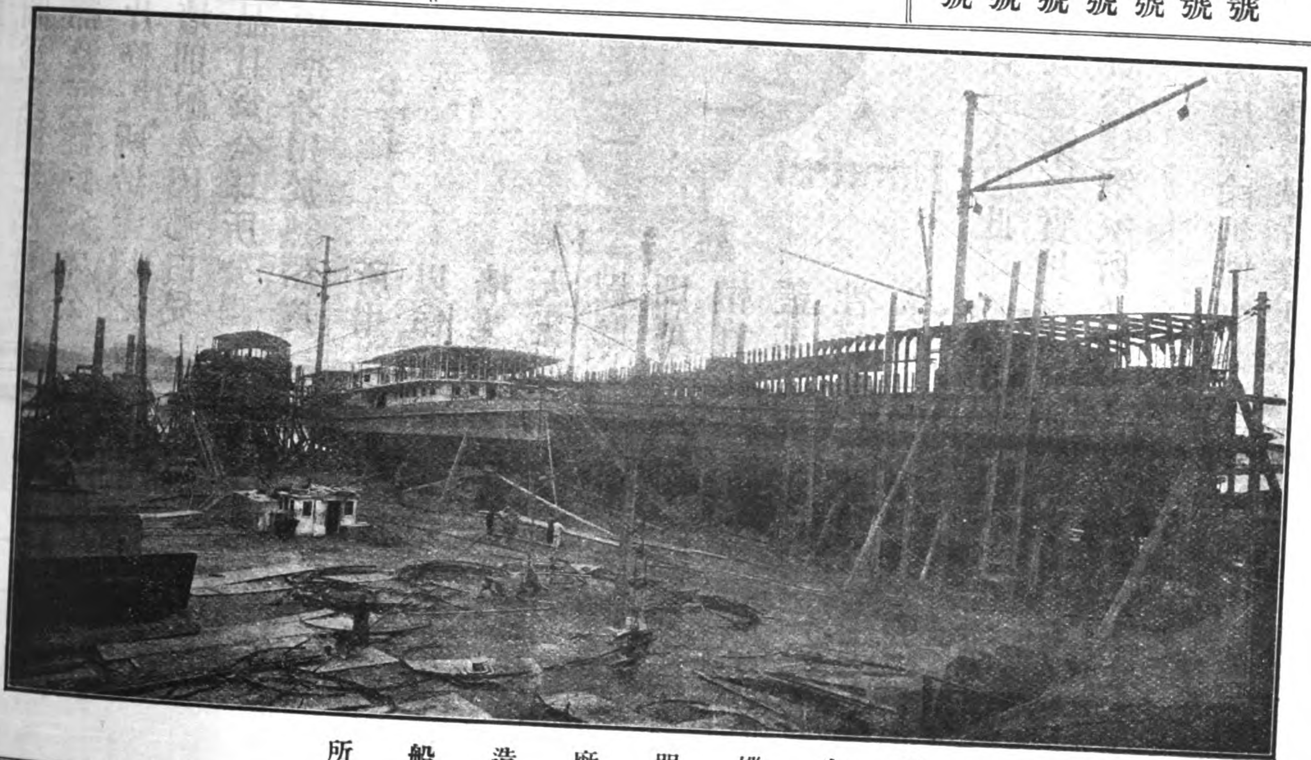
德律風第七號

Address.

電話號碼

Telephone Number

大班處 七五七號
書記處 一八七七號
總辦處 六七八八號
幫辦處 一八八七號
總寫字間 七號
浦東寫字間 二三號
浦東機器間 一一二七號



祥生機器廠造船所

本廠所造輪船模型英一千九百零四年在美國聖魯易賽會得賞金牌

The Model exhibited at St. Louis Exposition and awarded the Gold Medal in 1904.

熱水汽管卽司丁火爐各種式樣俱全

All Kind of Steam Heating Institutions.

本廠共有船塢五處長自三百五十五尺至五百三十二尺船塢口闊自五十三尺至七十七尺深十六尺至廿四尺　本廠價格可稱東方第一低廉　本廠船塢工場共有基地四百四十八畝佔有水面一英里半之長　碼頭方船均全以便各輪船修理時可以靠傍小輪修理並可拖至岸上各船塢均備有起重吊機可受六十五噸之重物　各造船處及工場均裝用電燈並有活動吊機可吊六十噸重之物並有最新式機器應用物件機器間及工場均裝輕便鐵道　本廠備有水鬼多名撈船器具及吊機浮船一遇招呼隨時應命無論海船江輪明輪暗輪拖駁小輪機器駁船挖泥船吊機浮船以及碼頭方船等如蒙詢問價目無不從速答覆　各種修理及拆舊換新等本廠均可承接並能迅速從事　本廠並有船上岸上所用機器爐子開礦機抽水機以及各種機件電氣自來火火油司丁各種機器俱全如蒙賜顧請卽駕臨或函件接洽均當歡迎也

# 西北展張鐵片公司廣告

North Western Expanded Metal Co.

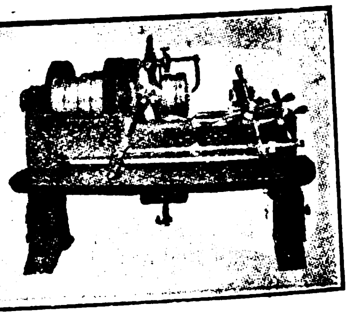
本公司製造哪白兒展張鉄片專爲近世築造之鋼屋內部所用以上之圖爲美國芝高哥城最大最新近之大廈其內部及底盤均爲本公司所製之哪白兒展張鐵片條板所造蓋以之作底盤其價甚廉以之作墻則耐久因哪白兒牌之條板爲惟一之建築品且爲全球所公認推爲內外建築特別品之標準若用於熱帶處所用以作墻及天花板底則更相宜蓋其性耐久而

不曲且不笨重易於運輸且避水患此項展張鉄片條板業經由五洲各大建築家實地試驗防熱避風火暴雨等危險實爲建築家所不可少之物

今敬告建築家若欲建造房屋無論何時何地何物先請察驗哪白兒牌之展張鉄片條板本公司備有說明書請來函索取可也

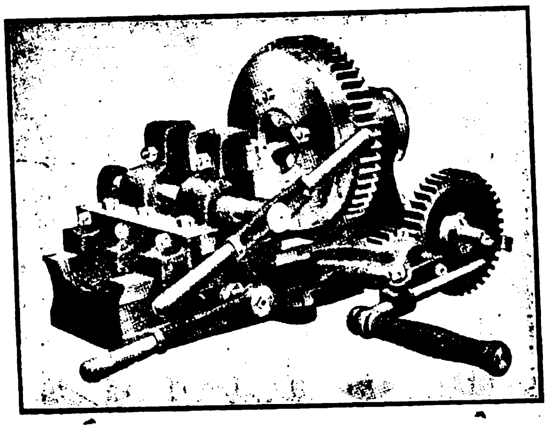
# 英國約書亞西潑有限公司

Joshua Heap & Co., Ltd.



本公司專造製螺絲機器此圖爲一吋單頭自動製螺絲機器爲多頭製螺絲機器之一曾註册立案爲近世最省工力之機器備有柄頭及自動開機連於螺形頭上及自動關機并配製螺絲各俱無不靈動本公司所出之註册鋼質螺絲模型爲市上所罕有蓋質地堅實螺絲板易於拆卸且全體皆爲良工所製並無發條或輕脆之料作摻雜其間

此圖爲改良通用之製螺絲機器可製螺絲管彎曲短小之件如對徑二吋大小之物或釘梢對徑二吋半等物均可製造近年來銷數已達二千五百架其大者如對徑八吋之物亦可製造此項機器電力與人力均適用若欲知詳細請來函索取目錄爲禱



# 美國展輾冶鐵工廠廣告

The American Rolling Mill Co.

新舊兩鐵釘之比較方形熟鐵釘可用三十八年鋼鐵釘可用十一年

本公廠爲國家所特許稟准立案爲萬國鐵廠所賞識因所鑄之**奧姆可**鉄耐用且爲新發明格致術可免生銹之患鐵性本易生銹而本廠獨得妙法使其免銹二十年前無人知其原性故有歐美著名之冶金學士研究其生銹之故及免生銹之法至今日大工已成查得首時所用之鐵爲純潔之質故耐用後因有雜質如鎂及硫礦等物故欲免其生銹必須將雜質冶去而後可至免鋼生銹之法亦然當將雜質及炭質冶去

由研究試驗而得一定例如電池之例一律若電內放雜質則電流不順本廠之**奧姆可**鐵能免生銹因按格致之理而溶鑄者也其雜質均摒棄

凡鉄質之面既有不同故生銹之處亦有多少故凡鑄鐵具務須厚薄均勻寬鬆合度

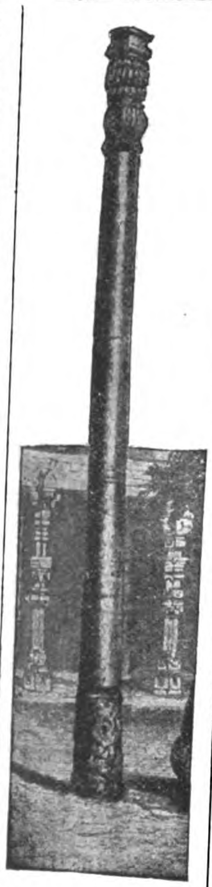
本廠開設美國哇哈哇省

密特兒登電報用奧姆可三字

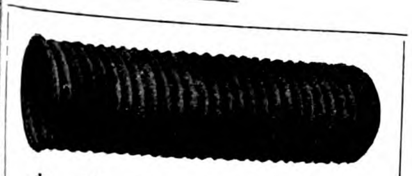
**欲索取詳細目錄可將英文告白之下面角紙裁下送來可也**

英國經理倫敦馬銳公司　小呂宋經理非列賓　大西洋海灣太平洋公司

屋頂及屋傍引傳電氣之奧姆可縐紋鐵件



此圖乃印度國特而希之大鐵柱建於紀元前九百年爲純鐵所鑄之柱



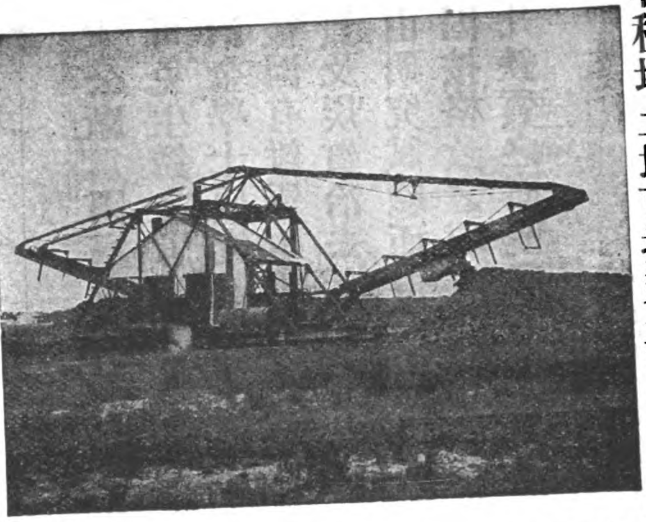
奧姆可縐紋鐵溝大道鐵路陰溝最適用貨真耐用欲知目錄請來信索取可也

# 奧司丁挖渠機器公司露佈

F. C. Austin Drainage Excavator Co.

本公司製造各種機器如溉田機器鑿溝機器且一經購定即可速即裝運出口今本公司特登廣告以告諸包工家營造師以及政府中官吏因本公司已將各機器早經裝就定單一到即可運往印度緬甸錫蘭暹羅海峽殖民地埃及中國日本及遠東諸各處水脚保險均可包理

奧司丁鑿溝機器樣式及大小種類極多且各種地土均可挖鑿其兜能自傾外出其機器之料作均鋼所鑄奧司丁掘土機器能自由運動地之深淺闊狹斜側均適宜合用其兜能自傾外出



圖中之奧司丁連結挖掘機器為美國政府所用以開巴拿馬運河之用每一連機每點鐘可挖掘六十八立方碼奧司丁公司所出之機器通行於美國英國坎拿大奧司達利亞南亞非利加日本俄羅斯意大利巴西及埃其丁民主國且均由各該政府定購

若欲知詳細章程者可函達上海遠東報主筆先生可也

本公司開設美國芝加哥省

# 克立討耳公司廣告

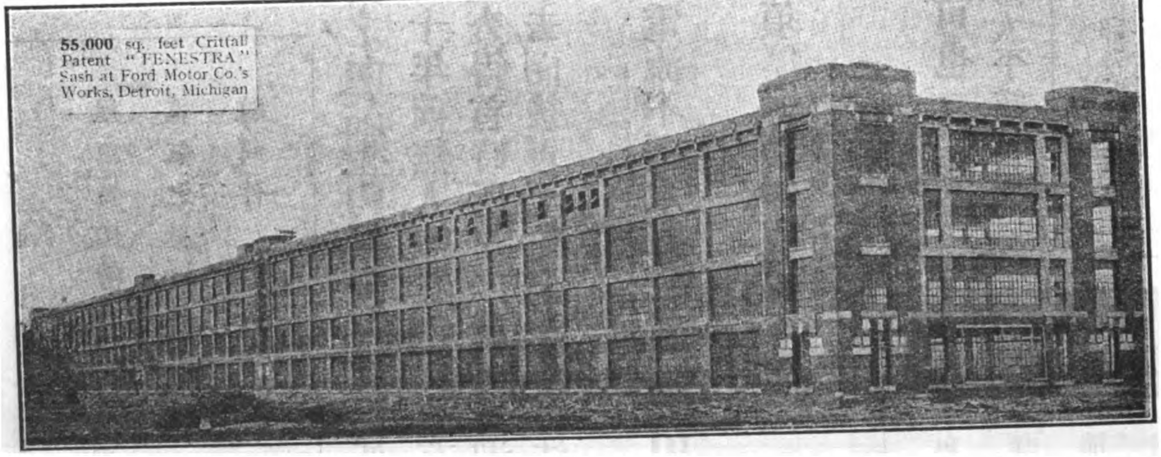
CRITTALL

本公司包造各種房屋遐邇馳名工廠開設英國

日本經理　東京麴町區有樂町十一町目

中國經理　上海　漢口　天津

上海南京路十三號盈生洋行




此圖為美國米西干省製造汽車之工廠為本公司所築之鐵窗計長五萬五千方尺

# 瑞生洋行

設分行在漢口天津北京等處

本行開設在華歷有年所承蒙 官商訂購各種機器或全廠或零售無不價廉物美屢承 嘉許遐邇皆知凡官商諸公購辦機器務祈惠臨 敝行 估開價目繪呈圖說格外克己上海漢口兩處另設機器陳列所陳列各種最新式樣機器及五金器具鋼地軸皮帶輪掛脚等以備諸公駕臨觀覽特此佈告

上海瑞生洋行謹白

Shanghai Machine Company

# 魏廷敦起水機器有限公司

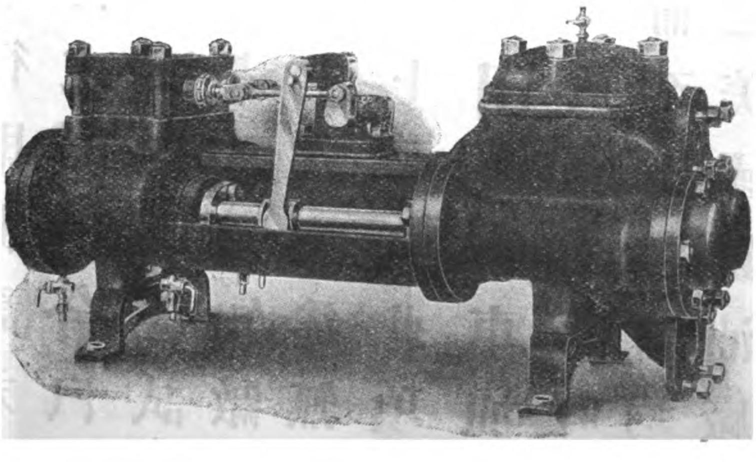
Worthington Pump Company, Limited.

本公司起水機器亦在各國著名賽會得有金牌

本公司亦有製造廠在以下之國

英國　法國　美國　澳國

德國　印度國



本公司亦有辦事處在以下載明之各國

比利時　南亞斐利加　坎拿大　澳大利亞　中國　葡萄牙　墨西哥　巴西國　俄羅斯　阿珍甸　西班牙　義大利

中國總辦事處在上海九江路第三號

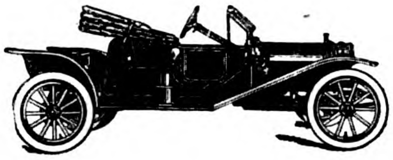
# 美孚油行廣告

Standard Asphalt Block Filler. Standard Oil Company of New York.

本行製造地瀝清砧塞俱其效用能使所鋪之地不能因天時之更換而改易幷使砧面上之黏性合度且棉軟而能減少噪聲本行之地瀝清砧塞俱其功效有如此之大故凡美國來往行人最多之處鋪以此物其功效則顯而易見故人多稱道之若承諸君不棄欲知詳細效用幷價目者請來函詢問可也

# 美國紐約克美孚油行廣告

Pratt's Motor Spirit. Standard Oil Company of New York.



諸君費錢以購買猗司令汽車油之故必望其發生極速馬力並多走里數然欲達最美滿之目的本行則勸諸君購取敝行之猗司令汽車油若一經試用諸君則知敝行之貨物為無上上品也此項猗司令汽車油裝於箱內每叮自二加侖至五加侖均由敝行之美國鍊油廠所鍊就直接由該處運來故毫無摻雜他種物質之弊

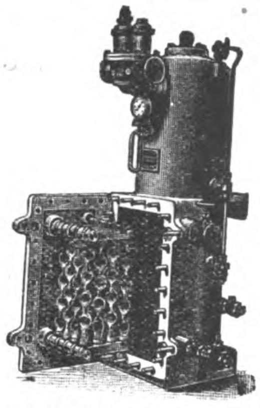
美孚油行猗司令汽車油部啓

# 老來司有限公司
ROYLES LIMITED

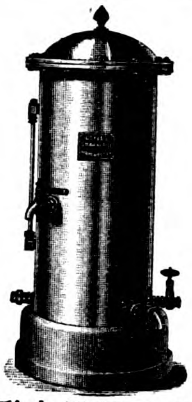
本公司所製煖水器俱色夫尼亞汽笼蒸汽俱汽弇壓機回焰爐鍋引熱機均供愛桂丹尼亞輪船所用幷爲宮庭中所賞識英國及外國之軍艦商船等無不購用各種之生熱機及消冷機無不用註册之老來司管故聲譽日隆其功效遠過於普通之管因物質堅固輕巧易舉迥非他公司所可覓得者也欲知詳細請來函索取樣本可也

此管專適用於穢水且能除去管底之齷齪較普通式之管其功效不啻倍蓰

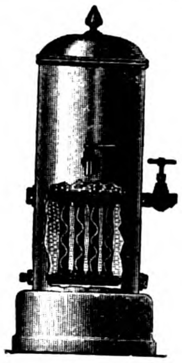
淡水壓機圖
此項壓機爲特商
部所造以供其用



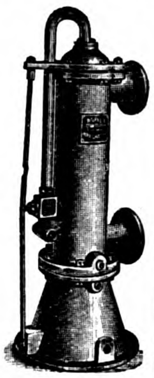
此圖卽拆開修整之形
蒸機可任意拆去以便整
理且各管不致損壞



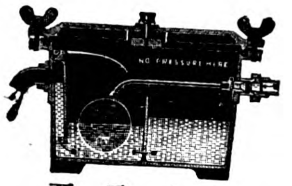
汽鍋關閉之形



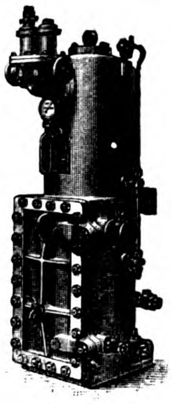
汽鍋圖



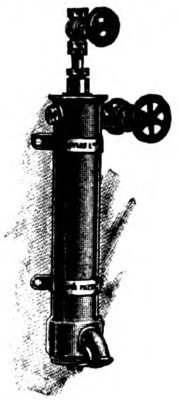
引熱機直形



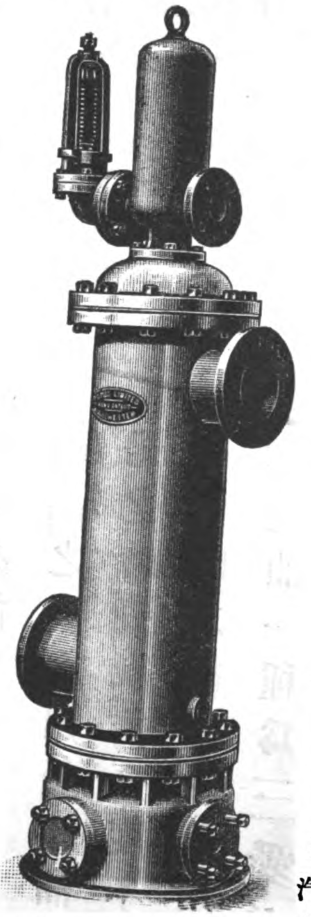
色夫尼亞
(註册商標)汽笼各處行
用者不下十三萬具



蒸機
以作添水之用

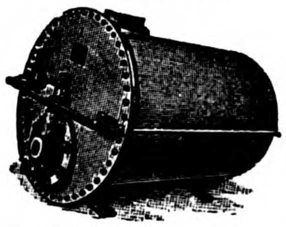


立時生熱之水機
圖　專供船中浴
沐之用



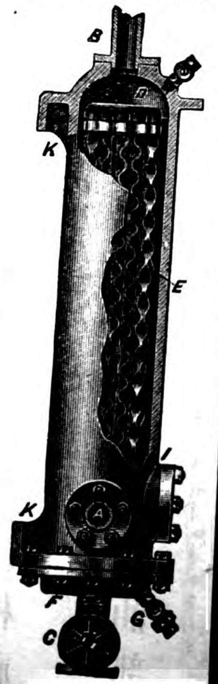
吸汽添水熱機圖

回焰爐鍋

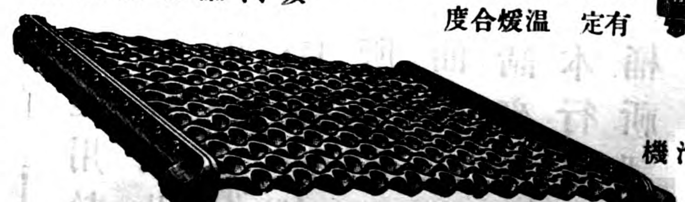


沐浴用之引熱機儲蓄形
(注意)此項引熱機藉水汽
之力能自由運行且能出水
有定　溫煖合度

連結之安全汽弇
圖壓力合度包管
便利汽或空氣或
水均合用



生熱添水汽機

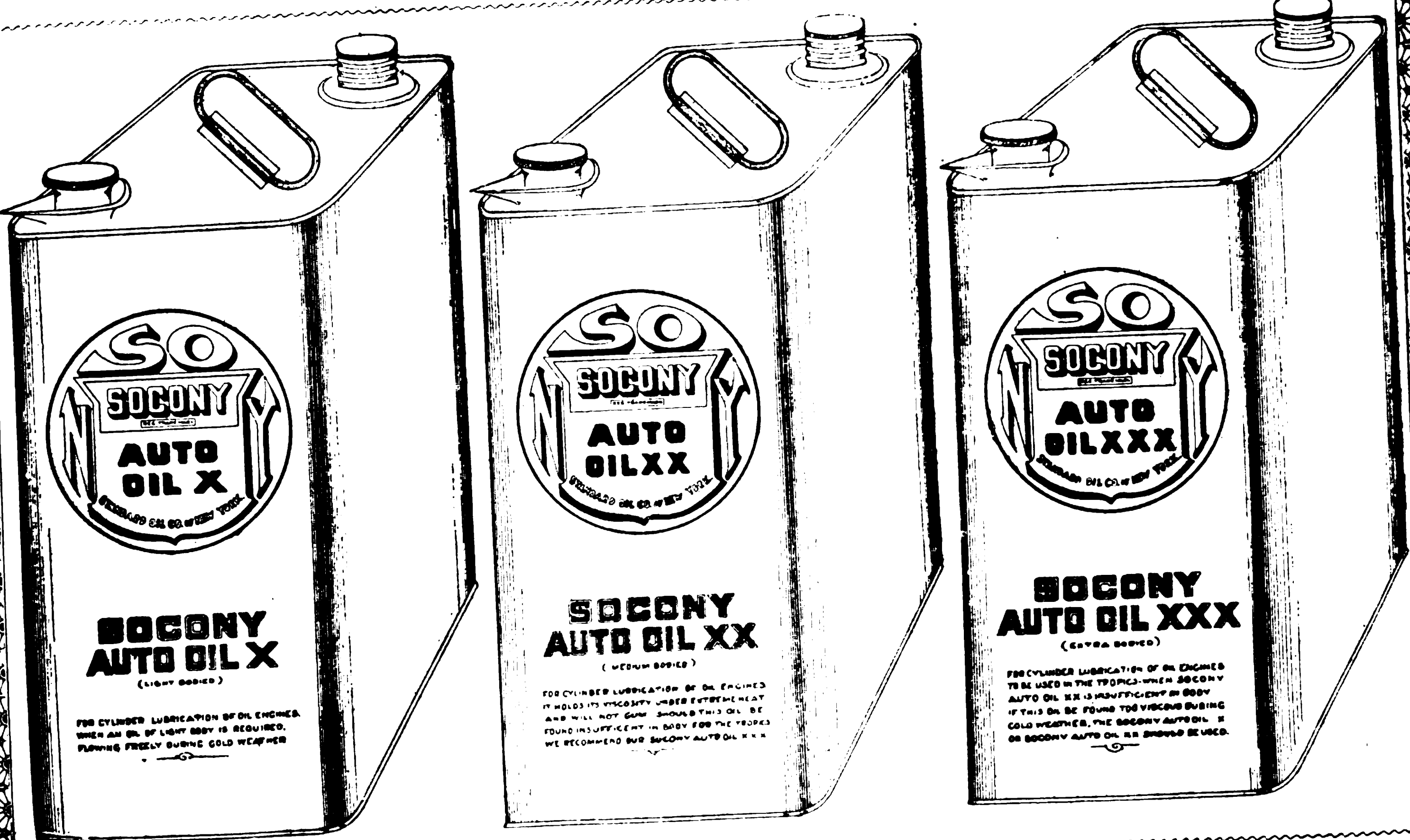


沸板圖　較金類之繩爲佳

Telegrams: "ELYOR, CADISHEAD, ENGLAND."

# 美孚油行廣告

Socony Auto Oils.　　Standard Oil Co. Lubricating Oil Department.



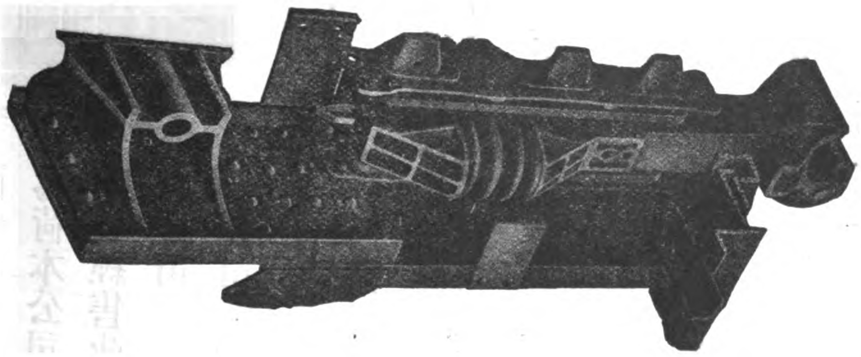

本行所出鎖可聶自轉油乃由格致考驗鍊成特供馬達家所需用且此油精緻能使馬達機器運動合度且可經久省用而免磨擦之弊蓋馬達機器若遭磨擦較用油爲費所謂機器之馬力者即殺力也不可荒廢本行之鎖可聶自轉油分三種一種爲一愛克司之油用於輕小之圓油機上於寒冷之天氣必能自由流行也一種爲兩愛克司之油亦用於圓油機上適用於盛暑之時蓋凝結合度不致汚抹倘此油因天時之故不適於用可用三愛克司之油一種爲三愛克司之油亦用於圓油機上特備爲熱地所用即兩愛克司油不足即以此油代之若承各界諸君不棄欲知詳細請來函索取說明書即汽車油之指南本行專做光油遐邇聞名以上三種油桶祈認明庶不致誤

美國紐約克美孚油行光油部敬啓

## 新民頓鐵道材料出口公司廣告

The T. H. Symington Co. Railway Material Export Corporation.

本公司所製鐵道用具爲全世界之冠且樣式均特別新樣所製之旅行箱及運動機件無論內件外件無不齊備故爲美國鐵道奉爲圭臬且通行於世界



各處中國之京張鐵路及高麗鐵路均購用極有效力若承不棄請通函定購可也開設美國紐約省百老會路一百四十九號

## 英國來大滙有限公司廣告

F. Reddaway & Co., Ltd.

本公司獨製駱駝牌皮件專製救火皮帶鐵甲皮帶及皮布等件且所製皮件爲水或汽或藥水所不能侵入者本公司又製造橡皮器俱以供鐵路并工藝廠及開礦工作等處之用若承各界諸君光顧請向經商人詢問駱駝牌可也

總公司及工廠開設英國曼區司得

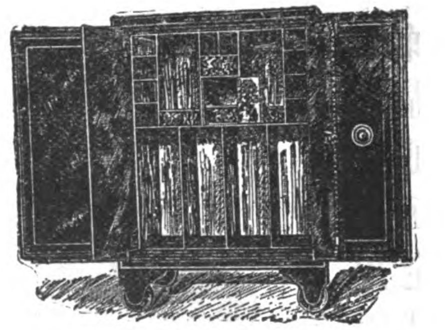
## 司帝反生公司廣告

W. F. Stevenson & Co., Ltd.

小呂宋　伊羅伊羅　塞步
本公司駐小呂宋單獨經理白
弗羅匹次公司之農業機器克
老司來弟兄公司之煤汽機及
油汽機奥司丁製廠之造路機
器威廉滑脫公司之航海機器
及水鍋等
合羣愛司倍司督司東方經理處

## 晉隆洋行廣告

Herring Hall Marvin Safes. Mustard & Co.



赫令好馬文保險箱爲
上海所罕見目下陳列
於本公司之售賣間
若欲知詳細價目請來
函索取目錄并價格表
爲荷本公司在中國爲
單獨經售此項保險箱
之公司
公司開設上海圓明
園路二十二號
電話第十五號

## 馬爾思公司

A. J. Morse & Son Diving Apparatus.

本公司創設於紀元一千八
百三十七年專製下水應用
之器俱若欲定製無不立辦
公司開設美國鮑思敦高
街第二百二十一號
經理處小呂宋弗蘭克司
決浪克

## 希米脫加熱機關車蒸機公司廣告

The Schmidt Superheater For Locomotives.

The Schmidt Superheating Co., Ltd.

本公司所製之加熱蒸機中有
四百九十多條之鐵道用二萬
八千五百架機關車之加熱蒸
機均爲倫敦及西北鐵路公司
所審定若承購買請向上海經
理處瑞記洋行定購可也
公司開設英國韋司民
得維多利亞街二十八號

# 白老頓製銅公司廣告

The Broughton Copper Co., Ltd.

本公司冶銅製造紫
銅黃銅青銅管子滊
冶合度堅固異常特
供航海及機關車并
種種用具又製造銅
塊銅條銅片及銅版
并製電銅版及夾銅
等物

公司開設英
國曼區司得



# 安德生公司廣告

Wm. H. Anderson, & Co. Manila, P. I.

本公司專做出口進
口貨物并代客買賣
且爲以下所列各公
司駐小呂宋之經理
革林島水門汀泥公
司　香港纜索製造
公司　立培麥克聶
立培公司　司活夫
公司　勃老司活克
白耳克考蘭特公司
娑磨督公司大
愛地特保險箱光滑
油溝渠管火磚火泥
及羅勃老特避火之
瓦若承各界光顧祈
通函定購可也

本公司開設小呂
宋小打克羅橋

# 麥康韋詩萊公司廣告

The McConway & Torley Co. Janney—Penn. Coupler.

邇來新發明之愛姆西皮近耐形連結俱爲本公司所輸入及研究所得者此連結俱即近耐形之化身而變成目下最通用之對鎖鎖具及肘節開具爲美國愛姆西皮會所推許茲將各所製造者一一說明於後

對鎖者即旣爲輪制所鎖住則鎖條決不向上活動因下端凸出干連結之空處免致脫節也

鎖具者即以鎖砧置於連頭之內端俟不連結之端向上轉動時即按節而合若欲解脫此鎖具當於連結時拔去之

肘節開具即由最相結連之處或略分開之處開放至最大開放處其運行處自由且肘節開放完備

其鎖面形極大約五方吋故能使肘節附合且鎖砧大小適合於連結端之下此連結俱備有各種之附屬品且易於修理此項連結俱爲本公司所專製

總公司開設美國本色萬尼亞省匹此勃

中國經理上海愼昌洋行天津協隆洋行

# 交通銀行廣告

## BANK OF COMMUNICATIONS

本銀行資本一千萬兩專辦銀行一切交易各項存款無論定期活期其利息均照議給付并滙劃中國各處以及押款等事

總行開設北京

分行

東三省　牛莊　奉天　長春　吉林　哈爾濱　遼陽　蓋平　孫家台　鐵嶺　錦縣　新民屯

直隸　北京　天津　張家口　保定　海甸　順德　唐山　北通州　豐鎮　勝芳　石家莊

山西　大同　陽高

陝西　澠池

山東　濟南　濟寧　棗莊　烟台　德州

河南　開封　焦作　周家口　漯河　道口　彰德　鄭州　信陽州　洛陽　鄱陽

江蘇　上海　蘇州　無錫　鎮江　揚州　浦口　板浦　徐州　清江浦

浙江　杭州　寧波

安徽　蕪湖　蚌埠

江西　九江

湖北　漢口　宜昌　沙市

湖南　常沙　益陽　衡州　湘潭　常德　寶慶

廣東　廣東

特別處新列后

熱河　歸化　香港　新加坡　大連等等地方

總經理　張思仁　史拉克

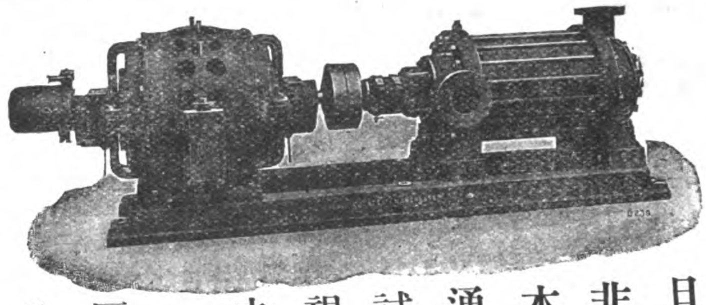
副經理　徐寶琪

仝啓

# 麥脫拍來脫輪盤抽機公司

Mather & Platt, Ltd. Turbine Pumps.

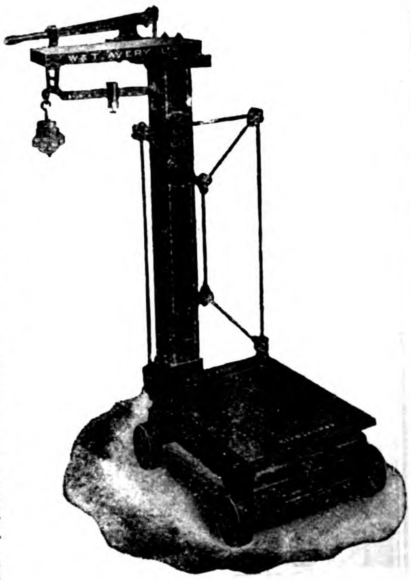
輪盤抽機爲本公司所發明且已有四十年之經驗故所出之抽機愈製愈精購用者無不樂用且無論高低均適於用此項抽機之動力或由馬達小輪汽輪速率之汽機或皮帶或繩索之力均可抽動



且一經試用則耐久非常不必再行查驗本公司所出之抽機通行於各處極多行試多年從未拆卸開視因本公司所製造之抽機美備洽意也此項抽機有自動壓匀之力裝製齊備且可增減機內之空穴價格便宜若欲購用而知詳細章程者請來函索取目錄上圖爲六筒之抽機　頭長六百十二尺每分鐘可吸六百五十加侖每分鐘可轉一千四百五十次則所動之力乃藉馬達也

# 愛物來磅秤工廠

W. & T. Avery, Ltd.　　Avery's Platform Scales



愛物來平面磅秤爲英國所製造各處通行用之以秤茶葉咖啡五穀橡皮以及種種物件無不合用今將其重量大小開列於下以便購者取擇也

平面長二十一吋半平面闊十五吋可秤四百磅

| | | |
|---|---|---|
| 二十五吋 | 十六吋 | 六百磅 |
| 二十六吋 | 十七吋 | 八百磅 |
| 二十六吋 | 十七吋 | 一千磅 |
| 二十八吋 | 二十吋 | 一千二百磅 |
| 二十八吋 | 二十一吋 | 一千五百磅 |
| 三十三吋 | 二十五吋 | 二千磅 |
| 三十四吋 | 二十六吋 | 二千五百磅 |

本廠爲世界最大之製造權衡試驗機器之廠遐邇聞名若光顧購買方知本廠之貨物也

本廠開設於英國百銘罕城

上海及橫濱經理怡和洋行

# 橫濱正金銀行廣告

Yokohama Specie Bank, Limited

本銀行創設於紀元一千八百八十年總行開設日本橫濱資本日洋四千八百萬元收足資本日洋三千萬元公積日洋一千八百五十萬元英京倫敦各銀行如倫敦及司密夫聯合銀行倫敦聯會股票銀行及派耳銀行均爲本行之經理今將分行及經理處開列如下

安東縣 孟買 加耳谷塔 長春 大連 檀香山 香港 漢口 神戶 倫敦 來因司 遼陽 奉天 紐約 牛莊 長崎 大坂 旅順 北京 舊金山 東京 鐵嶺 天津 青島 哈爾濱 勞山及耳司

上海亦設分行 活支及定期存款利息均有銀兩洋圓均聽尊便 匯票可通日本高麗臺灣及中國各重要地方并歐洲印度美洲各通商處所并辦理各種銀行所辦各事宜

經理科大麥啟



# 克耶鎖鍵工廠露佈

Joseph Kaye & Sons Ltd., Lock Works, Leeds.

本公廠專製車門鎖鍵滑門門閂精巧門鐶門鎖及門閂等以應各種用品且製造鋸齒形無縫之純鋼油管承經註册專賣爲英國之出品供應於英國水軍者不下六萬只大西鐵路大北鐵路蘭克省及雅克省間之鐵路倫敦及西南鐵路南斐洲及印度國有之鐵路均用此純鋼油管盛油也倘承不棄請來信定購是幸

工廠開設於英國离池

# 中國銀行廣告

THE BANK OF CHINA

本銀行於民國元年奉　政府命令設立兩年以來信用昭著總行設於（北京）分設（直隸省）天津　保定　邢台　灤縣　唐山　滄縣　濮陽　邢縣　磁州（山東省）濟南　青島　煙台　藤縣　濟寧　周村　惠民　益都　臨清　臨沂（河南省）開封　周口　彰德　漯河信陽　道口（山西省）太原　運城　歸化城（江蘇省）上海　南京　鎮江　無錫　蘇州　揚州　清江浦（安徽省）安慶　蕪湖　大通　徐州　下關　蚌埠（江西省）南昌（福建省）福州　南台（浙江省）杭州　寧波　蘭谿　嘉興　湖州　溫州　紹興（湖北省）漢口　沙市　宜昌（廣東省）廣州　江門　汕頭　瓊州　韶州　潮州（東三省）奉天營口　安東　錦縣　大連　鐵嶺　長春　吉林　哈爾濱　齊齊哈爾　等處享有發行鈔票代理國庫之特權並辦理匯兌買賣生金銀往來存款定期存款抵押放款貼現放款代各公司商號或個人收取本埠及他埠票據款項保存有價證券及一切貴重物件至匯兌一項無論通商大埠蕞爾遐陬凡本行已經分設者均屬便利所收匯費無不格外克已以副光顧諸君之雅意再本行發行鈔票準備充足凡完糧納稅發俸放餉官款出納商民交易以及應付鐵路輪船郵電一律通用現爲便利商民行使本行鈔票起見特於北通縣（海甸鎮）設立兌換所並於本京內外城商店繁盛之區委託殷實商號代兌本行鈔票如有多數鈔票請逕向（西交民巷）本行兌換可也茲將代理兌換處所開列於下

▲注意▼（東四牌樓）寶源銀號（安定門）會源銀號（東珠市口）隆茂源銀號（騾馬市）恆裕金店（西河沿）仁昌金店（後門）永通誠布店（新街口）益泰成布店（西單牌樓）和順公布店（後門）平易銀號（西單牌樓）益大銀號（又珠寶市爐房十家）恆盛銀號同元祥爐房　德順號　聚起號　祥瑞興記　源豐號　復聚號　萬興號　全聚厚記　聚盛源爐房　再本總行營業時間開列如下　陽曆四月一日起至九月底止每日上午九點鐘起至下午四點鐘止由陽曆十月一日起至三月底止每日上午十點鐘起至下午四點鐘止

# 法蘭克司屈郎機器公司

Frank L. Strong Machinery Co.

本公司開設斐列濱經理各種機器幷顧聞工程建築營造等事下列各製造廠均爲本公司駐斐列濱祗此一家之經理公司

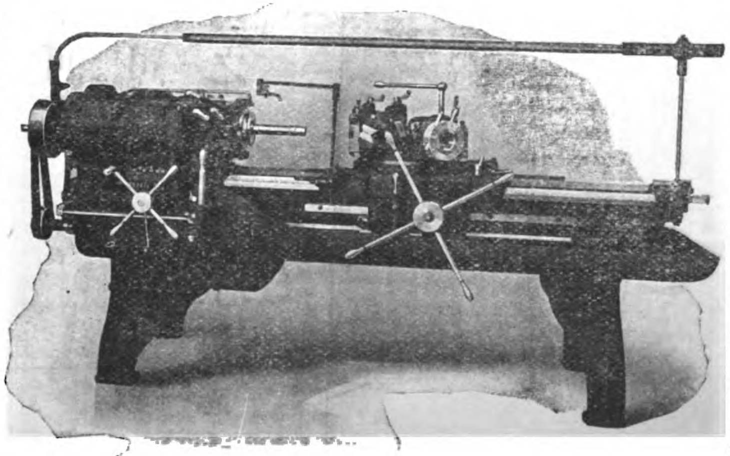
總電汽公司 專製電汽應用材料器俱
匹登水輪公司 專製水輪
拿皮泡公司 專製車機升機
芝加哥抽機器俱公司 專製抽氣機壓氣機及附屬品
美國器俱工廠公司 專製車機鏍子製模俱半徑鑽頭
美國白羅耳公司 專製風車風房幷通氣之器俱
白耶息比製造公司 專製研磨機器及各附屬品
鷹立球鋼鐵公司 專製鋼鐵器俱
立及悟特製造公司 專製鋸件
屈老司康克利鋼件公司 專製(康式)房屋物件
哇的司升機公司 專製坐客升機及貨物升機
押克製造公司 專製冰機
白考克威耳考克司公司 專製水管鍋爐
美國浣衣機器公司 專製浣衣機器
愛姆司鐵廠 專製汽機及鍋爐
灰衣犿安公司 專製鋸件及木工各種機器
古特立志公司 專製橡皮物件
耶耳士耐製造公司 專製鏈具及升機
查去倫公司 專製避水皮帶等件
火文哇溫公司 專製(海密耳登可立司)式之汽機
克老犿轉轍俱及應用品公司 專製德律風器俱及附屬品
犿老克裝包公司

若承光顧無不歡迎電報密碼請用英字 Landstrong.

# 韋司蘭姆生機器公司

Jones & Lamson Machine Company.

此圖爲本公司所特之車床若能習學此機完美則得利可操勝劵也此車床爲車塔平面機其大小爲闊三吋長三十六吋專做鐵條柄軸等各種工件故此機及其作用 **能使工人幷機器加增出品** 因用是項機器不必購用價値高貴



之小另件配製工作也

總之製造此種車床之目的 **即費一文錢得一文錢之利於購者有莫大之利益**

欲知詳細章程請來函索取不費郵資

本公司開設 美國活忙脫省司不林飛而特 英國倫敦維多利亞街九七號

# 華愛德公司

本公司代聘全球著名工程師專包辦並經理各種工程兼各式工程物料已歷有年所成效昭著爲各國官商各界所推許如蒙 惠顧請向下列各經理處接洽可也

美國紐約匯業處四十三至四十九號

英國倫敦克洛克路九號

J. G. White & Company

# 潑利司脫門弟兄公司廣告

Priestman Brothers, Limited.

本公司專製掘泥機器及升降機器其兜之大小式樣共有一百五十種小自一立方呎起大至一百立方呎

若欲知詳細式樣請來函索取樣本可也

本公司開設英國倫敦

中國之經理處上海志大洋行

上圖爲多兜挖泥機之一爲大包工家大成公司所有

# 克來葛有限公司

A. F. Craig & Co., Ltd.

蘇格蘭丕士蘭城內

經理各項工程另有鑄鐵廠汽鍋製造廠

經理製糖機械煉糖機器各式俱備

事務所倫敦來頓好街

上海漢口凱衛倫洋行經理


# 交通部吉長鐵路客車時刻表

Kirin-Changchun Railway.

民國四年五月一日改定

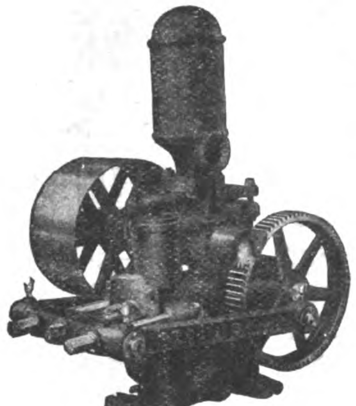
## 由長春頭道溝至吉林

| 站名 | | 下行車 第一次 客車 | 下行車 第三次 客貨車 |
|---|---|---|---|
| 頭道溝 | 開 | 上午七·三〇 | 下午二·三〇 |
| 長春 | 到 | 上午七·三八 | 下午二·三〇 |
| 長春 | 開 | 上午七·四一 | 下午二·四五 |
| 卡倫 | 到 | 上午八·一三 | 下午三·二〇 |
| 卡倫 | 開 | 上午八·一四 | 下午三·二五 |
| 飲馬河 | 到 | 上午八·四六 | 下午三·五八 |
| 飲馬河 | 開 | 上午八·四八 | 下午四·〇二 |
| 下九臺 | 到 | 上午九·〇二 | 下午四·一七 |
| 下九臺 | 開 | 上午九·〇四 | 下午四·二二 |
| 營城子 | 到 | 上午九·一六 | 下午四·三四 |
| 營城子 | 開 | 上午九·一八 | 下午四·三八 |
| 土們嶺 | 到 | 上午九·四〇 | 下午五·〇二 |
| 土們嶺 | 開 | 上午九·五〇 | 下午五·一二 |
| 趙家店 | 到 | — | — |
| 趙家店 | 開 | 上午一〇·一〇 | 下午五·二二 |
| 樺皮廠 | 到 | 上午一〇·一二 | 下午五·三七 |
| 樺皮廠 | 開 | 上午一〇·二三 | 下午六·〇二 |
| 孤店子 | 到 | 上午一〇·四六 | 下午六·一八 |
| 孤店子 | 開 | 上午一〇·四七 | 下午六·二〇 |
| 九站 | 到 | 上午一一·〇二 | 下午六·三八 |
| 九站 | 開 | 上午一一·〇五 | 下午六·四二 |
| 吉林 | 到 | 上午一一·一五 | 下午七·〇五 |

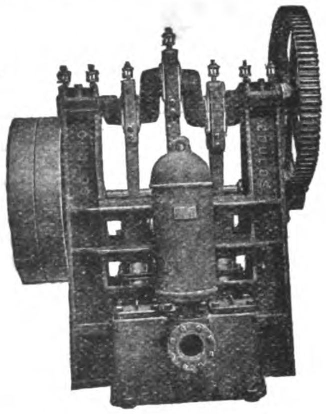
## 由吉林至長春頭道溝

| 站名 | | 上行車 第二次 客車 | 上行車 第四次 客貨車 |
|---|---|---|---|
| 吉林 | 開 | 下午二·三〇 | 上午六·二〇 |
| 九站 | 到 | 下午二·五〇 | 上午六·四二 |
| 九站 | 開 | 下午二·五三 | 上午六·四五 |
| 孤店子 | 到 | 下午三·〇七 | 上午七·〇二 |
| 孤店子 | 開 | 下午三·〇八 | 上午七·〇四 |
| 樺皮廠 | 到 | 下午三·二二 | 上午七·二〇 |
| 樺皮廠 | 開 | 下午三·二四 | 上午七·二二 |
| 趙家店 | 到 | — | — |
| 趙家店 | 開 | 下午三·四六 | 上午七·三六 |
| 土們嶺 | 到 | 下午四·〇六 | 上午八·一八 |
| 土們嶺 | 開 | 下午四·一二 | 上午八·二四 |
| 營城子 | 到 | 下午四·二三 | 上午九·〇二 |
| 營城子 | 開 | 下午四·二六 | 上午八·五〇 |
| 下九臺 | 到 | 下午四·四六 | 上午九·〇二 |
| 下九臺 | 開 | 下午四·五〇 | 上午九·〇五 |
| 飲馬河 | 到 | 下午五·〇四 | 上午九·二〇 |
| 飲馬河 | 開 | 下午五·〇六 | 上午九·二二 |
| 卡倫 | 到 | 下午五·二八 | 上午九·三五 |
| 卡倫 | 開 | 下午五·四〇 | 上午九·三七 |
| 長春 | 到 | 下午六·一〇 | 上午一〇·一二 |
| 長春 | 開 | 下午六·一五 | 上午一〇·二七 |
| 頭道溝 | 到 | 下午六·二五 | 上午一〇·四七 |

# 美國顧爾機器廠



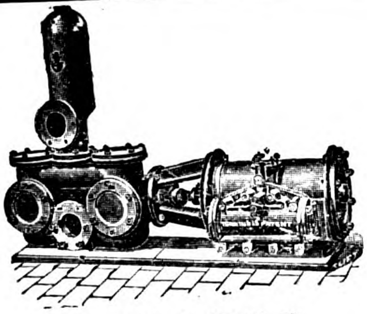
本廠開設已久爲中外各國所馳名專造各種大小抽水幫浦其三角抽水機爲尋常各廠家所最爲合用之機尙有如保險公司所用最爲靈巧便利之轉動抽水機此項機器甚爲輕便備爲消防之用尤爲合宜故凡保險公司俱有備置因其得輕便之利也其餘如自來水廠船廠各機器廠並礦井內外所應用之大小各式抽水機器無不俱全本廠係專造各項抽水幫浦故比他家式樣更多製造尤爲完善凡中外各國之賜顧者悉知本廠機件之精良造具之美備也欲知詳細情形請移玉至本行接洽可也



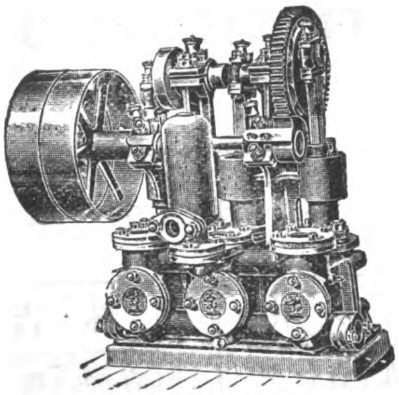
GOULDS PUMPS

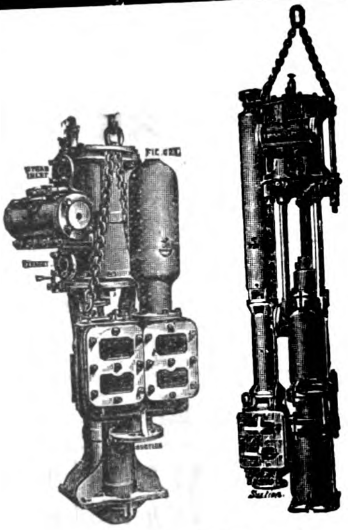
中國經售處上海圓明園路四號協隆慎昌洋行

The Goulds Manufacturing Co.

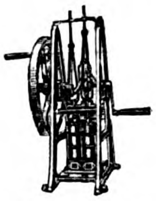


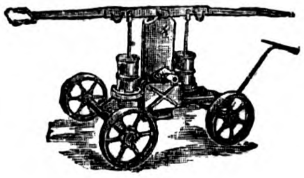
普通汽力抽水機

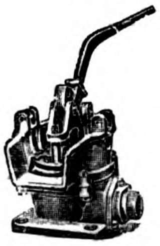




下垂抽水機
煤船煤礦所用







本公司製造各種抽水機專備工商各界採用各式全備不論使用何項動力如人工汽機皮帶風車水電各力之類均能適用如蒙函詢卽將東方目錄寄奉　英國華亨頓城·伊凡斯公司謹啟

Joseph Evans & Sons

# 正太鐵路客車時刻表

The Cheng-Tai Railway

## 上行各車

| 站名 | 價目 頭等 元 | 頭等 角 | 二等 元 | 二等 角 | 三等 元 | 三等 角 | 慢車 開 點 | 慢車 開 分 | 客貨車 開 點 | 客貨車 開 分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 石家莊 | | | | | | | 七 | ○三 | 七 | 三十 |
| 大郭村 | | 五 | | 三 | | 二 | 七 | 十六 | 七 | 四五 |
| 獲鹿縣 | | 九 | | 五 | | 三 | 七 | 三二 | 八 | ○三 |
| 頭泉 | 一 | 二 | | 七 | | 四 | 七 | 五一 | 八 | 二三 |
| 白王莊 | 一 | 五 | | 八 | | 五 | 八 | 十一 | 八 | 四六 |
| 五里鋪 | 一 | 七 | 一 | | | 六 | 八 | 二一 | 八 | 五八 |
| 微水 | 二 | 一 | 一 | 一 | | 七 | 八 | 三六 | 九 | 十五 |
| 南橫口 | 二 | 三 | 一 | 三 | | 八 | 八 | 四九 | 九 | 二九 |
| 南張村 | 二 | 五 | 一 | 四 | | 九 | 九 | ○二 | 九 | 四三 |
| 井陘縣 | 二 | 八 | 一 | 五 | 一 | | 九 | 二五 | 十 | 十五 |
| 北峪 | 三 | 一 | 一 | 七 | 一 | 一 | 九 | 三六 | 十 | 四一 |
| 南峪 | 三 | 三 | 一 | 八 | 一 | 一 | 九 | 四七 | 十 | 五一 |
| 娘子關 | 三 | 六 | 二 | | 一 | 二 | 十 | 十八 | 十一 | 十七 |
| 程家隴底 | 四 | | 二 | 二 | 一 | 四 | 十 | 三四 | 十一 | 三四 |
| 下盤石 | 四 | 五 | 二 | 四 | 一 | 五 | 十 | 五十 | 十一 | 五二 |
| 巖會 | 四 | 八 | 二 | 六 | 一 | 六 | 十一 | ○四 | 十二 | 十四 |
| 亂流 | 五 | 三 | 二 | 九 | 一 | 八 | 十一 | 二四 | 十二 | 三六 |
| 白羊墅 | 五 | 六 | 三 | 一 | 一 | 九 | 十一 | 三八 | 十二 | 五二 |
| 陽泉 | 五 | 八 | 三 | 二 | 二 | | 十二 | 三七 | 十三 | 二十 |
| 賽魚 | 六 | 二 | 三 | 四 | 二 | 一 | 十二 | 五三 | 十三 | 三七 |
| 坡頭 | 六 | 五 | 三 | 六 | 二 | 二 | 十三 | ○九 | 十三 | 五四 |
| 測石驛 | 六 | 八 | 三 | 七 | 二 | 三 | 十三 | 三二 | 十四 | 十六 |
| 芹泉 | 七 | 三 | 四 | | 二 | 五 | 十三 | 五六 | 十四 | 四十 |
| 壽陽縣 | 七 | 八 | 四 | 二 | 二 | 六 | 十四 | 十九 | 十五 | 十三 |
| 郭村 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 三二 | 十五 | 二九 |
| 上湖 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 四七 | 十五 | 四六 |
| 盧家莊 | 九 | | 四 | 九 | 三 | | 十五 | ○三 | 十六 | 十 |
| 段廷 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 十八 | 十六 | 二七 |
| 東趙村 | 九 | 八 | 五 | 三 | 三 | 三 | 十五 | 三四 | 十六 | 四六 |
| 北合流 | 十 | 二 | 五 | 五 | 三 | 四 | 十五 | 四七 | 十七 | ○三 |
| 榆次縣 | 十 | 五 | 五 | 七 | 三 | 五 | 十六 | ○九 | 十七 | 三三 |
| 鳴李 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二一 | 十七 | 四七 |
| 北營 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 三三 | 十八 | ○一 |
| 太原府 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 四五 | 到十八 | 十五 |

## 下行各車

| 站名 | 價目 頭等 元 | 頭等 角 | 二等 元 | 二等 角 | 三等 元 | 三等 角 | 慢車 開 點 | 慢車 開 分 | 客貨車 點 | 客貨車 分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 太原府 | | | | | | | 七 | 五三 | 八 | ○六 |
| 北營 | | 五 | | 三 | | 二 | 八 | ○七 | 八 | 二一 |
| 鳴李 | | 八 | | 五 | | 三 | 八 | 十九 | 八 | 三四 |
| 榆次縣 | 一 | 二 | | 七 | | 四 | 八 | 四五 | 八 | 五九 |
| 北合流 | 一 | 六 | | 九 | | 六 | 八 | 五九 | 九 | 十四 |
| 東趙村 | 二 | | 一 | 一 | | 七 | 九 | 十三 | 九 | 二九 |
| 段廷 | 二 | 四 | 一 | 三 | | 八 | 九 | 二九 | 九 | 四七 |
| 盧家莊 | 二 | 八 | 一 | 五 | 一 | | 九 | 四五 | 十 | ○七 |
| 上湖 | 三 | 二 | 一 | 八 | 一 | 一 | 十 | ○三 | 十 | 二六 |
| 郭村 | 三 | 六 | 二 | | 一 | 二 | 十 | 十九 | 十 | 四三 |
| 壽陽縣 | 四 | | 二 | 二 | 一 | 四 | 十 | 三七 | 十一 | ○七 |
| 芹泉 | 四 | 四 | 二 | 四 | 一 | 五 | 十 | 五三 | 十一 | 二四 |
| 測石驛 | 四 | 九 | 二 | 七 | 一 | 七 | 十一 | 十三 | 十一 | 四七 |
| 坡頭 | 五 | 二 | 二 | 八 | 一 | 八 | 十一 | 二五 | 十二 | ○一 |
| 賽魚 | 五 | 六 | 三 | | 一 | 九 | 十一 | 三八 | 十二 | 十九 |
| 陽泉 | 五 | 九 | 三 | 二 | 二 | | 十二 | 三九 | 十三 | 三五 |
| 白羊墅 | 六 | 一 | 三 | 三 | 二 | 一 | 十二 | 五[illegible] | 十三 | 五一 |
| 亂流 | 六 | 四 | 三 | 五 | 二 | 二 | 十三 | ○四 | 十四 | ○八 |
| 巖會 | 七 | | 三 | 八 | 二 | 四 | 十三 | 二四 | 十四 | 三七 |
| 下盤石 | 七 | 三 | 四 | | 二 | 五 | 十三 | 四十 | 十四 | 五三 |
| 程家隴底 | 七 | 七 | 四 | 二 | 二 | 六 | 十三 | 五七 | 十五 | 十二 |
| 娘子關 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 十七 | 十五 | 四五 |
| 南峪 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 三三 | 十六 | ○一 |
| 北峪 | 八 | 七 | 四 | 七 | 二 | 九 | 十四 | 四二 | 十六 | 十二 |
| 井陘縣 | 九 | | 四 | 九 | 三 | | 十四 | 五八 | 十六 | 五五 |
| 南張村 | 九 | 二 | 五 | | 三 | 一 | 十五 | 十 | 十七 | ○九 |
| 南橫口 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 二一 | 十七 | 二一 |
| 微水 | 九 | 七 | 五 | 三 | 三 | 二 | 十五 | 三三 | 十七 | 三五 |
| 五里鋪 | 十 | | 五 | 四 | 三 | 四 | 十五 | 四九 | 十七 | 五五 |
| 白王莊 | 十 | 二 | 五 | 六 | 三 | 四 | 十五 | 五八 | 十八 | ○六 |
| 頭泉 | 十 | 六 | 五 | 七 | 三 | 六 | 十六 | 十三 | 十八 | 二三 |
| 獲鹿縣 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二八 | 十八 | 五七 |
| 大郭村 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 四十 | 十八 | 五七 |
| 石家莊 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 五一 | 到十九 | ○十 |

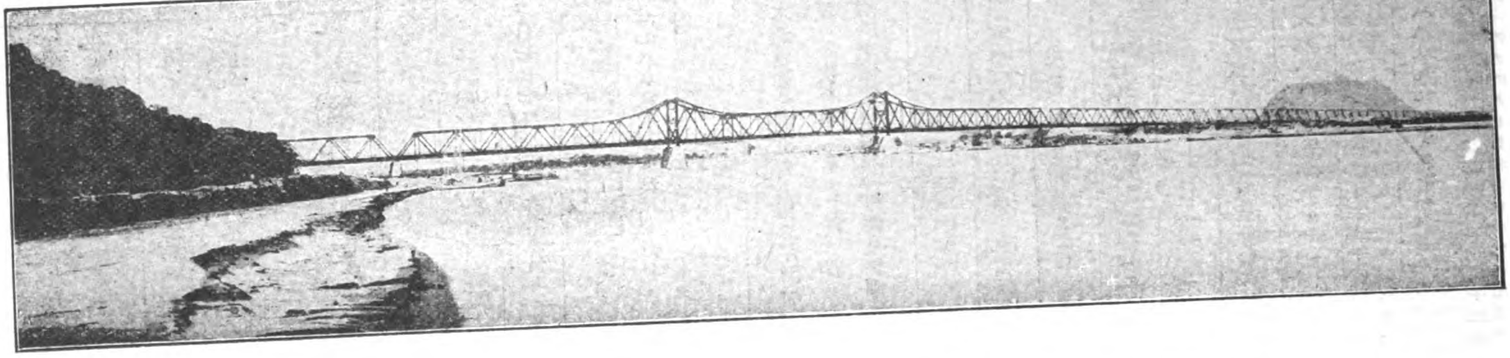

# 百祿鋼廠

## 專製著名奧國司的林器械鋼料

本廠在上海備有風鋼及局廠中所必需之高等生鋼開礦築路一切應用器具鋼料銼刀及鋼上繩索炮槍筒子并軍用各種火藥凡外洋國家所設局廠均立有承攬各國大省設有分行在中國設辦事處於上海江西路十號

Bohler Bros. & Co., Ltd.

# 津浦鐵路



## 津浦鐵路局改訂特別通車時刻廣告

本路特別通車上下開到時刻現經改訂與京奉膠濟滬甯等路客車上下銜接自本年十二月一日實行玆將改訂時刻暨各路銜接時刻開列如左

### 下行車

京奉路由瀋陽來之通車星期六日上午十鐘三十五分到天津東站

本路特別通車星期六日上午十一鐘二十分由天津東站開

京奉路由北京來之快車每日上午十一鐘二十五分到天津總站

本路特別通車星期六日上午十一鐘四十八分由天津總站開

膠濟路由青島來之快車每日下午五鐘五十九分到濟南

本路特別通車星期六日下午八鐘十二分由濟南開星期日下午一鐘十三分到浦口

滬甯路開往上海之快車星期日下午二鐘三十五分由南京開是日下午八鐘二十分到上海

### 上行車

滬甯路快車星期一日上午七鐘十分由上海開十二鐘三十分到南京

本路特別通車星期一日下午一鐘四十五分由浦口開星期二日上午六鐘四十分到濟南

膠濟路開往青島之快車每日上午八鐘由濟南開

本路特別通車星期二日下午二鐘三十三分到天津總站二鐘五十分到天津東站

京奉路開往北京之快車每日下午三鐘四十五分由天津東站開其開往瀋陽之通車星期三日上午一鐘二十五分由天津東站開

### 特別注意

客商星期六日由京來津換乘本路特別通車南行者務請在總站過車勿到東站以免趕車不及

再客商星期六日上午八鐘三十分由北京起程星期日下午八鐘二十分即到上海其由上海北行者星期一日上午七鐘十分起程星期二日下午六鐘五十五分即到北京每次需時不足三十六鐘洵屬最捷之徑順此附告

Chinese Government Railways—Tientsin-Pukow Line

Hongkong & Whampoa Dock Co., Ltd.

# 香港黃埔船澳有限公司廣告

本公司承接製造各種機器鐵路火車橋梁河海明暗輪船拖船淺水火船載客運貨大小快捷毛打輪船舉凡一切水陸起重器機爐鑊鎔鑄銅鐵器具電鍍等等工程並常有大單銅鐵螺絲角鐵鋼板鐵板等料躉賣加以本公司置有大石澳六所旱排二座以便大小船艦入澳之用洵鉅製也

諸君光顧凡有船隻裝修無論大小工程莫不應期完備庶不妄費時日又且工精料美價亦相宜如蒙惠顧請問總司理人 R. M. DYER可也

茲將各澳地址尺寸開列於後

| 澳名 | 澳底長 | 澳口闊 | 水深 |
| --- | --- | --- | --- |
| 九龍第一號澳 | 七百尺 | 面八十六尺 底七十尺 | 三十尺 |
| 九龍第二號澳 | 三百七十一尺 | 七十四尺 | 十八尺六寸 |
| 九龍第三號澳 | 二百六十四尺 | 四十九尺三寸 | 十四尺 |
| 九龍第一號旱排 | 二百四十尺 | 六十尺 | 十四尺 |
| 九龍第二號旱排 | 二百二十尺 | 六十尺 | 十二尺 |
| 深水浦澳 | 四百六十六尺 | 八十五尺六寸 | 二十尺 |
| 香港仔第一號澳 | 四百三十尺 | 八十四尺 | 二十三尺 |
| 香港仔第二號澳 | 三百三十三尺 | 六十四尺 | 十六尺 |

本公司通電處乃用 MANIFESTO HONGKONG

香港寫字樓電話第二十號

本廠寫字樓電話第十三號K

呂宋代理處 FINDLAY & CO., MANILA, P. I.

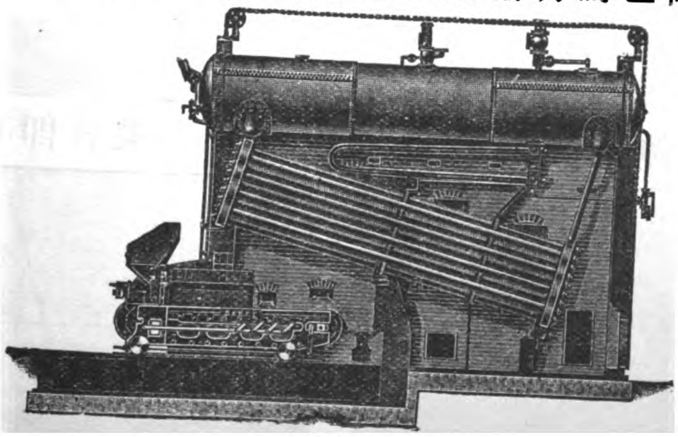
# 拔柏葛魏閣司有限公司

Babcock & Wilcox, Ltd.

## 製造特別水筒鍋爐

此項鍋爐曾經置用或經定購者計陸地所用共有一千一百萬匹馬力輪船軍艦所用共有二百五十萬匹馬力

本公司陸地所用之鍋爐與加增熱力機器及最新自行燃煤之帶鍊機器係屬相連用之於電燈紡織麵粉造紙織呢兵工造幣礦務水泥自來水等廠最爲合宜



此係陸地所用水筒鍋爐加增熱力機器及最新自行燃煤之帶鍊機器相連圖樣

本公司專造加增熱力機器自行燃煤之帶鍊機器蓄熱機器電力起重機器起卸煤之機器鋼質烟囪及輪船軍艦所用之鍋爐等

公司之中國總辦事處在上海四川路一百零三號

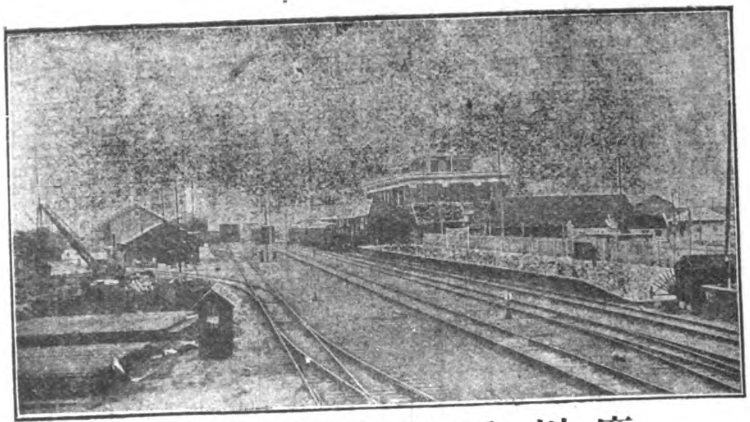
製造廠設在英德法美等國

# 廣九鐵路

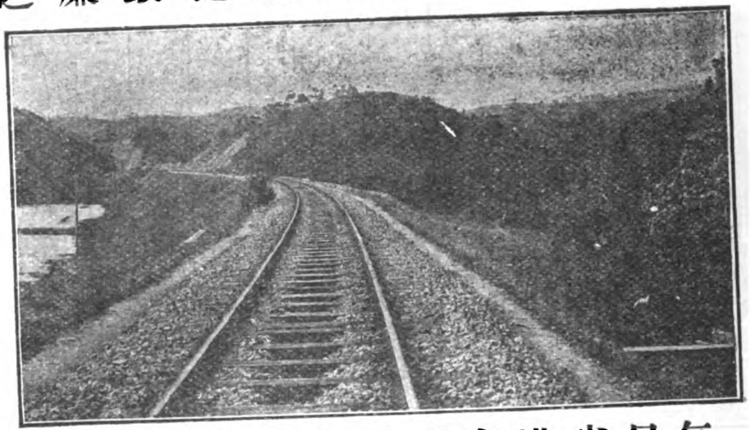
下列乃華段圖景該段八十九英里

Canton-Kowloon Railway

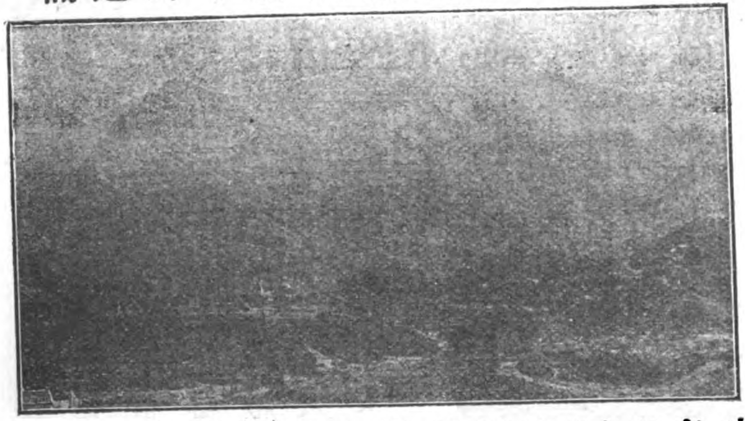
下列乃英段圖景該段二十二英里



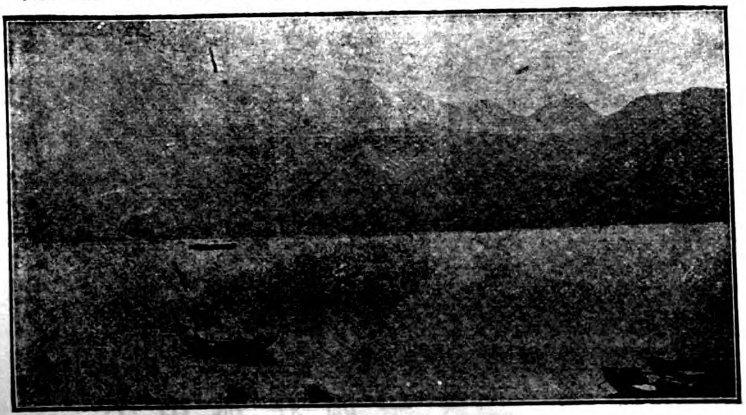
廣州香港間最捷最廉之路線兼所經各處之景緻

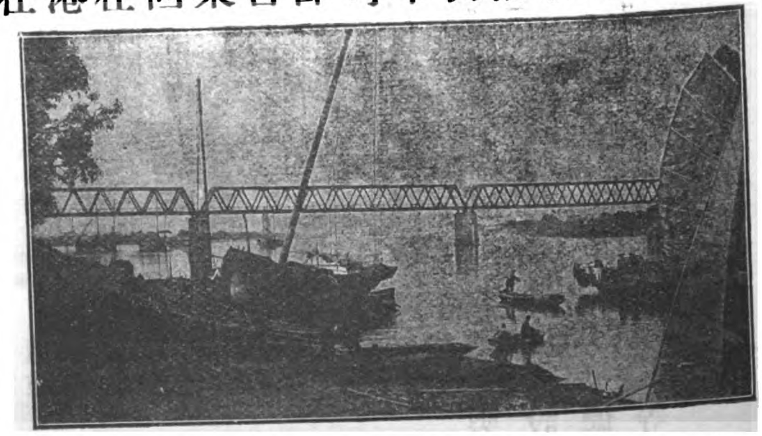


每日省港有直通快車試次來往並有西膳茶點以備搭客不時之需



富商遊客搭快車可即日來回在港在省各有四點餘鐘之久儘可從容專辦





謹將本年夏天時刻表開列於下

香港開
上午六點三十五分快車
上午十一點十五分
上午十二點五十五分

廣東到
上午十點四十分快車
下午六點十分
上午四點三十分快車

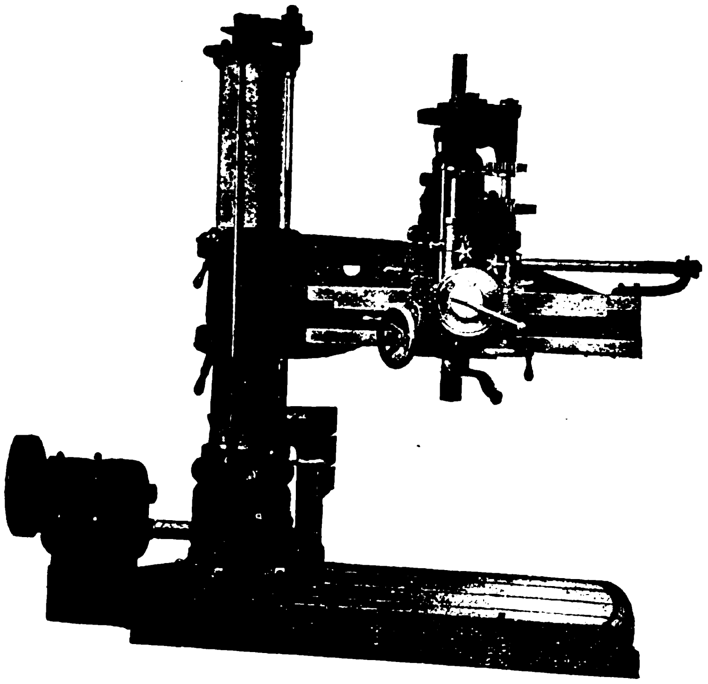
廣東開
下午七點快車
上午八點三十分
上午十二點快車
下午四點二十分快車

香港到
上午十點三十分快車
下午四點十四分
下午三點五十三分快車
下午七點五十二分快車

並備有專車租賃車費從廉如欲知詳細者請看告白或問省城及香港鐵路總局可也

# 美國機器公司

The American Tool Works



本公司專製各式車牀轉牀鉋床等久為全球所推許無煩贅述近又新發明一種**阿美利加距半徑轉牀**其靈活便利較從前各種機牀有過之無不及且**質料堅固製造精良**以之裝配各物**分量甚準**無絲毫之錯亂可為機器界中別出心裁最有價值之品其形式大小不一有二尺二尺半三尺三尺半四尺五尺六尺七尺不等或用皮帶或用馬帶均可應用若欲樣本請來函至本公司取閱可也

**總發行所美國哇哈華省新新納搭城**

# 愛鍊純鋼廠

在英國希斐爾特地方

## 鹿牌鋼

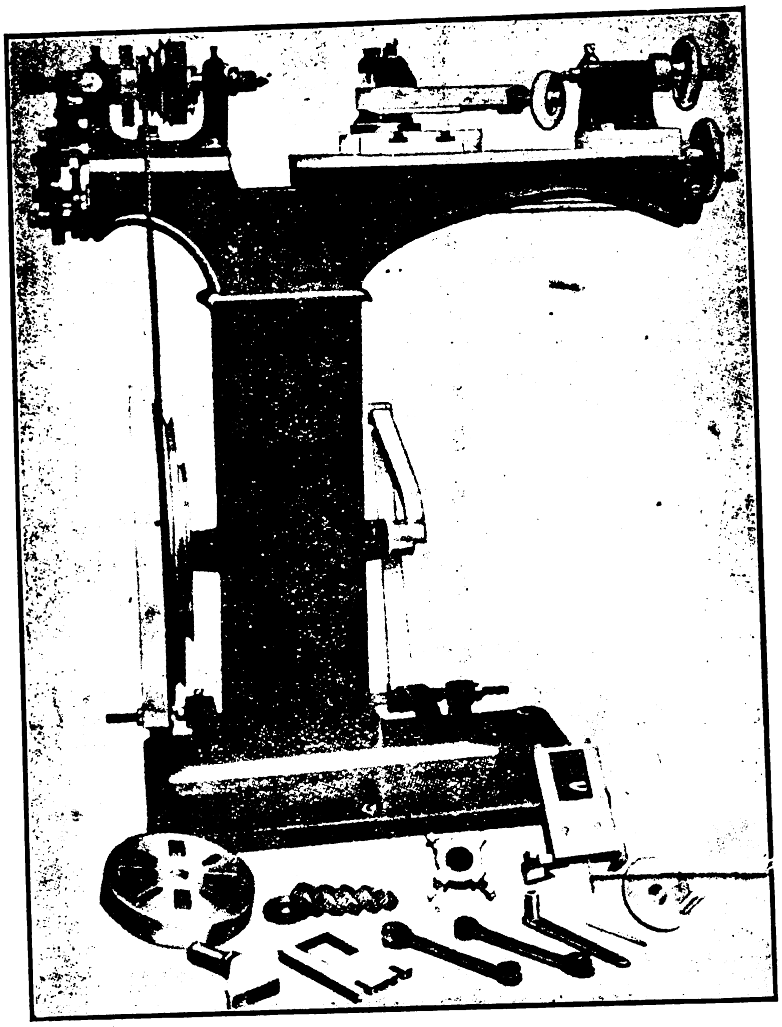
本廠專鍊各種各式尺寸鋼料為寰球各製造局造幣廠礦務局機器廠打鐵廠等處所用並造超等鎗管鎗彈吸鐵鋼風硬器具快鋼彈簧鋼兼造銼刀快絞絲鑽鋸錘鋼條鋼片汽車特別鋼料錳質碎石鋼鐵路及電車分路叉橫軌等以及碎礦鋼料並造彈球管子水坭機器一應俱全

賜顧者請臨上海二馬路外灘B字一號接洽或函致亦可

獨家經理上海漢口泰來洋行白

Edgar Allen & Co., Ltd., Sheffield, England.

# 怡和洋行機器房廣告



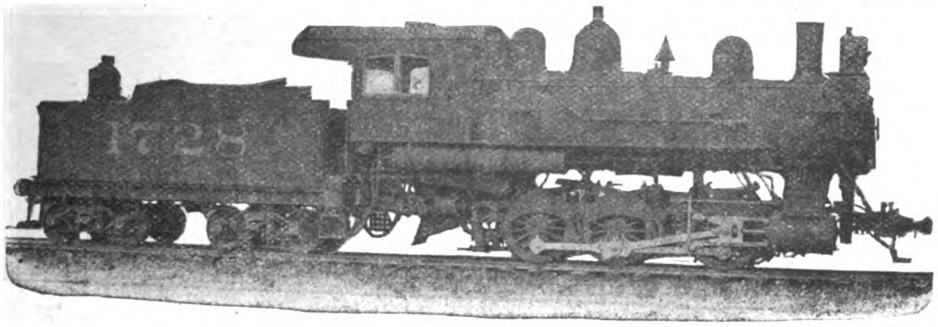
本行分設滬濱數十餘載專辦各種機器如下　鐵軌　車輪　車頭　紡織機　磨麪機　搾油機　碾米機　磚瓦　鋸木牀　造紙機　印書機　鎗礮　製革機　電燈　餅乾　火力引擎　煤氣引擎　火油引擎　鍋爐　發電機　開礦吸水機及馬達引擎等並常備現貨如下　火力引擎　煤氣引擎　立式鍋爐　吸水機　手搖吸水機　大小車床　修機應用各件　淨茶機　紙百　配更　皮帶等其餘一切零件不及詳載倘蒙賜顧無不歡迎定價亦格外克己請至圓明園路本帳房接洽電話一零九六

Jardine, Matheson & Co.

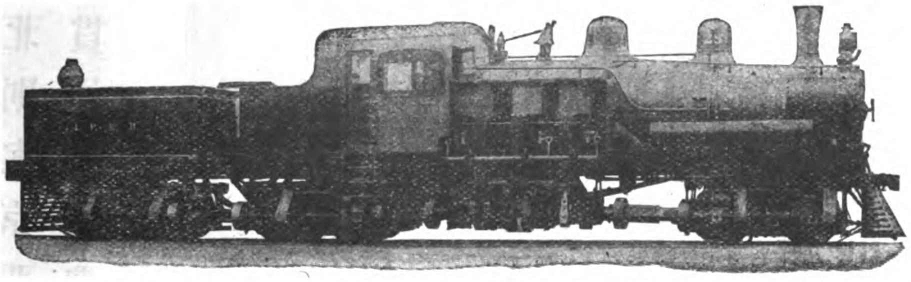
# 賚瑪火車公司

Lima Locomotive Corporation

本公司專造各種火車頭式樣玲瓏質料堅固或用橫桿式或用齒輪式務求輕便靈捷至速率及拖重力尤非尋常者所可比擬



此圖爲本公司代美國南部鐵路所造之十五輛二十寸暨二十六寸轉轍式之火車圖樣



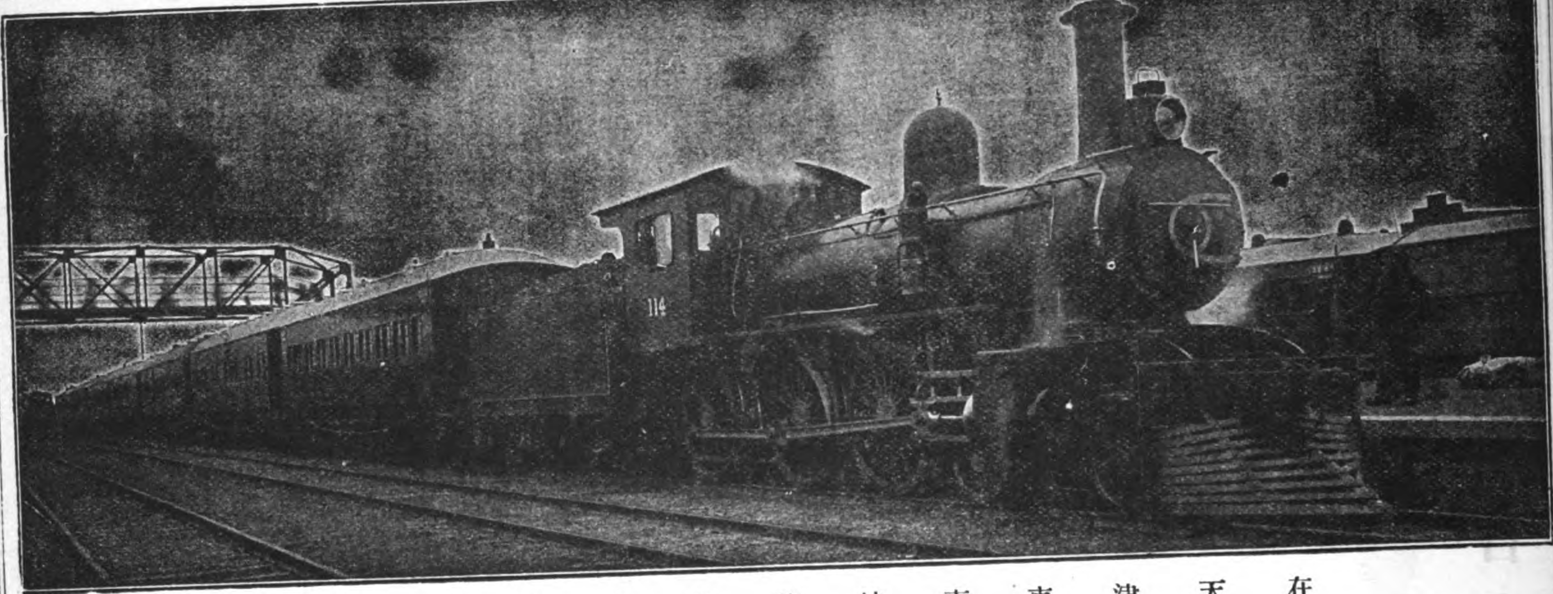
此圖爲本公司代中國京張鐵路所造三輛齒輪式一百噸重之火車圖樣

製造火車不獨求其堅固而且取其靈活本公司各種出品久爲東西各國所推許近年更大加擴張所聘工師均爲歐美著名專家所用機器亦均係新式以故所造各種車頭既能堅固復靈活而穩妥不惟於康莊平坦之大軌道能行止自如即以行駛於山嶺曲徑之小軌道亦能旋轉如意且特製齒輪式之拖重車其重力能拖十噸至一百五十噸其餘花樣繁多均載B字樣本中欲閱者來函索取當即寄奉

總發行美國哇亥俄省賚瑪城

分售處中國香港上海廣東天津新旗昌洋行

# 京奉鐵路廣告

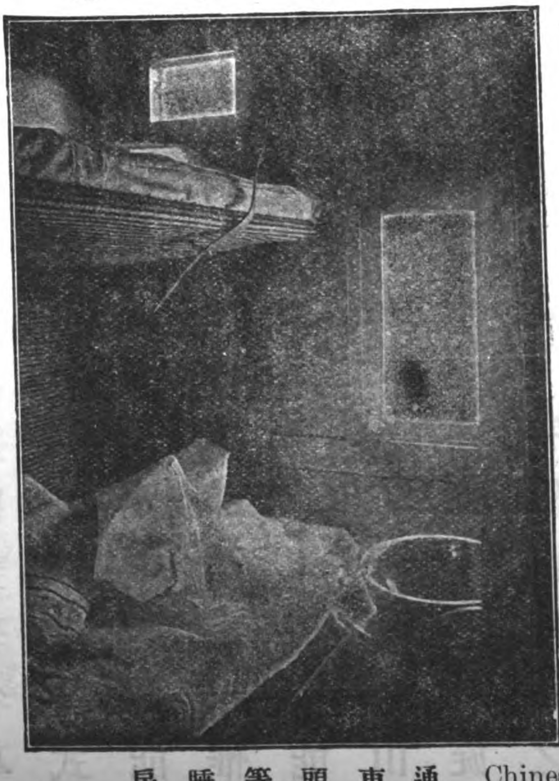


在天津東車站停放之床位通車

啓者本路路綫係與附近各路互相聯絡東則接連南滿路可達歐洲南則接連京漢路可達長江一帶商埠由京漢路中心點幷可達至正太路之太原府道清路之開封府汴洛路之河南府北則與京張路綫相連可達至萬里長城四面貫通無遠弗屆本路綫所經名勝如北京瀋陽之皇陵殿宇天津之北方商務總匯唐山之工廠礦務山海關之萬里長城牛莊之南滿洲商埠俱屬繁盛之區足供遊覽至京瀋直達通車每星期來往一次備有飯車睡房精潔適意以便行旅而廣招徠倘蒙

光顧毋任歡迎之至特此佈告

北京車站



通車頭等睡房

Chinese Government Railways of North China

# 美國紐約克美孚油行廣告

The Standard Oil Company of New York

本行所出之**鎖可聶瀝青油**爲生瀝青油由格致術所製成如欲引長其效用黏合其物質柔固其原料以及天氣溫熱度之容納無不隨心所願

**鎖可聶瀝青油**可用於任何堅硬之物不加他種之油亦合於用

下列之各處均可用此**鎖可聶瀝青油**

建築永久之道路　屋頂水路工廠地板拍球圍場　水涵管洞

用於鐵路車結處電桿電柱等處　包鋼質建築物及溝管等物

**鎖可聶瀝青油**可用於法侖表熱二百二十一度之融點故於最熱之天氣亦合用適度也**鎖可聶瀝青油**非試用之物乃合衆國多年實用之油功效最著之物品也

欲知詳細請函達上海五馬路十一十二號

美國紐約克美孚油行光油部可也

# 克老掰德律風器俱供應公司廣告

Kellogg Switchboard & Supply Co. Kellogg system.

克老掰公司所出之各種德律風器俱爲世界最完備最高上之供應公司其出品爲他公司所不及者最大之電池即用多轉轍板故於各處均合時宜如工部局小鄉鎮旅館醫院鐵路礦務處工廠以及輕便手攜之德律風無不各處通行且克老掰德律風之筒能永久不壞因筒之內外非錫所包乃銅質所製以最上等之橡皮鑲嵌而成又以壓機壓實故使傳話者聽話者均聲浪清細無異面談也三十二號愛字聽筒及三十六寸電絨毛繩售價英金六仙令若欲知詳細者請來函索取本公司之器俱樣本爲荷

**公司開設美國**

舊金山　支加哥　甘色斯

# 勒克洛炸藥

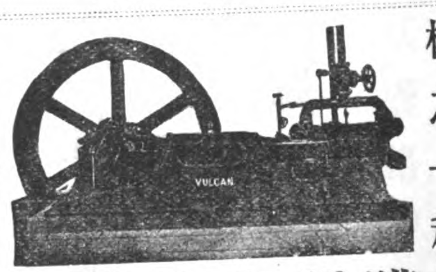
又名勃辣司丁泡特係**開山開礦用最大爆力之炸藥**其質共有二類一硬質一流質兩種未參合時分裝二處決無炸裂之患幷無須多費存放在火藥棧倉內祗置放乾爽地方不論何處均極相宜此藥參合後**較之別種炸藥更爲穩當**藥粉裝法用一布捲筒對徑六分或至二寸長六寸半或至八寸爲度即可應用製造廠林洛泡特公司在美國紐約華爾街一百零六號

Rendrock Powder Co.

美國舊金山

# 瓦爾根製冰機器廠

Vulcan Iron Works




圖爲製冰機之一種

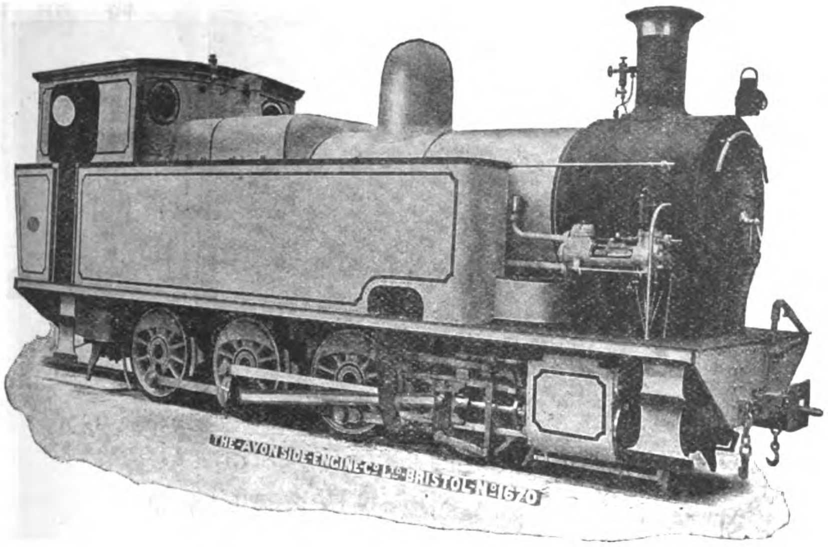
**本廠專造各式製冰機器運銷各地蒙購辦諸君謬加推譽稱爲靈便合用本廠自當精益求精以期仰副　雅意現在製備各種新式機器或大或小花樣俱全如欲取閱樣本函索即奉特此佈告**

花色繁多不及備載

電碼 "Vulcan" San Francisco

# 愛望賽機器公司廣告

AVONSIDE ENGINE Co., Ltd.




本公司專造汽機及引火之各種火車汽機

本公司開設英國百立司篤耳

電報用英字請看英文告白

# Roofing Malthoid

麻鏍屋頂氈已爲上等工程師及繪圖師詳說之且爲上等工匠用在遠東一切奇異房屋之中

麻鏍屋頂氈已試用多次實可認爲屋頂氈之標準

安置此項氈時須照本公司章程鋪釘方保無虞

如要說明書及樣子請向最近之代理店取閱可也

## 中國代理處

上海 怡泰洋行

天津 仁記洋行

漢口 太平洋行

香港廣東 瑞記洋行

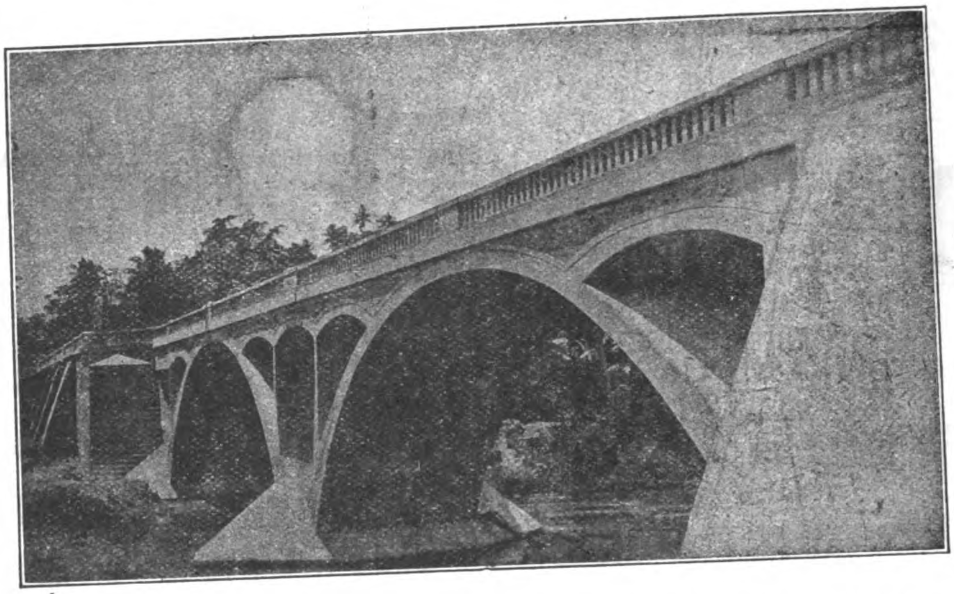
# 青洲英泥

Green Island Cement Company, Ltd.

燒青泥磚

大小明暗瓦溝

水斗等器



花階磚

大階磚

火爐磚及泥

亞路卑扒拉波歷握橋用二千五百桶青洲英泥而建成

本行在別埠代理處

上海支行

日本支行

天津支行

代理分銷處

架剌吉打　端拿摩利臣公司

新加坡　士滔片民

長口及漢口壹帶　渣甸洋行

仰光　希活

孟米　士片拿公司

庇能　列公司

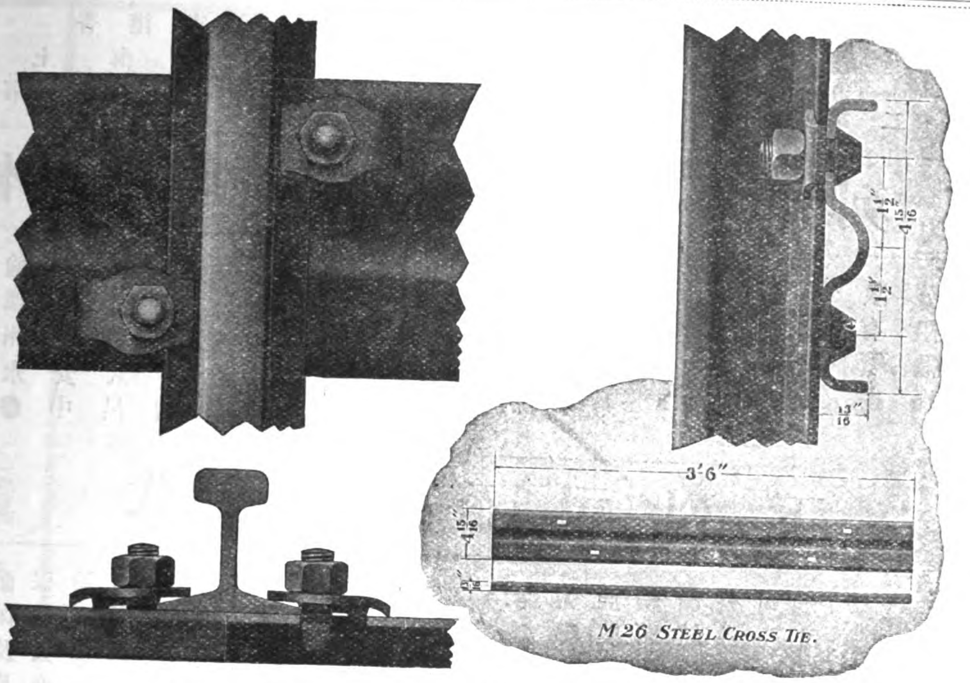
中國海岸及臺灣　渣甸洋行

非律賓羣島全權代辦人小呂宋威廉晏打臣公司

# 美國鋼鐵公司

上海江西路廿四號A

電碼 Steelyard Shanghai




此圖表明本公司所造各種鐵軌及繫結鋼條輕便而且堅固

鋼鐵各物取其堅固尤取其靈活非徒以笨重爲可貴也本公司所造各種鐵道及機器等件并鍋爐上應用之各式繫結鋼條既稱堅固復能靈活久爲全球所推許玆將自製鋼鐵諸品節錄於左

鐵軌　接軌鋼條　鋼節　鋼釘

鋼板　建築所用鐵柱　鐵條

鐵板　鐵管　各式角板　火車電車車輪　鑛穴中或油井內所用一切鋼鐵機器　各式輪軸

橋梗鎔鐵爐以及各種鐵甲板

以上所述特其大略其餘名目繁多不及備載　惠顧諸君請移玉至本公司面議可也

United States Steel Products Company

# 新旗昌洋行

本行佈設英京神戶廣州香港上海天津紐約等處專辦出入口貨代理船務及抽佣經理人

香港書信箱號數第壹百三十一號畢字
上海郵政局信箱第八十四號
各枝行掛號電報碼用旗昌二字

## 本行總司理各公司列下

● 非律賓輪船有限公司
● 維新織造有限公司
● 廣州省城置地有限公司
● 永安人壽保險有限公司
● 中呂輪船有限公司
● 勢力電燈有限公司
● 青洲英坭有限公司
● 香港麻纜織造有限公司
● 均益按揭有限公司

## 代理各公司列下

● 厘拉仁士洋面保險有限公司
● 大洋海面保險有限公司
● 泗水海及火燭保險有限公司
● 英北及商務保險公司
● 羅天仁保險有限公司
● 煜舍燕梳有限公司
● 北美燕梳公司
● 上洋軟葉及紙料有限公司
● 美亞輪船公司
● 美滿航務公司
● 祁連航務有限公司
● 香港電車有限公司
● 楊子燕梳有限公司
● 地球洋面保險有限公司
● 大洋意外保險有限公司

## 上海英商新旗昌洋行機器處廣告

本行樣子房現設江西路六號電話三四八七號

本行經理各種機器如紡織碾米榨油磨麵造紙開礦墾荒抽水挖坭大小火輪全副引擎鍋爐及火車頭客車貨車鐵路材料並自來水一切物件其餘鋸木車鑽刨床各式大小引擎鍋爐及磨電機發動機煤氣引擎發煤氣機以及得律風電燈電氣應用一切另件等具色色俱全均係外洋著名廠家特別精造新式玲瓏堅固但各項名目繁多未便盡載倘承賜顧或蒙函詢當即竭誠詳細奉答價亦格外克己以廣招徠尚祈惠臨方知言之不虛也

## 在中國全權代表各公司列下

滅隨路城火車工廠
澳地士依里威滔公司
波路深孖汽喉公司
拋亞瓦斯合股有限公司
拋亞不厘有限公司
李孖普鐵廠
倫深未禪及制花利有限公司
盧參士麽滔有限公司
船主琴實使順有限公司
所利雲機器公司
為拉列地有限公司
華臣製造公司
和蛙連毛滔工廠

裝鐵路燈工廠
壓活公司
占士科士打有限公司
占士提邊士公司
立可父子公司
可夫文製造公司
贊鶴建臣父子有限公司
耳昔則臣父子有限公司
精建兄弟有限公司
奇布尼及則給士製造公司
廉孖車頭及機器公司
文專麥士謂及摩公司
妙千斤壓不歷其滔公司

美國布魯亞公司
美國鋼線公司
大英靴路士比電線纜有限公司
班尼士製造公司
比厘路公司
表花盧不歷鞭公司
表花盧士派士厘公司
布律端父子公司
插父子鎖鑰與銀箱有限公司
地吐律滔路公司
的有限公司
贊的建臣公司
胡路扶公司

Shewan, Tomes & Company

# 美國鋼鐵公司

United States Steel Products Co.

本公司自剏設以來歷有年所所售各種鋼鐵品久蒙交口稱譽無煩瑣述惟近來實業發達各物之需用鋼鐵者或大或小品類甚夥苟祇備其重大者而將各式細小者付之缺如則必不能應購者之用本公司花樣繁多大而至於軌輪機軸小而至於日用雜物之微凡屬鋼鐵品無不色色俱全以備貴客隨意購用至貨物之精良價目之低廉尤爲得未曾有賜顧者幸垂鑒焉此佈

## 鋼鐵軌

自最重之火車軌至各種輕便鐵道及開礦運木或電車等所用

## 建築品

鋼節鐵槽角鐵鐵鍋鋼板鐵板礦中或油井內所用鋼鐵物件以及各種車輪

## 輪軸

火車汽機及電車等所用

## 翻沙機

機器及各種附屬品

## 鐵箍及鐵皮

用以箍桶束棉花捆羊毛或皮包等物

## 鋼板

用以造船造汽鍋水鍋等件者

## 馬口鐵

可製各式雜用物或鍋爐等件

其餘如馬脚鐵鋼絲生鐵硬煤烟煤等名目繁多不及備載

上海江西路二十四號A　電碼 "Steelyard" Shanghai

# 美國派愛而車頭電燈公司告白

Pyle-National Electric Headlight Co.

下圖表明用二萬二千支光派愛而車頭電燈之功用

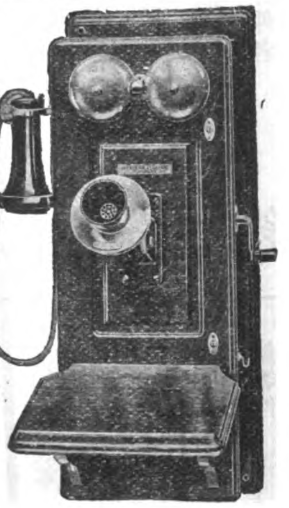
此圖的係攝自美國鐵路車站其攝影之地點相去

車頭有半英里之遙足徵派愛而燈之功用非小

派愛而燈能發有力明亮之光可使車頭司機者之視線能達半里之外且使其能瞭視一切可避危機派愛而燈之功用上已略言之矣總之人咸樂用此種燈因知其無美不臻也

# 西方電氣公司廣告

The Western Electric Co.

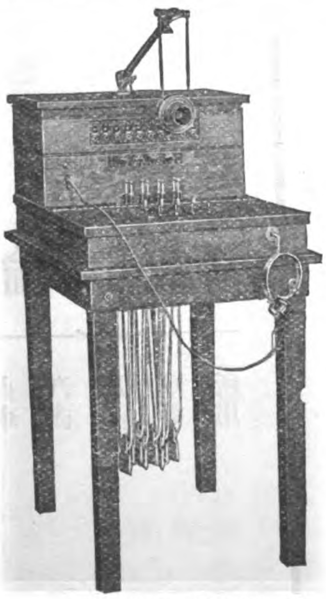


第一三一七號磁氣發電機德律風

"SAVE TIME AND FREIGHT" WESTERN ELECTRIC COMPANY "TELEPHONE OUR NEAREST HOUSE."

若欲研究貴處德律風機器是否傳聲清淅必須先看所用之各種器俱有否　活司得商標之牌號是否爲本公司所完全製造者本公司所製電氣器俱完美可靠全球馳名且爲世界最老最大之製造各種電氣器俱之製造廠且德律各種機件亦爲本公司製造物品之一小自私家之德律風起大而至大城內全體之德律風如配電石板裝德律風家所用之配件防護俱線纜線件手器隔電俱等物件

中國經理處上海西方電氣公司
小呂宋經理處愛令加格令加洋行
日本經理東京日本電氣公司



第一八〇〇號分段配電石板

EVERY BELL TELEPHONE IS A WESTERN ELECTRIC TELEPHONE

上海西門子電汽廠製造各項電料總公司在上海仁記路B字一號凡青島漢口天津北京香港廣州等處皆有分行且各處皆有高等工程師以備　賜顧諸君垂詢一切本公司所代表之各大公司如下

倫敦司脫福特之西門子兄弟電機製造廠

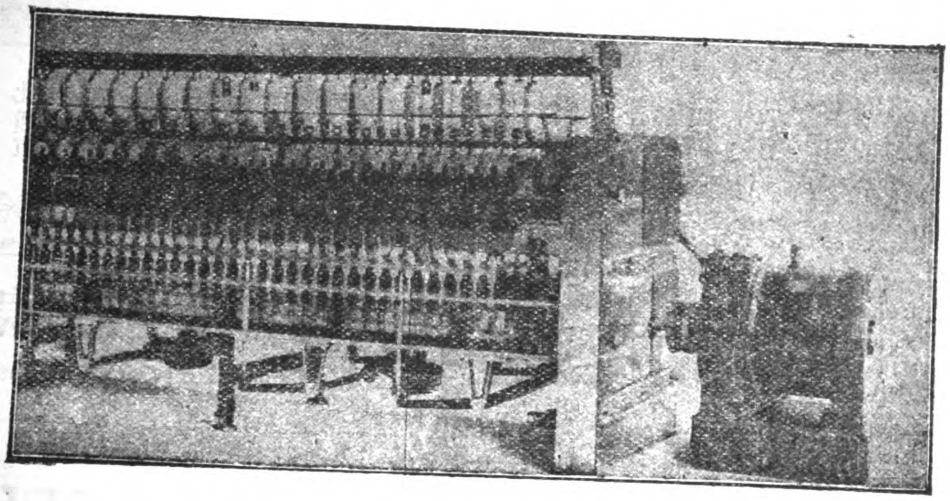
倫敦和而或區之西門子兄弟公司

柏林拿能騰之西門子考而司克公司

柏林立香別爾之旗勃路達西門子公司

柏林奴歐別爾之西門子盧荀浮克公司

Siemens China Electrical Engineering Co.



本公司之華香燈係世界上最光明最省電之燈本公司之泊老套電汽車用軋沙林或電汽運動此圖係三面形交流電機與引擎直接奉天吉林蘇州灤州及青島等處皆由西門子裝置此項電機

各項電機之圖畫及價單如蒙

賜顧卽可送呈

本公司製造各項電燈大力牽引各機件以及邦波轉滾起重各電機查律水汀拖朋得力風電報及透骨電光機啞重氣機海底線炭絲燈蓄電池電汽車軋沙林汽車等俱備

# 英國康模造車公司

Commercial Cars, Ltd., Luton, England

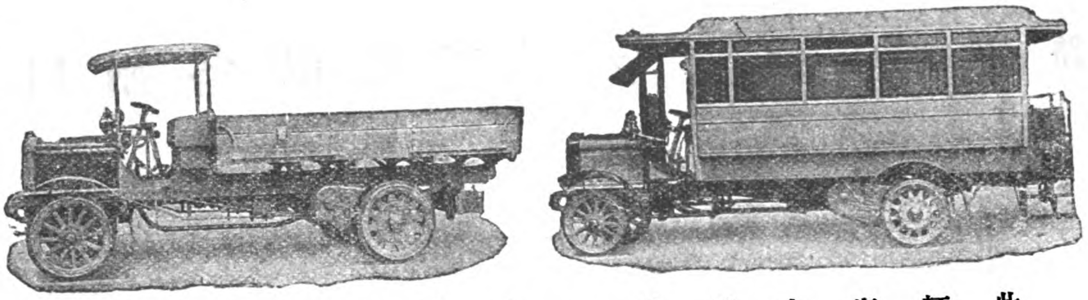
格言曰觀運輸機關之隆替足覘以國家之盛衰本公司專造工藝界及公家所用車輛工料堅實精良無比取價低廉如貨車灑水車救火車客車等均可

康模牌

"COMMER" CAR
REGD TRADE MARK

車輛

按式定造必能合意所裝油機燃燒煤油或汽油在東方應用最爲便適本公司總廠在英國勒頓城內英國康模造車公司謹啟



此種車輛裝有汽油機大小分爲十四號載重一噸至七噸載客十位至三十四位機器有二十至一百馬力

# 赫司耳電廠廣告

Hasler Telegraph Works.

本公司開設倫敦維多利亞街第二十六號專造最上等機關行程速率表及記錄表若欲購置者請函達訂購可也

# 勒特烏文公司

Owen Bros.

"ROSPHALTIC" REGD. No. 336682

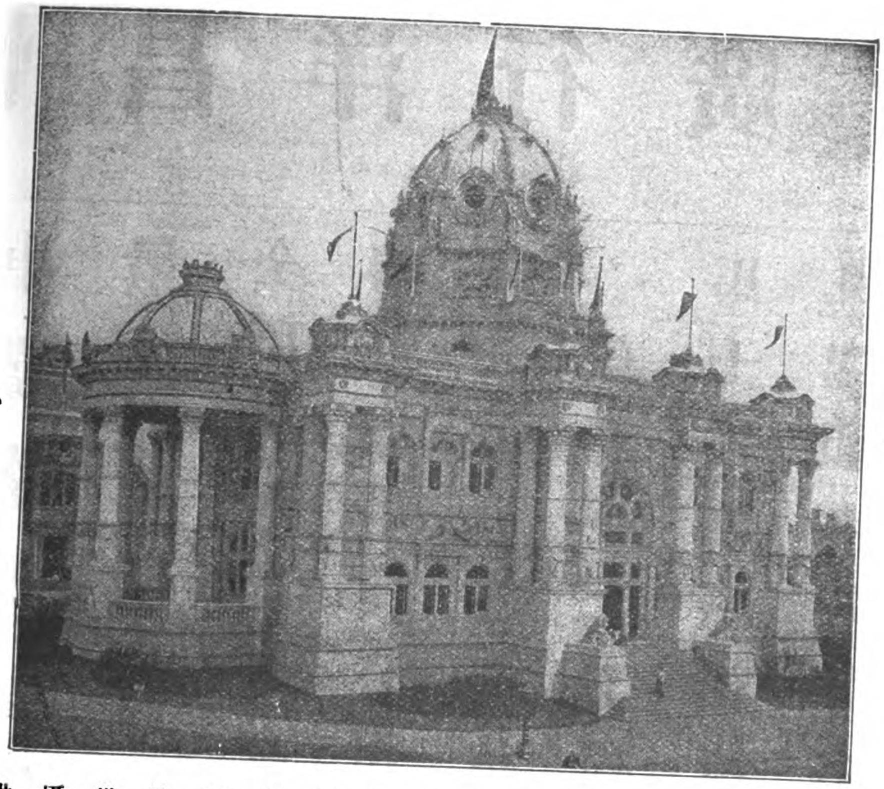
HULL

羅司法鐵漆敷於鋼絲鐵柱之上能永免鐵銹濕氣電氣均不能侵入天氣寒暑隨鐵漲縮此油質地純淨永保無患

勒特烏文公司

總行在英國黑耳城

上海怡和洋行總理



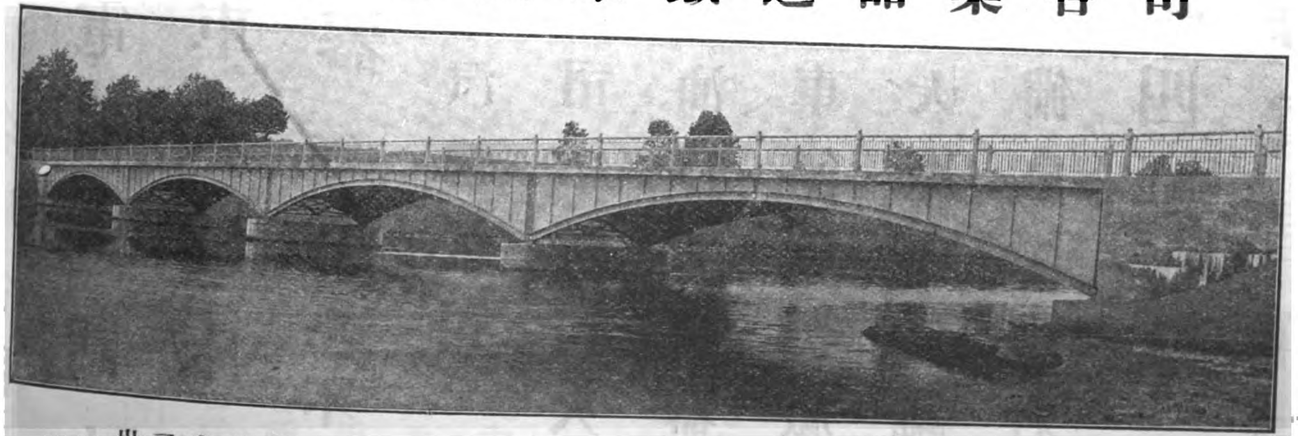
此爲巴蘭夢羅和平宮其工程之堅固久爲世界所稱譽然建築時需用鋼鐵至四百餘噸之鉅皆本公司所供給特攝之以供賞鑒

# 美國鋼鐵公司

電碼
"Steelyard." Shanghai

經理處
上海江西路二十四號

本公司專辦各種建築鋼鐵品並包造鐵橋鐵房自來水煤氣塔及各種鐵管等物無不全備



此爲美國牛查西省克那基湖哈爾門橋橋共四彎每距九百二十四寸約重二十七萬一千餘噸計用鋼鐵甚夥均屬本公司之出品

United States Steel Products Company

# 慎昌洋行廣告

Anderson, Meyer & Co.

本行設立已久遐邇馳名專辦歐美各國名廠各種機器所有電燈全廠機器及各項電機電話火車鐵路鋼軸鋼鐵各軌各式車牀刨床測量繪圖儀器並各種汽油機器等件無不俱全所有本行經理之

美國愛特生電汽總公司

英國湯浦電機公司

浦特製造火車公司

漢司火車燈公司

施端林電話公司

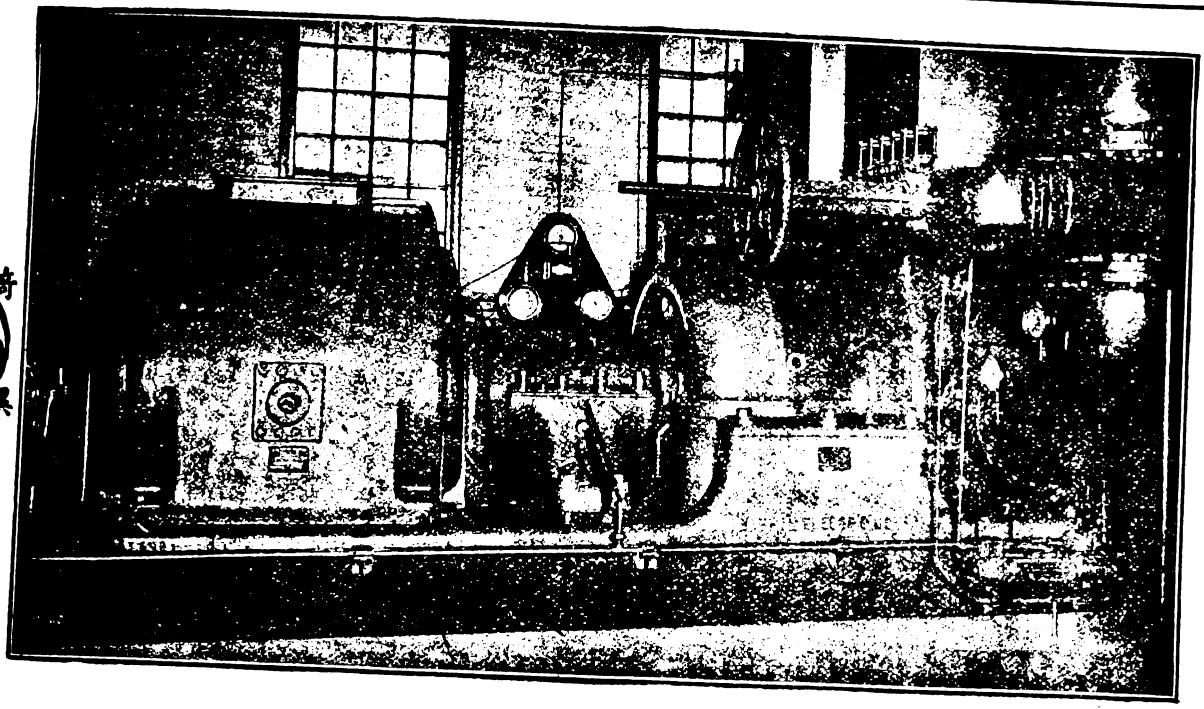
范落汽油行船機器廠

右孚亞士工程儀器廠

鄧特摩阿車刨機器廠

馬士維爾石棉廠等均係環球著名各大廠中外馳名凡賜顧者均知各名廠機器之完善美備也 諸君欲知詳細請移玉至上海圓明園路四號

中國經售處上海慎昌洋行



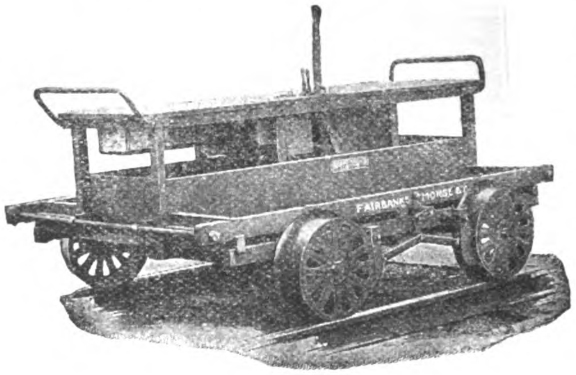

美國紐約**普通**又名**奇異電汽總公司**爲環球獨步世界第一之電汽製造廠與英國著名**湯輔公司**係屬聯號性質近年新發明一種**透頻汽機** 係與磨電機直接相連而用便利異常且自七啓羅滑脫推至二萬啓羅滑脫其汽機之工料無不堅固精良而用煤亦省使用極靈即裝置機件亦能省佔地位誠現今電廠**惟一無二之電機也**此機發明後各國爭相購用僉謂較舊式之電機其使用之利鈍相去殆不可以道里計**又新造一種光明省電之曼士達拉絲燈泡** 此燈泡乃本廠獨家創造係以數十年之電學經驗參照美國國家頒定規程研究製造而成故質地既極精良燃點尤能經久發行以後風行全球因其能省電力而光線之足備反出各種新式電燈之上因之銷路日廣愈推愈遠洵爲**電燈泡中之魁首又奇異商標各種電氣風扇** 省電多風用久無炙手諸患可免一切危險**又電話機器** 式樣玲瓏裝置簡便內地躉購且可代爲裝置餘如各種電燈全廠電機家常裝用之電汽器具並礦機鑽石機升降起重各機轉滾提鍊電機傳電器電汽船大小各廠應用之電機幫浦潔淨機貯水所發電機避電測電等機泉水發光機以及各種海陸軍用電光照遠燈電扇轉動等機凡屬於電汽各項大小機件及各樣附屬之件無不完全齊備　賜顧諸君欲知詳細請　駕臨**上海圓明園路**四號本行寫字間接洽無任歡迎此佈

**中國經理處上海慎昌洋行**

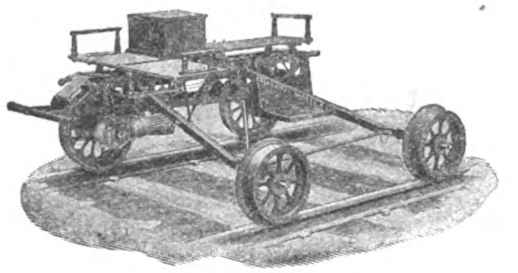
General Electric Company

# 美國反白司鐵道汽車

站工監督修路工頭及扯號旗人所用該車造法極為簡便用法甚易穩而且快如用載客及載官場此車式樣甚多大小不一請查目錄第九百五十六目頭FY




# 鐵道材料



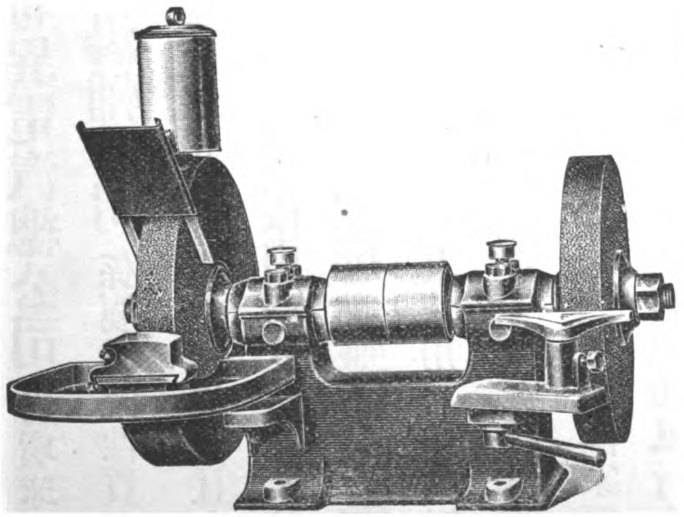
油引擎汽力及電力抽水器電燈器運卸煤斤機器轉盤及吊橋機器手車推車及一切應用材料無不完備請查目錄第九百五十六目頭GB

中國經理處 上海信亨機器公司 香港天祥洋行

Fairbanks-Morse Railway Motor Cars

# 倫敦愛茂來工廠有限公司廣告

The London Emery Works Co., Ltd.



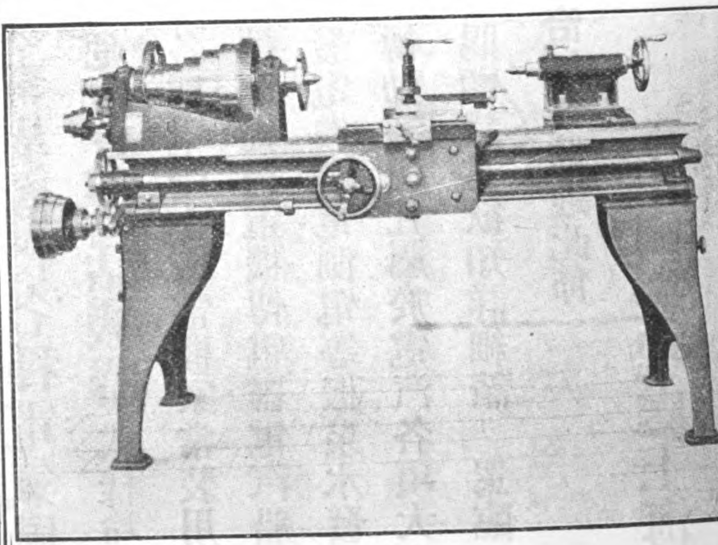
此圖為雙頭愛茂來棧式磨機其全體均為生鐵所製軟鋼磨心直徑一寸其軸枕均為白色金屬類磨心傍有緊鬆之滑車排於左者可磨潮濕之物因配有水槽碗架蓋頭及墜俱右邊則配有普通磨件尚有最好質地之地球牌愛茂來輪盤兩俱大十二吋厚一吋半

此項磨機亦可大十四吋厚二吋及大十六吋厚二吋之輪盤

若欲知圖樣或說明書可來函索取

工廠開設英京倫敦土丁南英雄工廠

# 用電氣以節寶耗



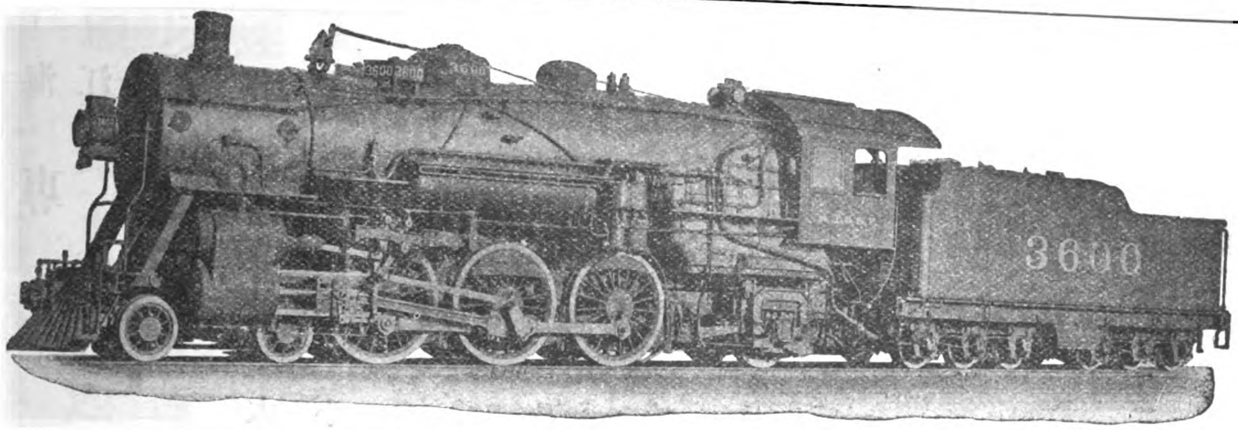
電氣一物利用甚溥用以裝修各項機器非特工作較人力為速而耗費亦可節省因其出貨多而成事易也凡各機器廠欲裝置電氣馬托或鑽頭磨刀機無論活動與否均可使之流利活潑所需電力或交流或直流及電鎊之多寡均當隨意裝配賜顧諸君幸垂鑒焉

德國蜀赫廠啓

Schuchardt & Schütte

# 巴爾威機器車頭廠

The Baldwin Locomotive Works



愛克生討庇格散打非各鐵路之太平式車頭

美國搭客之快車中其大半皆有本廠之太平式(四｜六｜二)機器車頭所拖帶此項車頭機器能載重力拖帶重車因機器內包函之力足使速率按時增高也

汽筩長二十六吋闊二十六吋　主動輪直徑七十三吋

汽機壓力二百磅　火爐佔地六十六另十分之七方呎

熱水面積四千四百四十三方呎　加重熱水面積九百八十方呎

主動輪重十七萬二千五百五十磅　機器共重二十八萬八千七百磅　拖力四千一百磅

太平式之機器車頭爲愛克生討庇格散打非鐵路所有爲近世最新式之機器見上圖

此條鐵路爲乘客最多故車行之次數亦多辦法亦妥善

此車頭用油爐特意擴充其極大之力每邊之主動輪之重限五萬八千磅

此項機器已爲本廠帶往巴拿馬萬國賽會場之物件中之一

中國經理　上海 天津 香港 漢口　瑞記洋行

日本經理　東京舍爾法辣薩有限公司

# 美國鋼鐵公司

上海江西路二十四號　電碼 'Steelyard' Shanghai

**專運美國鐵管公司各種物品**

並製各式鋼鐵自來水自來火蒸汽等氣管

大小自八分之一至三十寸

隨意配合無不適用

**汽鍋上應用之鋼管**

質料或剛或柔式樣或大或小尺寸或長或短

各式井內所用管子

**無縫煤氣管或煤油鐵管**

其重量能抵三千七百磅壓力

用於各種大壓力煤氣空氣亞馬尼亞及炭氣等物最爲合宜

**空心鐵柱**

用以建築電車軌道電桿德律風桿及各種電氣柱枝

其外尚有各項工程應用之鋼鐵管子

及自來火自來水龍頭等件一應俱全

United States Steel Products Company

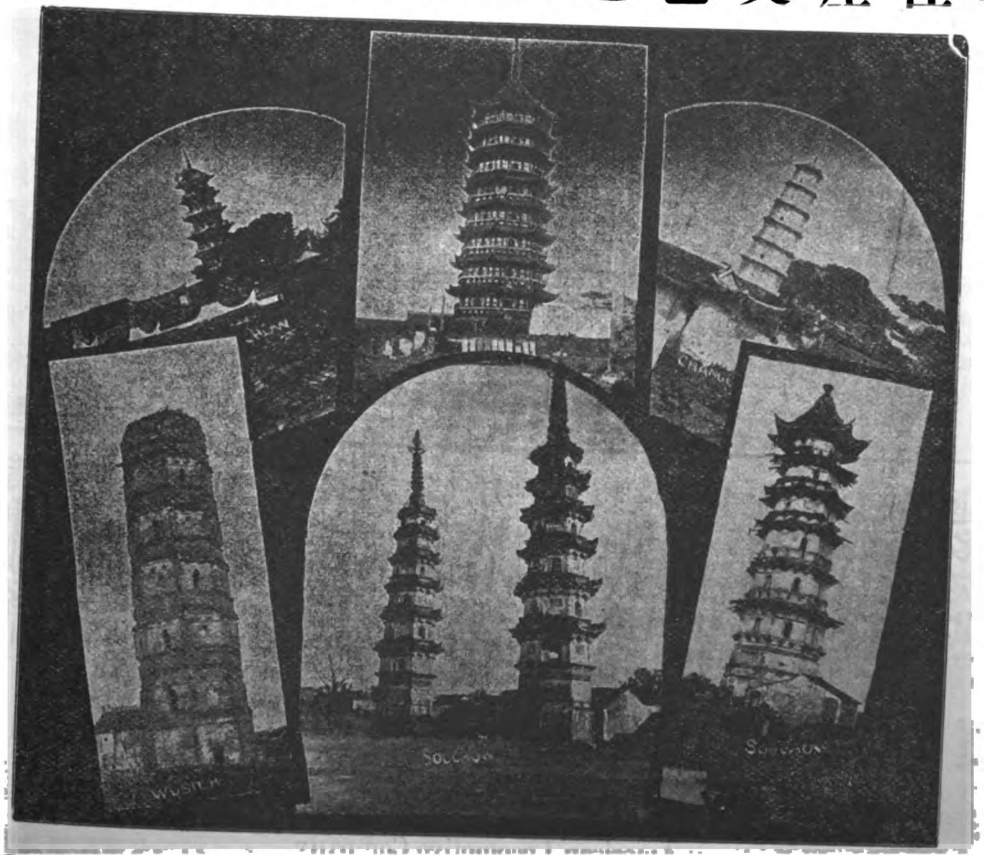
# 滬寧鐵路廣告

Shanghai-Nanking Railway

啓者本路工程均照歐西頭等鐵路最新款式建築軌道堅固車行穩捷往來時刻必依規定各站之候車客房停車月臺不但地方寬敞布置亦極周密往來搭客無擁擠窒塞之虞各等客車座位舒暢氣候咸宜頭二等之車尤爲美麗無匹電燈電鈴電扇厠所盥室色色完備並有餐車隨行以備搭客不時之需西膳茶點酒水俱全價廉物潔衛生合宜每晚加走夜車以便行人睡臥車上設有床位備客休息至淞滬一段之設施亦與幹路無異各站及車上之員司夫役招待搭客處處周到運貨亦甚穩速凡於交通上有益者無不日事改良以臻完備久蒙各界所贊譽倘承

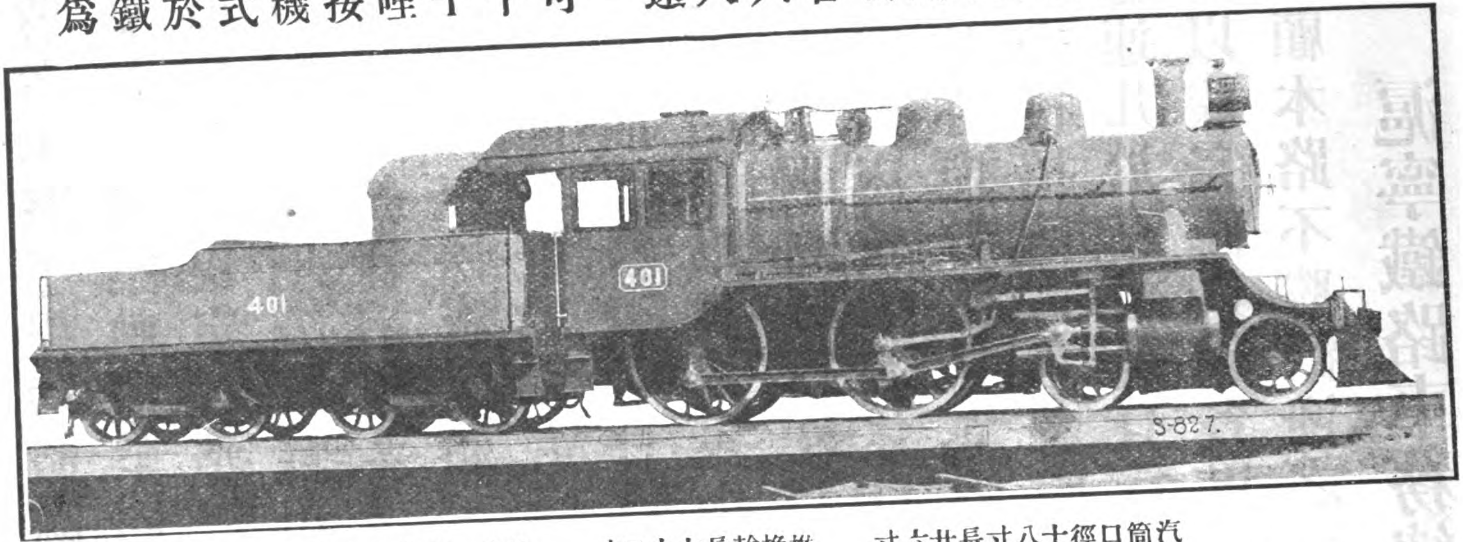
光顧本路不勝歡迎之至

滬寧鐵路車務總管敬啟



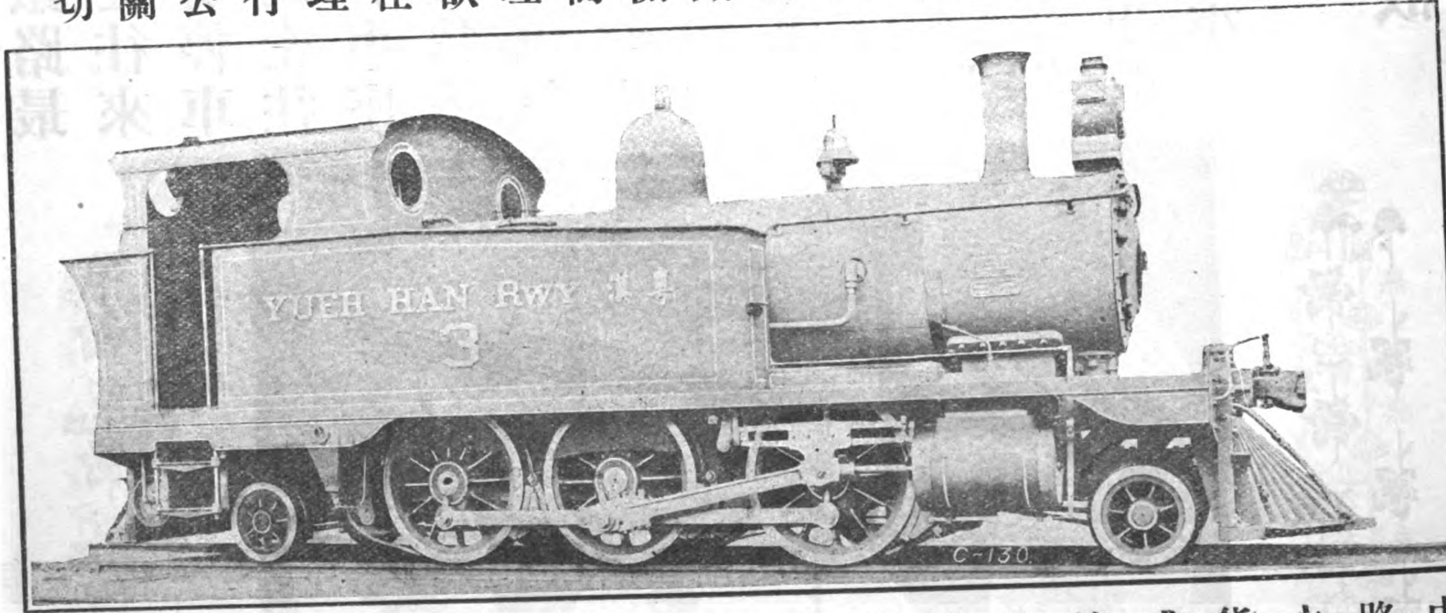
# 美國製造火車公司之火車極合用於中國鐵道

美國所製造之八輪火車頭即近時朝鮮鐵道所用之八輪火車頭甚爲合用已著明效拖客車至六輛或八輛其速力計一點鐘可駛二十至四十五英哩之遙按此種機關車式樣用於中國鐵道尤爲適宜




汽筒口徑十八寸長廿六寸　推挽輪長七十二寸　拖力一萬七千九百磅

火車頭之製造也在購辦者無不以最新式最適用爲貴而製造家亦必以最新式最適用者求合於購辦者之心爲能達其目的夫果欲合購辦者之心則必須經機關師之幾番商榷始可辦理如　貴客欲與本公司在中國之經理處三井洋行面商則本公司當派機關師就商一切概不需費




中國粵漢鐵路之六輪雙水櫃車拖帶貨車或客車或貨車客車連帶之列車其速力與上圖記八輪車頭快慢有異者因此車速力較小拖帶列車之數遂少但前後有兩小輪可無旋轉機而能進退自如故駛行之時便捷多矣其特別出色之處卽在此兩小輪也

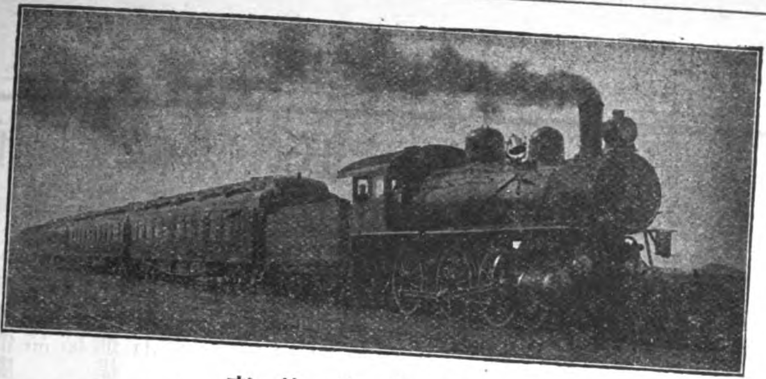
在中國經理處三井洋行上海天津廣東漢口香港廈門盛京

本公司在美京紐約禮拜堂街三十號　電碼

Locomotive New York
Annual Capacity; 3500 Locomotive.

American Locomotive Company

上海倫敦間　十三天半
東京倫敦間　十三天四分之一
東京北京間　三天半
大連莫斯科間　八天四分之三

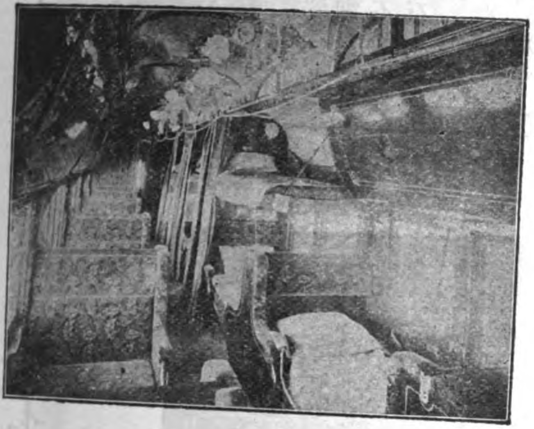


東亞歐洲間最短最捷最廉路線

南滿鐵路快車

South Manchuria Railway Company, Daire

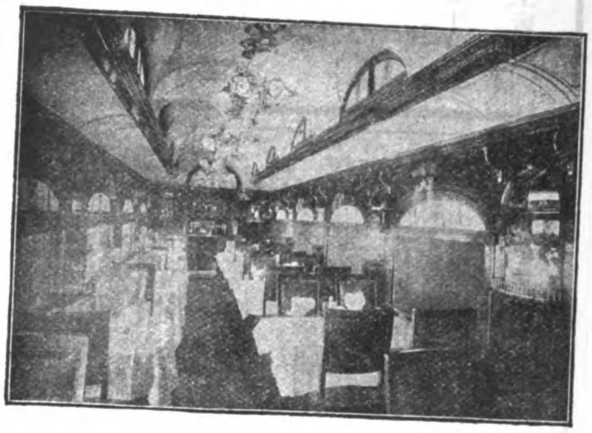
# 南滿鐵路



床車

每星期開駛三次快車

本快車預備完善床車膳車並頭等客車運行大連長春間以便聯絡西伯利亞路線並上海航路



膳車

大連聯絡航路須知　凡自大連到門司神戶仁川天津芝罘青島及其他日華兩國各埠亦均有定期開行輪船彼此按日往來

奉天聯絡須知　凡此等快車在奉天與京奉鐵路聯絡並與新修滿韓路線長春釜山間每星期三次快車聯絡日本歐洲間旅程比舊短減兩天航程亦大就減縮

南滿鐵路公司開辦大連星浦雅麻多旅館

南滿鐵路公司開辦旅館　本公司在大連旅順奉天長春星浦等處開辦旅館均依西式調度完美無所不罄　星浦距大連五英里為北部瀕海地方唯一勝區開設旅館之外并添設許多平房雅潔瀟洒點在園中海山環繞風光明媚租價務從公道以應遊客貴需

歐亞各地代售車票處　本公司車船各票均在後開各處代售
萬國有床快車公司 (The International Sleeping Car & Express Trains Co.)
德瑪司庫克公司 (Messrs. Thos. Cook & Son.)
日本郵船會社上海分行
漢堡美國航路辦理旅客事務處 (Reisebureau der Hamburg-Amerika Linie)
挪的斯克辦理旅客事務處 (Nordisk Resebureau)

本鐵路時刻車脚表沿線便覽以及各項報告若有要需一俟告知本公司運輪科即當寄呈

南滿鐵路公司開辦長春雅麻多旅館

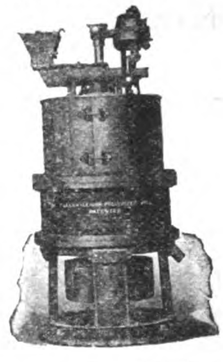
南滿鐵路公司開辦奉天雅麻多旅館

## 滿洲大連南滿鐵路公司

李伯爾氏字碼書

# 福祿氏磨機廠

The Fuller-Lehigh Pulverizer Mill.



陳立所中所陳立之機器不下四千架而福祿氏磨機實首屈一指且價廉而又能磨不易磨之各物品　如白煤　石綿石　瀝青砧　硫酸重土　炮克　石脫　烟煤　骨煤　炭精　水門汀石　水門汀磚　粉墨　炭　金苗　黃泥　煤炭　焦炭　銅苗　白雲石　肉色之石　燒過之黃泥　粉泥石　鑄鐵板面　福祿氏土　玻璃　金石英　黑鉛　石膏　海持來石灰　鐵苗　磁土　鎔巖　石灰　石灰石　砂石　磁鐵石　大理石　赭石　礦苗　螺蛳　漆　燐石　膏　巴得蘭水門汀　拍特立耳礦滓　石英　壳　硅酸　礦滓　石板　雲母石　屈破立　大小砂石　赭鐵礦　皓金　淨白粉

諸君若欲以磨成之煤生爐請查本廠所積之粉煤　用本廠所製展轆壓之用本廠之火轉乾機乾燥之用本廠之磨而粉磨之若承各界光顧請來函索說明書爲禱

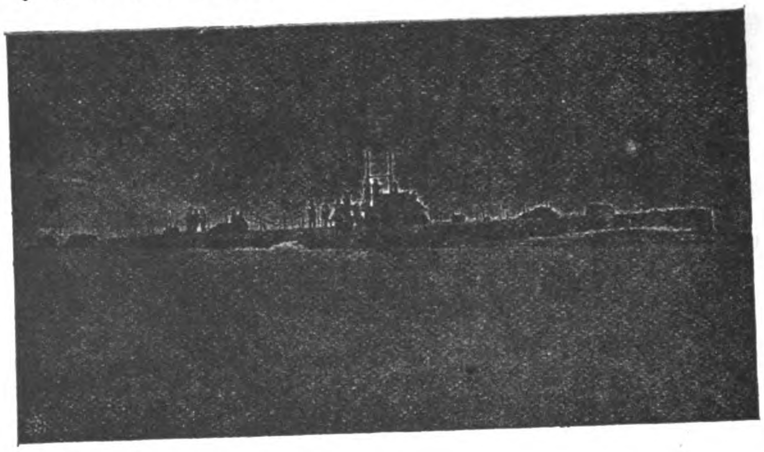
本廠所出福祿氏牌機器如絞縺　輓輪　齒輪　磨管　砌䂪　壓機　磨機

工廠修理以及特式之鑄品均可代辦請閱第五十號目錄可來信索取

萊哈車子車輪車軸工廠白



# 飛愛山喬其哇有限公司出售海軍戰利品廣告



頭等淹沒魚雷艇

水雷坑道

炸藥隧道　消滅敵人水雷之用

形如浮桶之水面炸擊器

海底防範各種之軍械

各種電力發動之快行汽艇

Fiat-San Giorgio, Ltd., Spezia (Italy)



# 日本 長崎 三菱造船廠

主要製作品

郵客旅貨便
物石油槽汽
船達頻汽船
快遊船各種
兵船各種汽
機汽鑵及電
氣機械

特許製作品

巴遜斯式達
頻同式發電
機斯董式滿
嘎黃銅公杜
拉普羅冷汽
機威耶式抽
水抽氣各機
暨爾特抽氣
機

海難救助船

大浦丸(七百拾六噸)

船渠及船架

乾船渠叁基船架壹基而第叁乾船渠係蘇士以東最大者

工場地基及職工數

拾叁萬玖千坪壹萬餘名

Mitsu Bishi Dockyard & Eng. Works

# 美國鋼鐵出產公司廣告

本公司所出鍍鋅彈簧鐵釘久爲光顧諸君所歡迎蓋以之釘屋頂實較勝於螺釘螺蓋螺圈也且價格又廉此四面之釘圖即本公司之出品長二吋四分之一諸君若購用之則屋頂不滲漏貨物不致損壞且省修理費若欲購者請向上海江西路愛字二十四號門牌可也

THE UNITED STATES STEEL PRODUCTS COMPANY.

# 特立司代而公司廣告

Drysdale & Co., Ltd.

本公司專製離中向外之抽機使油自來航海與陸地均適於用其速率極高能拖代拿摩及扇機等物

本公司爲英國及各外國海軍部之包造家

總公司開設蘇革蘭革來司姆

上海經理處在九江路九號凱衛倫公司

# 海華氏有限公司廣告

Haywards Ltd.

本公司所製房屋中之各種器俱幷鐵件等物無不恰合衛生故人樂爲購用今將各種着名之物約略陳之以便各界諸君採擇焉道傍三角鏡燈攤蓬等物自鎖之煤板及圈件明瓦透氣翻板出氣洞馬房鐵欄好華氏鐵樓梯直形曲形均備幷有避火之樓梯鋼質可開關之窗架窗槅好華氏改良無油灰之屋頂鋼質欄板較膠省百分之二十五溝渠或屋頂之透氣具幷窗櫃或門戶所用之外鐵門若欲知詳細或購買者請來函掛號索取目錄第一號目錄載路燈及推蓬第二號載煤板及圖件第三號載鐵樓梯直曲均有第四號載出氣具室內或屋頂第五號載馬房鐵件第七號載鋼質欄板第八號載發光具及爐鍋等物第十號鋼質窗架窗槅及可開關之門等物第十一號載花片玻璃[illegible]十二號載改良透光屋[illegible]物第十三號載[illegible]火之光[illegible]片[illegible]

# 曲模脫製造公司

Trimont Manufacturing Co.

曲模牌螺旋管鉗早經爲使用者所[illegible]又發明新件名護螺具加於鉗上其大小不同爲鋼質所造不易損壞

護螺螄具之功効能使螺螄運動工作時不致受意外之不測且能使所用之器具有百分中之二十五分之效用

曲模螺旋管鉗備有木柄者其大小有六寸八寸十寸十四寸共四種備有鋼柄者其大小自六寸至四十八寸

曲模螺旋管鉗內之各附屬物均可互換調用柄中所用之齒若用壞可更換新製之齒使鉗仍可保用

若欲知詳細請來函索取本公司之第二百二十三號目錄書可也

本公司開設飽思頓勞克司白來

# 火石車輪橡皮公司廣告

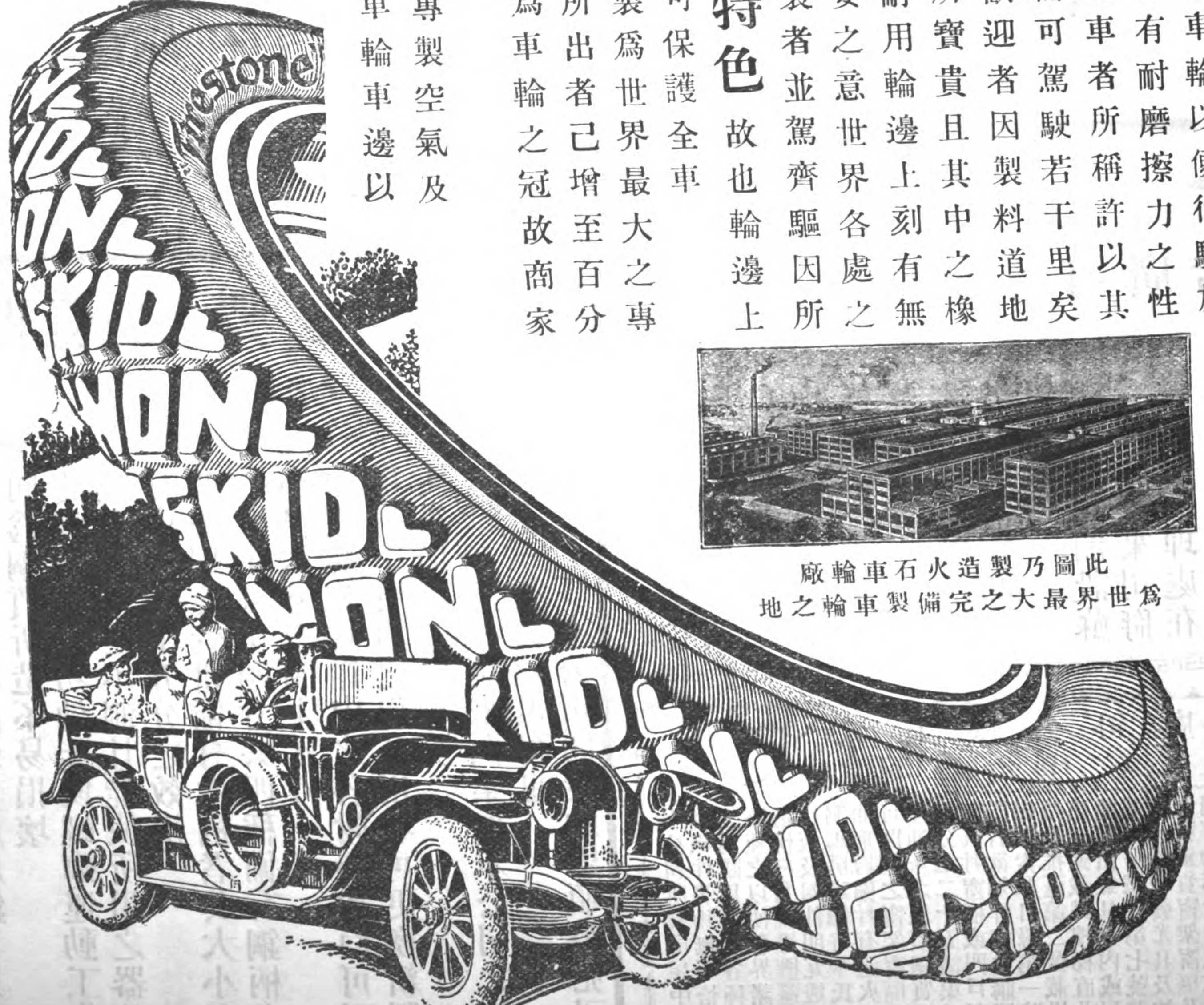
Firestone Tire & Rubber Co. Factory: Akron, Ohio, U. S. A.

本公司專製火石無輪制之車輪以便行駛於堅硬之道路及熱地上因含有耐磨擦力之性質且價廉而物尤美故爲駕車者所稱許以其穩妥適當所費者僅仙令而可駕駛若干里矣火石車輪之所以爲人人歡迎者因製料道地雖最廉價之車輪亦爲人所寶貴且其中之橡皮亦爲最好者最能避熱耐用輪邊上刻有無輪制等字即所以表明穩妥之意世界各處之車輪斷不能與本公司所製者並駕齊驅因所著者乃**耐用省費爲特色**故也輪邊上之字可免輪制之擦損且可保護全車火石車輪邊爲專門家所製爲世界最大之專製車輪之工廠所造本年所出者已增至百分之七十八因力大堅穩故爲車輪之冠故商家亦願承辦代銷

工廠開設美國哇哈哇省專製空氣及實心輪子馬達車輪救火車輪車邊以及車輪所有之附屬品

小呂宋非列賓經理爲美國哈特韋匹浪並公司

中國通商口岸東三省及高麗等處若有殷實商家欲經理者可通函索取章程可也




此圖乃製造火石車輪廠
爲世界最大之完備製車輪之地

本公司專製火石無輪制之車輪以便行駛於

斐律濱全島銀行即原日之西班牙斐律濱人銀行改名創設在西歷壹千八百五拾壹年 準備資本壹千萬元已收資本銀四百五拾萬元經斐島政府承認有附貯公欵所有銀行營業事宜買賣滙單各埠處如 英國倫敦滙票 法吧黎 西班牙馬德里 吧詩倫那 德國伯林 咸北 澳洲西德尼 舊金山 芝加哥 香港與及一切總滙商市各區由電滙兌及附貯日息長期或逐日收支其利息悉照市面行情酌議另設支行在斐島屬之衣路埠其餘各埠皆設有代理人

倫敦 National Bank of Scotland, Ltd. 巴黎 Comptoir National d'Escompte
馬德里 Banco Hispano Americano 吧斯倫那 Crédit Lyonnais
伯林 Deutsche Bank 西德尼 Bank of New South Wales
紐約 Kountze Brothers 芝加哥 Continental & Commercial Nat'l. Bank
舊金山 Wells Fargo Nevada National Bank 香港 Banque de L'Indo-Chine
上海 International Banking Corporation 斐島詩務 International Banking Corporation.

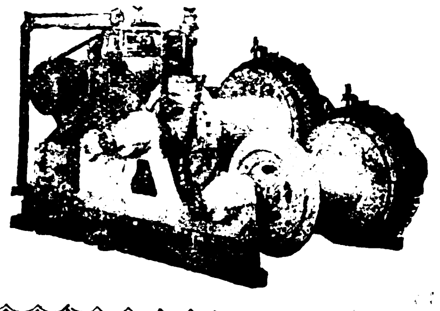
本銀行寫字樓在嗎尼拉市些灣帝大街門牌第拾號

總理人 獎挨示拂
協理人 馬山洛

The Bank of the Philippine Islands

立奇華製造公司廣告
Lidgerwood Mfg. Co.

本公司製造扯升機爵司令油或蒸氣或電汽於各處均適用所定造之機器及電升機已不下三萬六千具欲知詳細請來函示知



公司開設於美國紐約省自由街九十六號歐洲經理處在英國倫敦京城

德華銀行

總行在上海分設香港廣東北京天津漢口青島濟南橫濱神戶新加坡加耳各搭柏林漢堡等處資本七百五十萬兩創始於一千八百八十九年利息活存者二釐存款有定期者可向本行詢問兼做各處匯兌總經理蒂葛君

Deutsch-Asiatische Bank

森茂司製造公司廣告
The Simmons Mfg. Simmons Bedsteads.

本公司專造床架爲全球最著名之鐵床廠之冠已有五十年之閱歷日所配料作均精美無匹質地堅實且合於各地之天時水土而款式及模樣爲各國所宜若欲知詳細式樣請直接來函本公司索取或由經理人間接亦可

開設美國威司根辛省開諸息

# 匯豐銀行

(卽菲利賓政府儲銀所)

△資本金
一千五百萬元
△英金公積
一千五百萬元
△銀公積
一千六百七十五萬元
△貯備股東應付金
一千五百萬元

定期存款利息額如蒙函詢當卽通知需用銀者如以相當之物作抵均可議辦其餘各種銀行交易皆應有盡有匯票則可匯至歐洲印度新金山美洲中國及日本各大商埠

Hongkong & Shanghai Banking Corporation

# 花旗銀行廣告

本行招集資本及歷年贏餘共計美金六百五十萬元總行設在美國鈕約城全球通商大埠無不設經理以廣招徠承蒙小馬呂宋帶政外凡中府特指爲國家存款及巴拿互換處商界遊歷界保信買賣匯票及電匯等事無不辦理妥善以副各界信任茲將已設分行各埠分列於左

孟買　巴拿馬帶　北京
加爾各答(印度)　漢口　舊金山
廣東　香港　上海
色盤　神戶　新嘉坡
哥倫　小呂宋　橫濱
墨西哥城　巴拿馬　倫敦
總董候白登　總理格林

International Banking Corporation

資本金

# The Bank of the Philippine Islands

## FORMERLY BANCO ESPANOL-FILIPINO

(ESTABLISHED 1851)

| | |
|---|---|
| Authorized Capital | P10,000,000.00 |
| Capital fully paid up | 4,500,000.00 |
| Reserve fund | 1,125,000.00 |

**Official Government Depository**

General Banking Business

Buys and sells drafts on London, Paris, Madrid, Barcelona, Berlin, Hamburg, Sydney, New York, San Francisco, Chicago, Hongkong, and all other principal cities.

Telegraphic Transfers

Interest allowed on fixed deposits and current accounts at rates which may be had on application.

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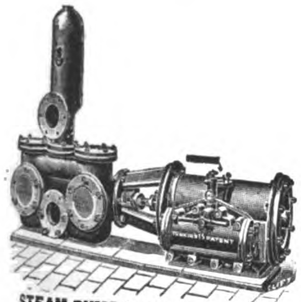

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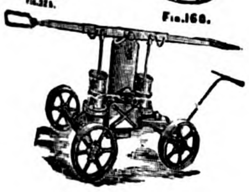
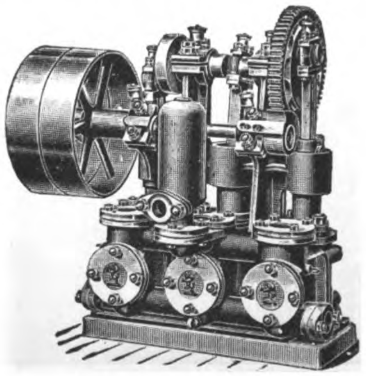
Fig.168.





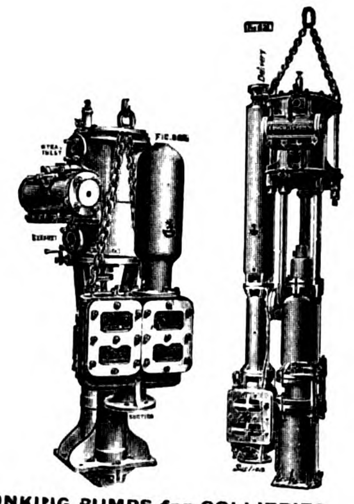


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Fig.191.

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Fig.188

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# THE FAR EASTERN REVIEW

Engineering
Finance — Commerce

遠東時報

Vol. XII., No. 10. — SHANGHAI—MANILA — March, 1916.

## The Pingsiang Colliery

## China's Railways in 1915

## Collapse of Monarchy Movement

## The Taiwan (Formosa) Exposition

## Shanghai's Municipal Electric Plant

## Hokkaido Timber Industry

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# THE J·G·WHITE COMPANIES

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**THE J. G. WHITE ENGINEERING CORPORATION**
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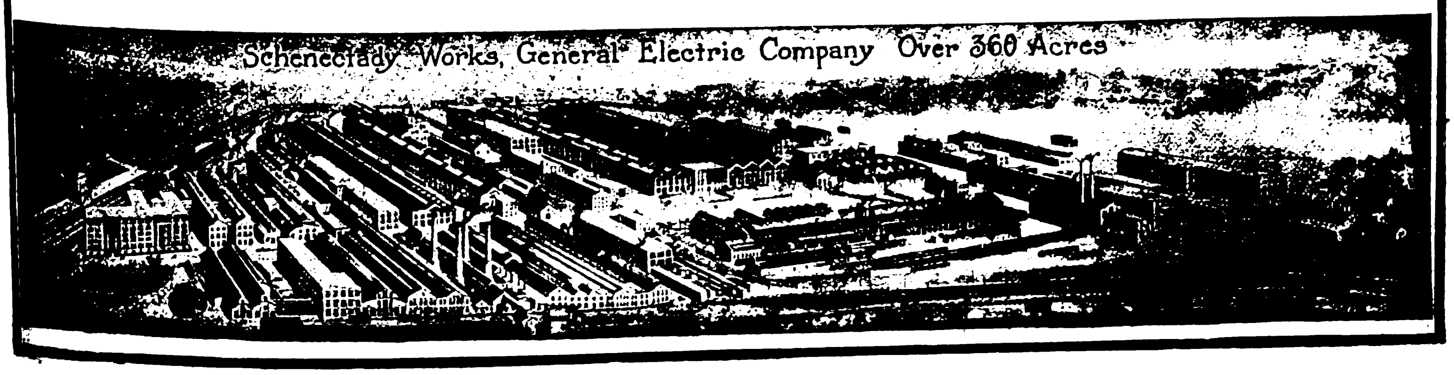

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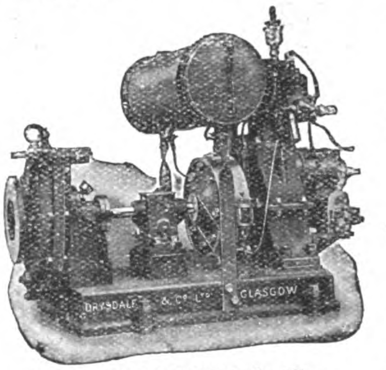


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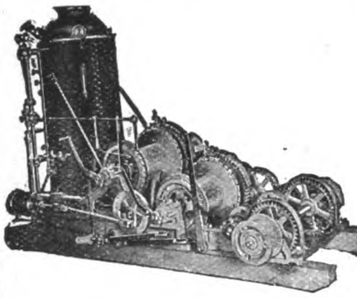

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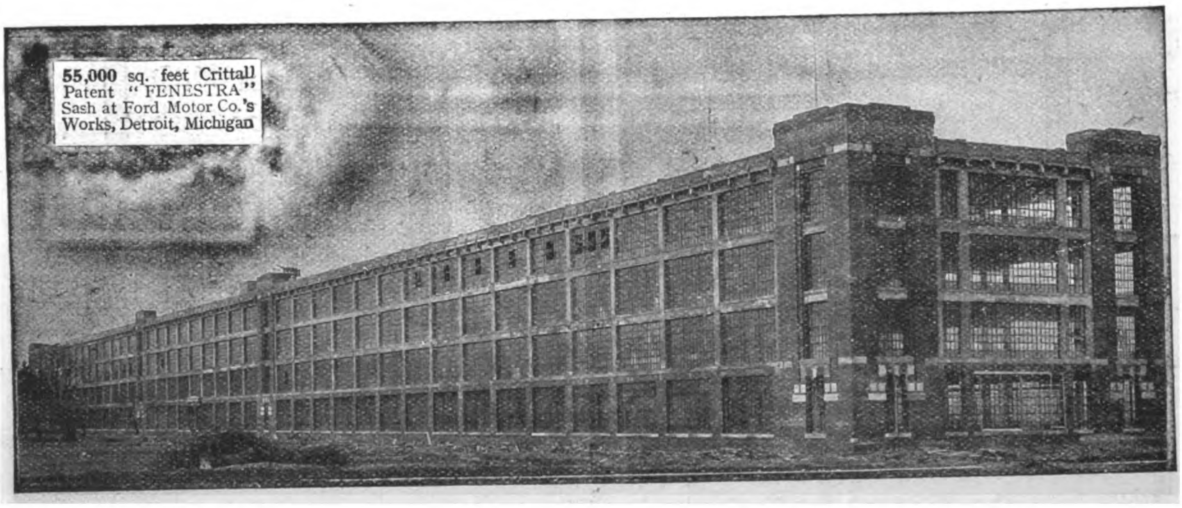

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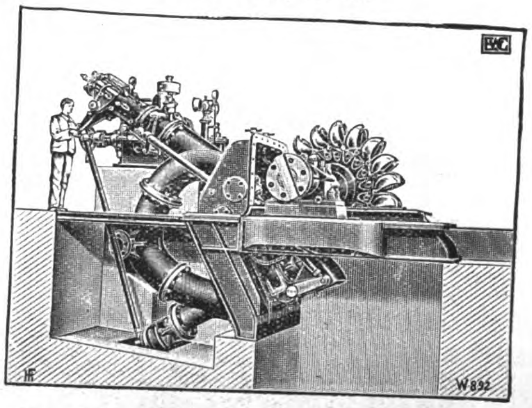

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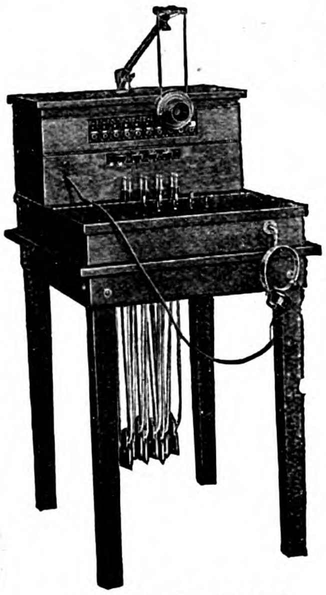

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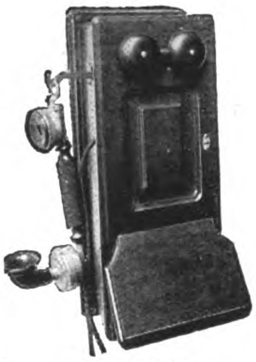

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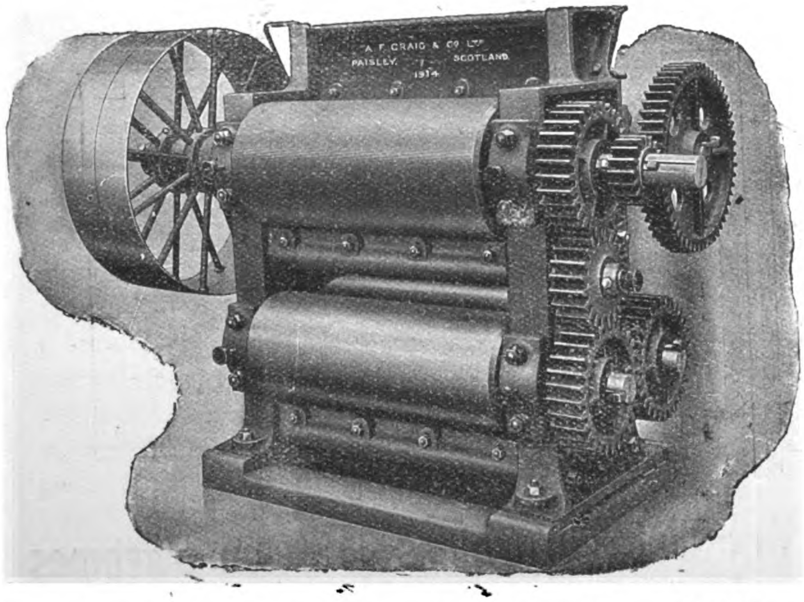


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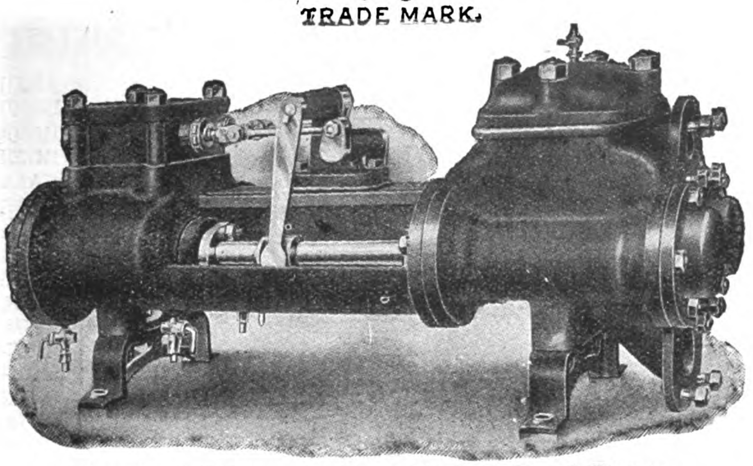

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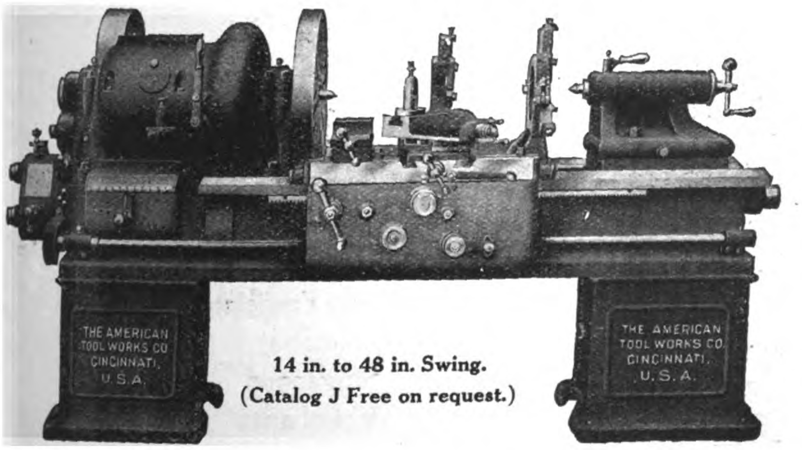


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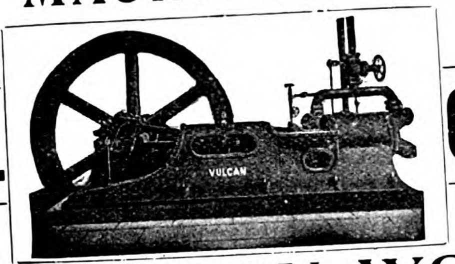
VUL  CAN

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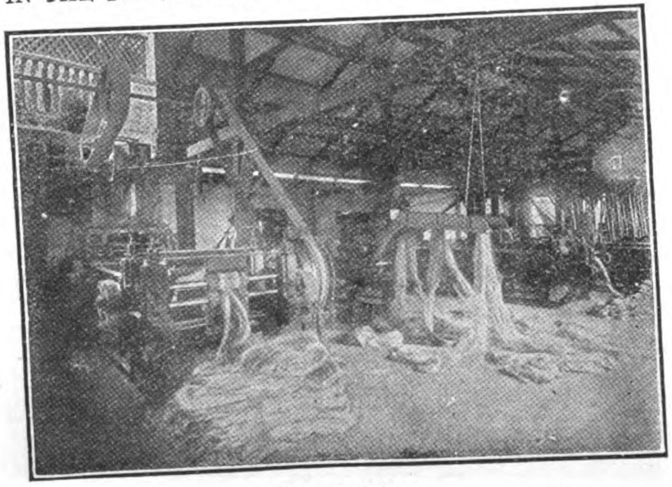

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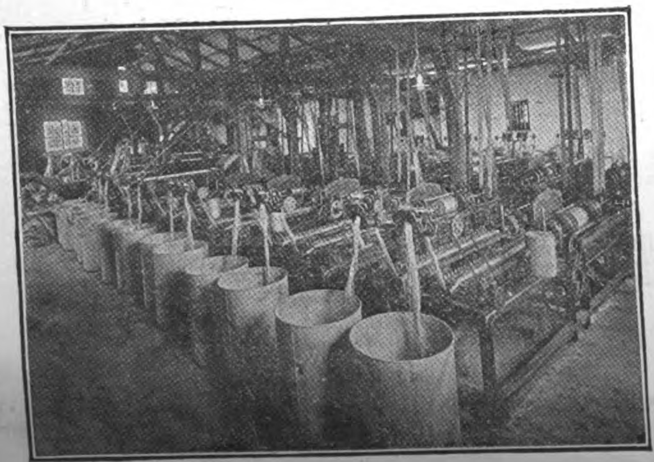
Telephone 1123

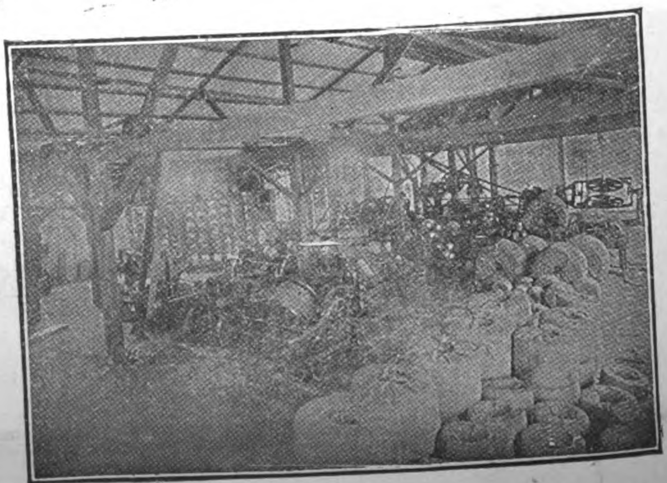
Cable Address: "SATAROPE"

Codes: Western Union, Universal Edition and Private Codes

Correspondence Solicited



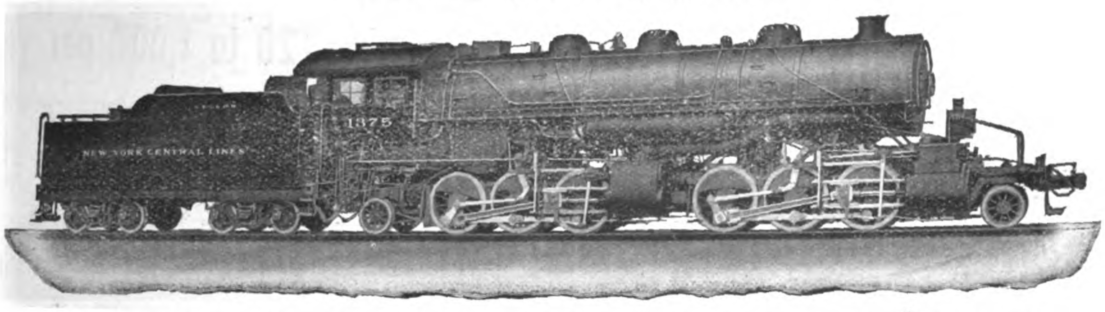
SPINNING



LAYING AND COILING

# MALLET LOCOMOTIVES

## DEVELOPED BY TESTS



MALLET LOCOMOTIVE, BUILT FOR NEW YORK CENTRAL & HUDSON RIVER RAILROAD

**Total Weight of Engine, 354,000 Pounds; Weight of Drivers, 301,500 Pounds; Diameter of Drivers, 57 Inches; Boiler Pressure, 200 Pounds; Cylinders, 21½ and 34 × 32 Inches. Maximum Tractive Power, 67,500 Pounds**

Twenty-six Mallets are handling the entire slow freight traffic on Pennsylvania Division of the New York Central & Hudson River Railroad. They have increased track capacity 40 per cent without double tracking; reduced overtime 80 per cent; and decreased motive power investment $78,000.00.

This Mallet design was developed by experience and exhaustive tests. Each feature of the design, and the economical performance as a whole, was thoroughly analyzed. The tests, resulting in this particular design, were made by experts from two of the largest railroad systems, in conjunction with our own engineers. The analysis of the results therefore lends exceptional weight to the final conclusions. These conclusions were not based on one test only. The investigation extends over two and a half months. Each improvement recommended was made, and tested separately, and its value definitely determined.

From these tests, the purchasers of our Mallets profit through the higher efficiency to which the design has been developed.

# AMERICAN LOCOMOTIVE COMPANY

30, CHURCH STREET, NEW YORK. Cable Address:—LOCOMOTIVE NEW YORK

## MITSUI BUSSAN KAISHA, LIMITED

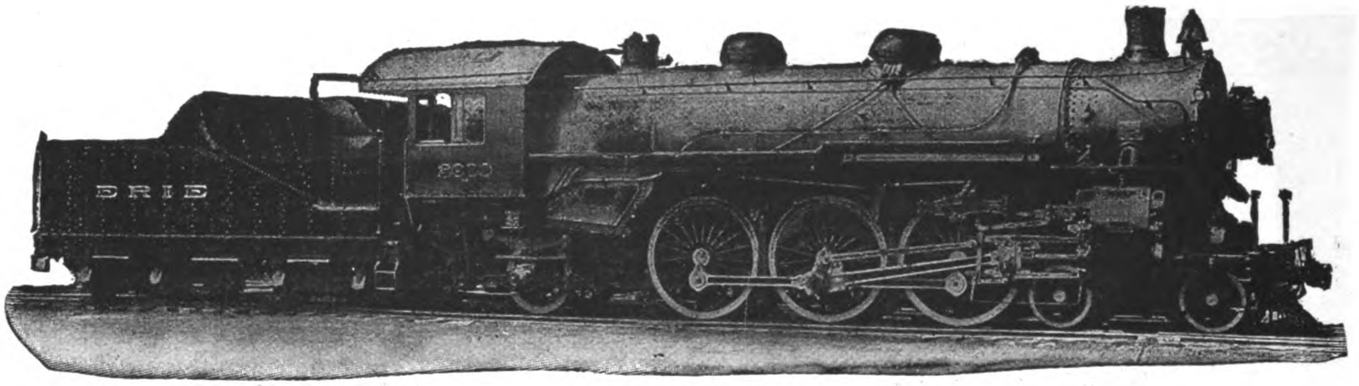
(MITSUI AND COMPANY)

Sole Agents for China, Japan, Korea, Manchuria and Siam

Agents for the Philippine Islands, Pacific Commercial Co., Manila

# Lima Locomotive Corporation

**Builders of all Classes of Motive Power. Capacity 720 to 1,000 per year**




**Heavy Pacific Type Built for Erie Railroad**

## LIMA HEAVY PACIFIC TYPE

This locomotive combines the latest improvements and developments in design, materials and economic devices for saving fuel, etc.

Built for the **ERIE RAILROAD** for heavy fast passenger service where maximum capacity was desired.

GENERAL DIMENSIONS AS FOLLOWS:

| | |
|---|---|
| Cylinders, 27 × 28 inches | Weight on drivers, 176,000 lbs. |
| Driving wheel base, 14 ft. | Total Weight, 287,000 lbs. |
| Total Wheel base, 36 ft. 2 inches | Tractive Power, 40,700 lbs. |
| Drivers, diameter 79 inches | Factor Adhesion, 4.24 |
| Boiler, straight locomotive type | Superheater, Schmidt |
| Boiler diameter 79 inches | Valve motion, Baker |

Our **PLANT** is equipped with the latest and most improved machinery, which enables us to build any type or size locomotive required.

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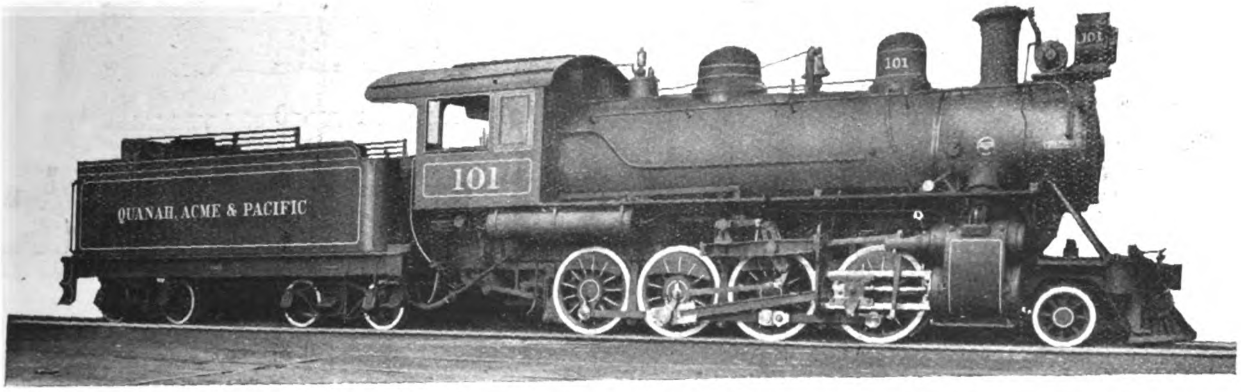
# Consolidation Type Locomotives

The first Consolidation (2-8-0) type locomotive was built by The Baldwin Locomotive Works for the Lehigh Valley R.R., fifty years ago. This engine proved unusually successful in heavy freight service, and the type was soon adopted by the principal railways in the United States. Although Consolidation locomotives are now being replaced, to a considerable extent, by larger engines, they are still extensively used for work which is within their capacity.




CONSOLIDATION TYPE LOCOMOTIVE, QUANAH, ACME & PACIFIC RY.

Cylinders, 20"×26"
Driving-wheels, diameter 52"
Steam pressure, 185 lbs.
Grate area, 31.4 sq. ft.
Water heating surface, 1,690 sq. ft.
Superheating Surface, 319 sq. ft.
Weight on driving-wheels, est., 143,100 lbs.
Weight, total engine, est., 158,200 lbs.
Tractive force, 31,500 lbs.

The illustration shows a recent Baldwin engine of the Consolidation type, suitable for service on rails weighing 60 pounds and over per yard. This locomotive is equipped with a brick-arch and superheater and in point of efficiency compares favorably with the heavier power used on trunk line railways. It is interesting as an example of a unit of moderate weight, equipped with fuel saving devices.

Large numbers of locomotives of the Consolidation type, both broad and narrow gauge, have been built for export. With approximately 90 per cent. of the weight on driving-wheels, this type is particularly well qualified for heavy, slow speed freight service. Baldwin Consolidation Type locomotives are used on several of the leading railways in China and Japan.

# THE BALDWIN LOCOMOTIVE WORKS

Cable Address:—"BALDWIN, PHILADELPHIA" PHILADELPHIA, PA., U. S. A.

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## GAS ENGINE COAL

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## 福 公 司

上海　天津　漢口　北京

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Actual Photograph taken on the Chicago, Rock Island and Pacific R.R., with no other light but the Pyle-National Electric Headlight. The station seen is half a mile from the engine.

A Pyle-National Electric Headlight gives a Great Beam of Clear, Strong, Penetrating Light that distinctly illuminates the Track for Half a Mile Ahead of the Locomotive, enabling the Engine Driver to maintain Schedules, verify Signals and avoid Accidents.

*Three Railroads are each operating more than 1,700 Pyle-National Headlights.*
*Four Railroads more than 1,000 each. Twelve Railroads more than 500 each.*

## PYLE-NATIONAL ELECTRIC HEADLIGHT COMPANY

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*Export Agents.* **Railway Materials Export Corporation.** 149 Broadway, New York, U.S.A.

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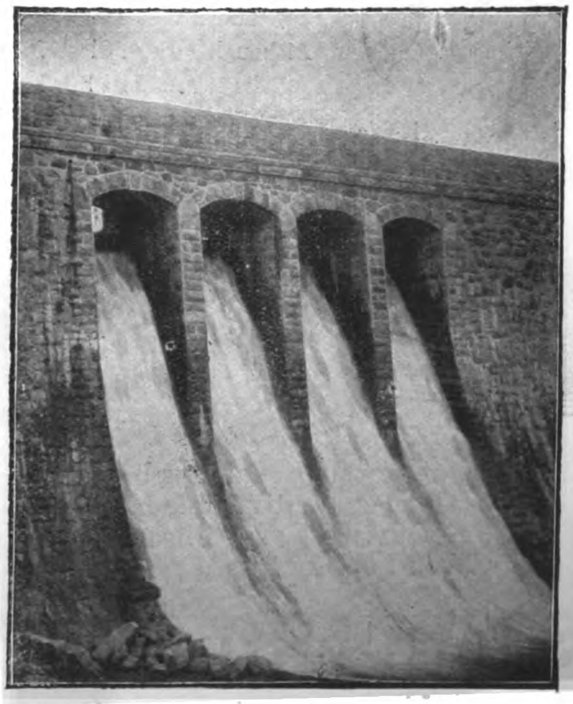
Our Patented Filters, Processes, and Apparatus, cover the whole field of water purification in all its branches.

THE CANDY FILTER Coy. Ltd., WESTMINSTER, LONDON



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Every ounce of the whole load of your factory comes on the Cylinder and Valves and the best Lubrication you can give them, is not too good.

Idle engines earn no money, but are a constant source of expense. High engine efficiency is only obtained by perfect lubrication with Standard Lubricants.

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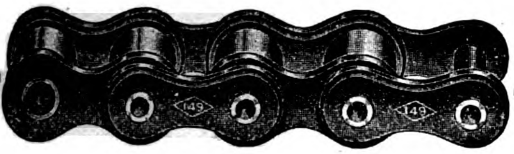
## Dealers and Branches all over China

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for
## Motor-cycles

THE No. 149 "Diamond" is an accurate, strong, durable chain, suited for the most severe motor-cycle service. Nickel steel is used exclusively for the rivets, all wearing parts are scientifically heat treated, the rollers are of special alloy steel and positively DO NOT BREAK under anything like normal service conditions.

Diamond motor-cycle chains are absolutely dependable—furnished standard 5/8 in. Pitch and with rollers 1/4 in. or 3/8 in. wide. We are also prepared to serve the trade promptly with chains for Cycles, Automobiles, Motor Trucks and Power Transmission.

**Special care given to Export Shipments.**
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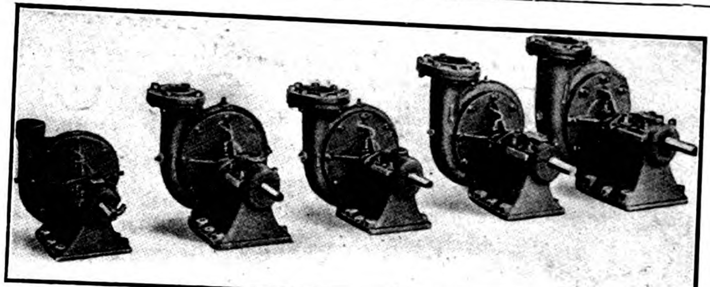
**Diamond Chain & Mfg. Company**
**Indianapolis, Indiana**
**U. S. A.**

**Cable Code: A. B. C. 4th & 5th Editions**
**Cable Address: "Chain" Indianapolis**



# A High Grade Centrifugal Pump
**For Direct Connection to Electric Motors**
## Goulds Fig. 3025

This Centrifugal Pump which is a Horizontal, Single Stage, Single Suction, Enclosed Impeller Type, is a high efficiency, moderately priced pump designed especially for direct connection to electric motors. The casing is of the volute type, supported on the bed plate so that it can be swivelled in any one of eight different positions.

This pump is made in five sizes with capacities ranging from 80 to 1000 gallons per minute for heads up to 1000 feet.

This pump is also furnished with pulley for belt drive and is then known as Fig. 3026.

Descriptive Bulletins sent on Request.

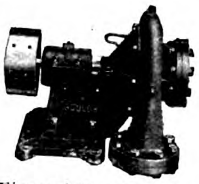


Fig. 3026 No. 4 Vertical Downward discharge

**THE GOULDS MANUFACTURING Co.**
Main Office and Works
Seneca Falls, New York, U.S.A.
Cable Address: "Glavis Seneca Falls"
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# GOULDS PUMPS
**FOR EVERY SERVICE**

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digs, in one operation, a clean ditch, conforming to plan—true to line, grade and cross-section, with sloping banks, clean berms, and spoil embankments finished exactly as desired.

There are Austin Trenchers and Excavators in many sizes and styles for the construction of Open Ditches—for drainage or irrigation—and of Canalization Systems—for sewer, water and gas pipe mains.

*Write for Complete Catalogue "L.F."*
**When writing describe proposed work, giving dimensions of ditches and character of soil.**

**F. C. AUSTIN Drainage Excavator Company,**
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**Cables: "EXCAVATOR, CHICAGO."**
**Codes: LIEBERS, A.B.C., Fifth Edition, and Western Union.**

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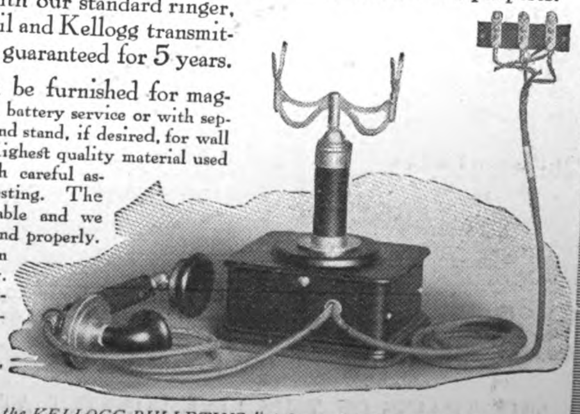
FOR all telephonic purposes—portable telephone service, intercommunication systems, local lines, small magneto exchanges, universal exchange, common battery systems—KELLOGG SYSTEM is the most efficient service in the world. The largest or smallest telephone unit supplied.

A popular type of Kellogg Telephone is illustrated. It is a compact and reliable model, and assures a service that avoids trouble and repair expense. The parts are easily accessible; the most convenient type of telephone to use for all conditions and purposes. Equipped with our standard ringer, induction coil and Kellogg transmitter which is guaranteed for 5 years.

The set can be furnished for magneto or common battery service or with separate bell box and stand, if desired, for wall or table use. Highest quality material used throughout with careful assembling and testing. The price is reasonable and we ship promptly and properly. Built in our own extensive factory. *KELLOGG System is in universal use.*

*"USE is the TEST"*



*Write for the KELLOGG BULLETINS. "A fund of information as to the technical working of the telephone apparatus. Sent free on request.*

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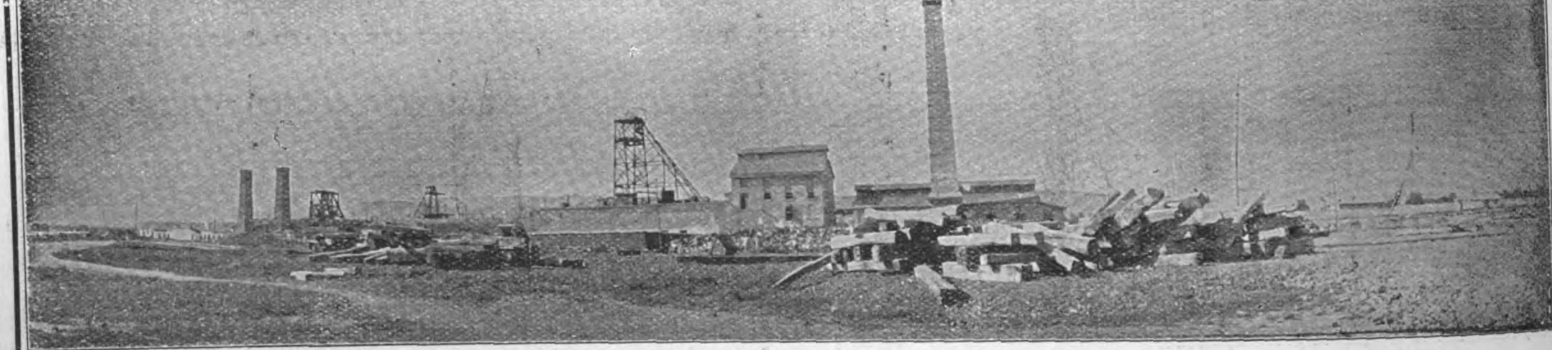
# CHINESE GOVERNMENT RAILWAYS

## THE TAO-CHING RAILWAY

### TAOKOU TO CHINGHUA

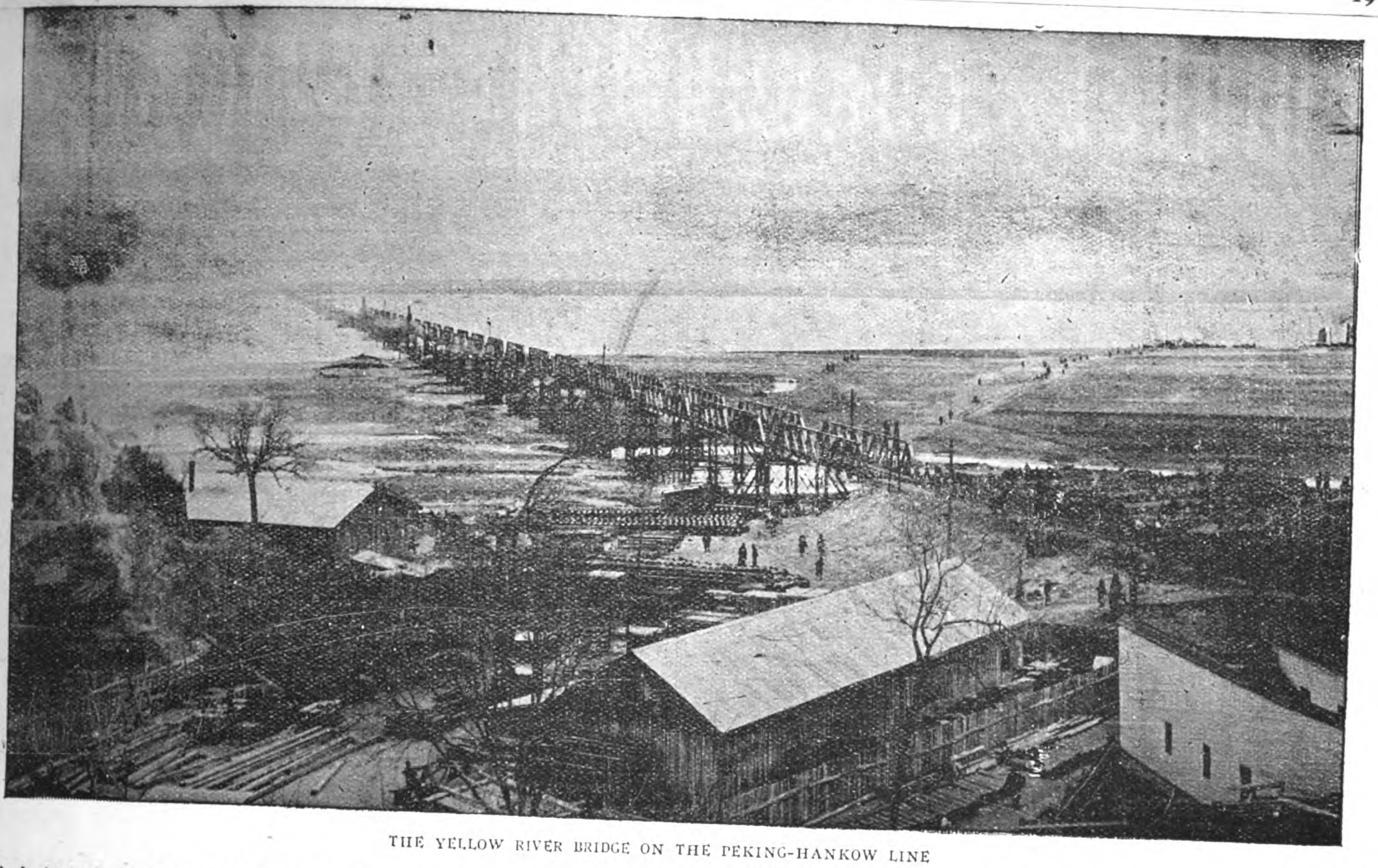
(CHINESE GOVERNMENT HONAN LINE)



GENERAL VIEW OF COAL MINES ON THE LINE OF THE TAO-CHING RAILWAY

## "China's Road of Anthracite"

THE TRAINS OF THIS LINE CONNECT AT SIN-SIANG-SIEN WITH THE THROUGH SERVICE OF THE PEKING-HANKOW RAILWAY. IT TAPS THE GREAT ANTHRACITE COAL DEPOSITS OF SHANSI, AND CONVEYS THE PRODUCTS OF THE MINES TO THE NEAREST NAVIGABLE RIVER.



THE YELLOW RIVER BRIDGE ON THE PEKING-HANKOW LINE


CHINESE GOVERNMENT RAILWAYS

# PEKING-HANKOW LINE

"THE ROAD THROUGH THE HEART OF CHINA"

**Avoid the Cold and Rough Weather in the Sea Trip between Shanghai and the North by the more comfortable Route up the Yangtsze to Hankow, and from there via the Ching-Han Railway to Peking, where through connections for Europe are made with the Trains de Luxe of the Government Railways of North China.**

This line passes through the Heart of the Country and enables the traveller to and from Europe to catch a glimpse of Old China. Ancient walled cities, temples and pagodas are seen from the comfortable seats of the weekly trains de luxe operated by this line. From Peking, the great capital of the oldest civilization in the world, the train departs from the famous Chien-Men and carries the traveller through the historical and legendary portions of the Country, to the modern industrial center at Hankow—the Chicago of China. Connections are made with the Cheng-Tai Railway at Chengtingfu, with the Tao-Ching Line at Sin Siang-sien, and at Chengchowfu with the Pienlo Line.

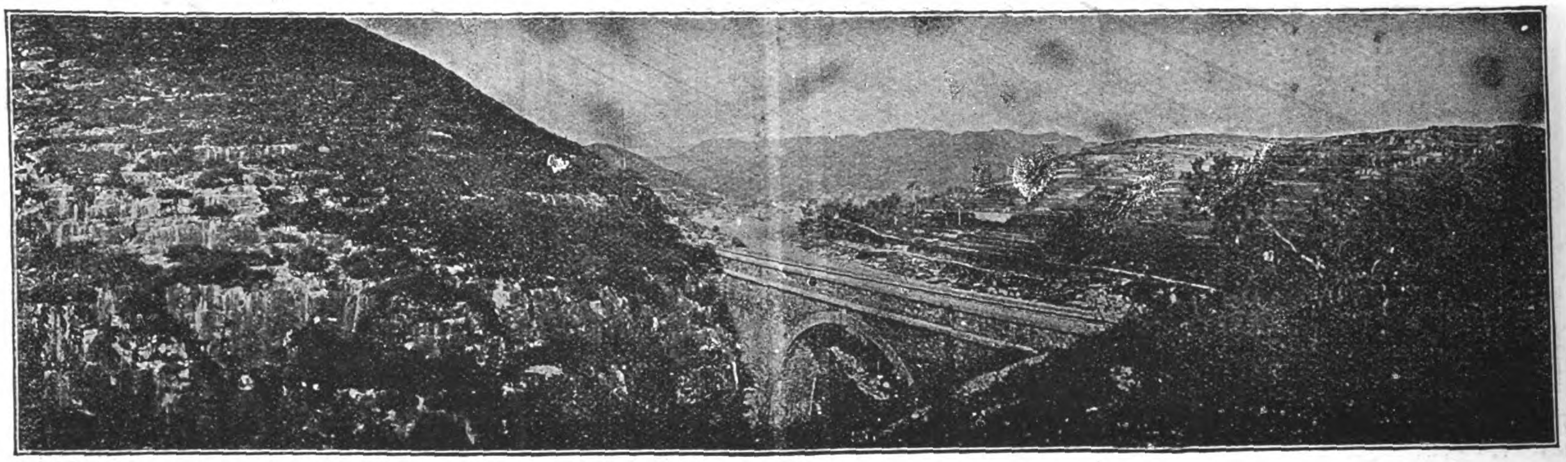
A weekly express train de luxe leaves Peking every Tuesday, and Hankow every Friday, making the trip of over 700 miles in less than thirty hours.

For information apply to any office of the International Sleeping Car Co. or Thos. Cook and Sons.

# Chinese Government Railways

## The Cheng-Tai Railway

(CHINESE GOVERNMENT SHANSI LINE—CHENGTINGFU TO TAIYUANFU)

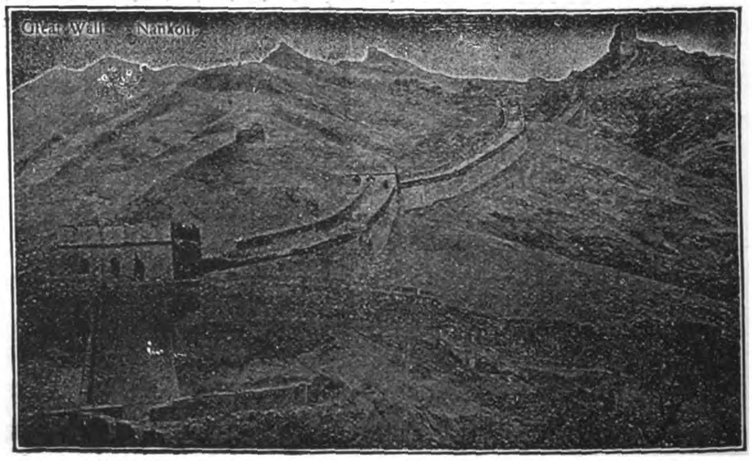


VIEWS ALONG ROUTE OF CHENG-TAI RAILWAY

The trains of this line connect with the through service of the Peking-Hankow Railway, affording Travellers the opportunity of seeing the most picturesque part of China. The line passes through a mountainous section of country, rich in Mineral Resources to the Provincial Capital of Shansi at Taiyuanfu. This interesting city is a great educational center, and famous for the fine quality of its artistic embroideries.

## The Peking-Kalgan Line

*"THE ROAD TO THE GREAT WALL"*




This line follows the ancient caravan route and military highway from Mongolia into China by the way of the historic Nankow Pass. This pass is the Key to Peking, and Kalgan is the gate of the Country. From here the great camel caravans set out on their long journeys across Mongolia to Siberia and Central Asia. This old frontier mart, retaining its time-honored characteristics, one of the most interesting sights of the Old World, is made accessible by the new railway. The line also carries the passenger in two hours from Peking to Nankow, when the Great Wall of China and the Ming Tombs may be seen. A foreign hotel is operated by the railway authorities at Nankow, where chairs and guides may be secured for the Tombs.

SHORTEST, QUICKEST, AND CHEAPEST ROUTE BETWEEN THE FAR EAST AND EUROPE

THE SOUTH MANCHURIA EXPRESS

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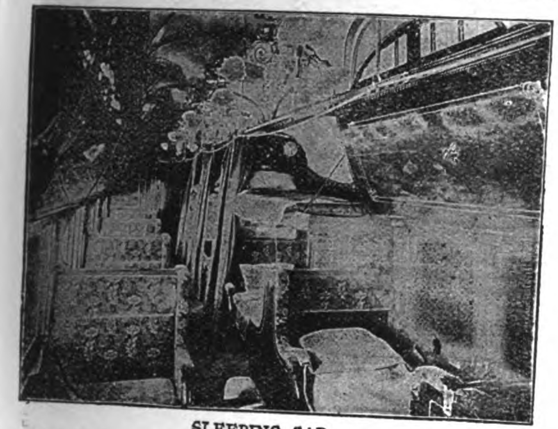
| Shanghai | to London | in | 13½ | days |
| Tokio | „ „ | „ | 13¼ | „ |
| „ | „ Peking | „ | 3½ | „ |
| Dairen | „ Moscow | „ | 8¾ | „ |

# South Manchuria Railway



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**THRICE WEEKLY EXPRESS TRAINS.**—Composed of excellently equipped SLEEPING, DINING, and 1st CLASS CARS. Operated between DAIREN and CHANGCHUN in connection with the TRANS-SIBERIAN ROUTE and SHANGHAI MAIL STEAMERS.

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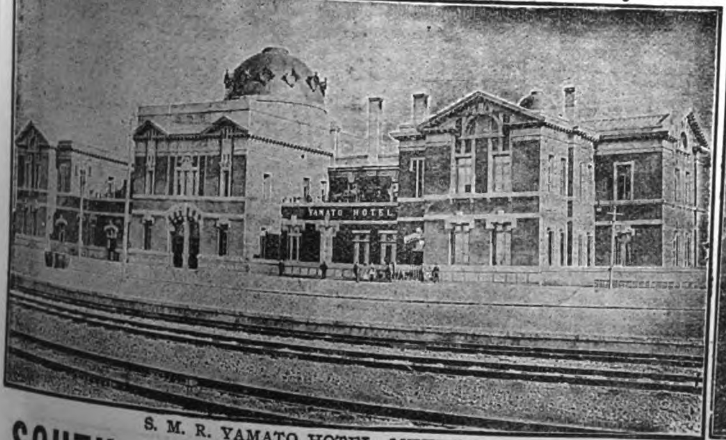
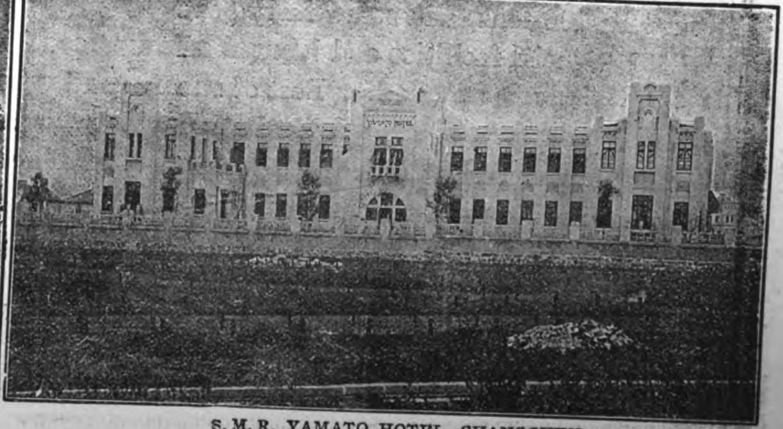



S. M. R. YAMATO HOTEL, MUKDEN



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**SOUTH MANCHURIA RAILWAY COMPANY, DAIREN, MANCHURIA**

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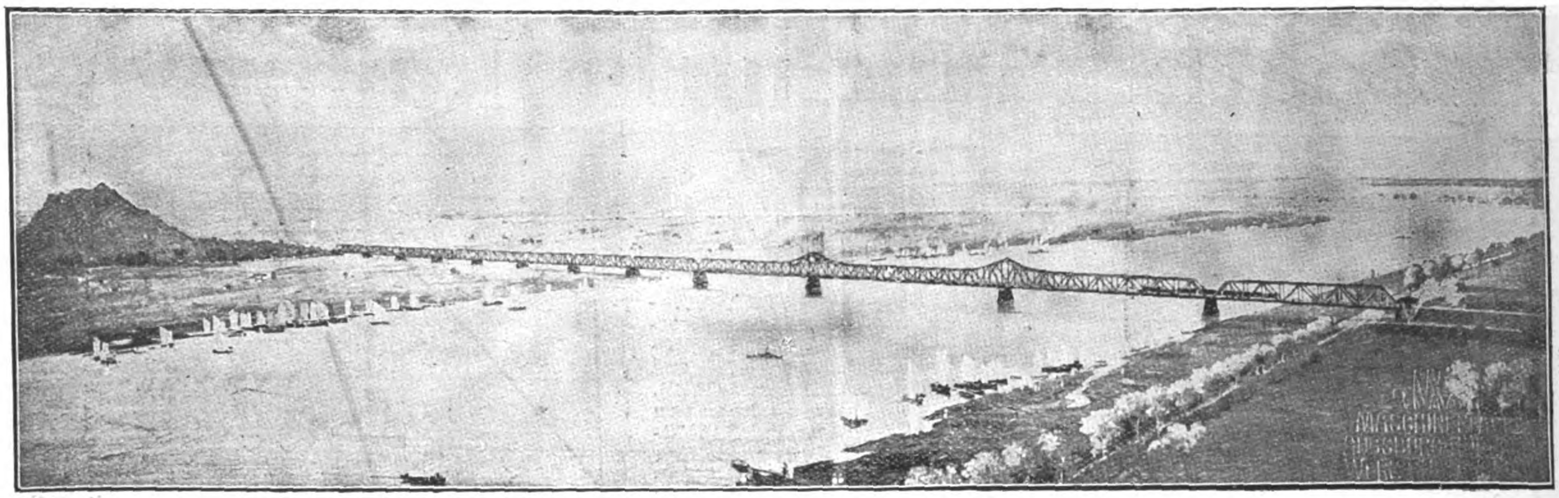
# CHINESE GOVERNMENT RAILWAYS

# TIENTSIN-PUKOW LINE



THE YELLOW RIVER BRIDGE

**Mukden-Peking-Kalgan-TIENTSIN-TSINANFU-HSUCHOWFU-PUKOW-Nanking-Shanghai.**

**all by rail only.**

Being the **quickest, surest and most convenient** connection between Shanghai on the one and Tientsin, Peking, Kalgan, Mukden and the **Siberian route on the other side,** this railway represents **a saving of many hours, of many troubles,** worries and inconveniences for the busy merchant, the home tripper on short furlough.

The tourist, the globe trotter travelling with more leisure and bent on seeing things, it takes right away from the stereotyped banality of the great ports, takes him through many provinces of the vast republic and shows him **something of the "real" China,** of its people, its history and its beauty.

Express trains equipped with sleeping and buffet cars run once a week each way between Pukow (Nanking) and Tientsin connecting with the through service of the South-Manchuria and Trans-Siberian Railways.

Through mail trains equipped with **buffet cars run daily each way** between the before mentioned termini.

The crossing over the Yangtsekiang between Nanking and Pukow is effected by means of a modern 100-tons twin-screw ferry boat.

Special facilities and **liberal allowances** for passengers' baggage.

Best of **meals and wines supplied** on the trains.

Sanitation under the personal supervision of a **qualified medical officer.**

For further particulars apply to THE TRAFFIC MANAGER, Head Office, TIENTSIN or to the Agencies of Messrs. Thomas Cook & Sons, The International Sleeping Car & Express Trains Co. or the Nordisk Resebureau.

Telegraphic Address: TSINPURY—Tientsin (Tsinanfu, Nanking, Shanghai).

Codes: A B C 5th Edition; Broomhalls' (with Suppl. No. 1).

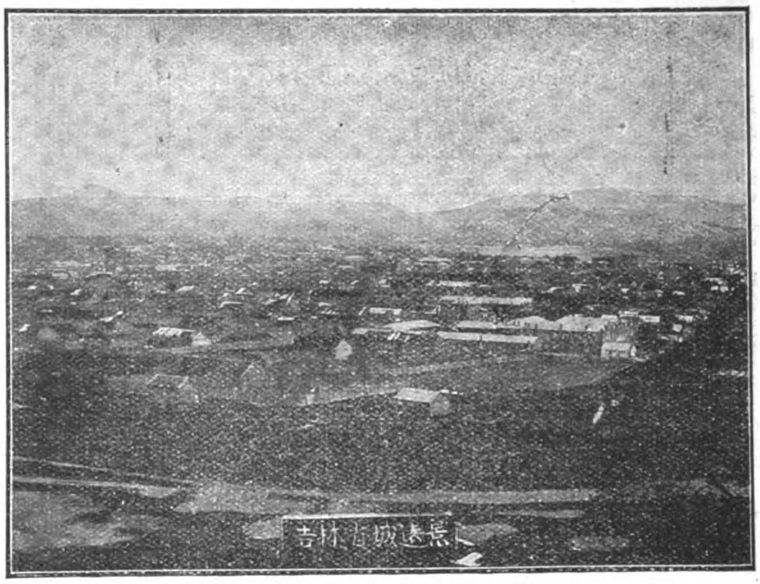
**Tientsin, May 1st, 1915.** **The Tientsin-Pukow Railway Administration.**

# 中華民國政府吉長鐵路行車時刻表

# CHINESE GOVERNMENT RAILWAYS KIRIN-CHANGCHUN LINE.

## TIME TABLE.

| DOWN TRAINS Daily Mixed | DOWN TRAINS Daily Mail | | STATIONS. | | UP TRAINS Daily Mail | UP TRAINS Daily Mixed |
|---|---|---|---|---|---|---|
| P.M. | A.M. | | | | P.M. | A.M. |
| 2.30 | 7.30 | dept. | TOUTAOKOU | arr. | 6.25 | 10.47 |
| 2.38 | 7.38 | arr. | CHANGCHUN | dept. | 6.15 | 10.37 |
| 2.45 | 7.41 | dept. | | arr. | 6.10 | 10.31 |
| 3.20 | 8.12 | arr. | KALUN | dept. | 5.40 | 9.57 |
| 3.25 | 8.14 | dept. | | arr. | 5.38 | 9.55 |
| 3.58 | 8.46 | arr. | YINMAHO | dept. | 5.06 | 9.22 |
| 4.02 | 8.48 | dept. | | arr. | 5.04 | 9.20 |
| 4.17 | 9.02 | arr. | HSIACHIUTAI | dept. | 4.50 | 9.05 |
| 4.22 | 9.04 | dept. | | arr. | 4.48 | 9.03 |
| 4.34 | 9.16 | arr. | YINGCHENGTZE | dept. | 4.36 | 8.50 |
| 4.38 | 9.18 | dept. | | arr. | 4.33 | 8.48 |
| 5.03 | 9.40 | arr. | TUMENLING | dept. | 4.12 | 8.24 |
| 5.13 | 9.50 | dept. | | arr. | 4.06 | 8.18 |
| | | arr. | CHAOCHIATIEN | dept. | 3.46 | 7.58 |
| 5.33 | 10.10 | dept. | | arr. | | |
| 5.57 | 10.31 | arr. | HUAPICHANG | dept. | 3.24 | 7.23 |
| 6.02 | 10.33 | dept. | | arr. | 3.22 | 7.20 |
| 6.18 | 10.46 | arr. | KUTIENTZE | dept. | 3.08 | 7.04 |
| 6.20 | 10.47 | dept. | | arr. | 3.07 | 7.03 |
| 6.38 | 11.03 | arr. | KIUCHAN | dept. | 2.52 | 6.45 |
| 6.43 | 11.05 | dept. | | arr. | 2.50 | 6.42 |
| 7.05 | 11.25 | arr. | KIRIN | dept. | 2.30 | 6.20 |



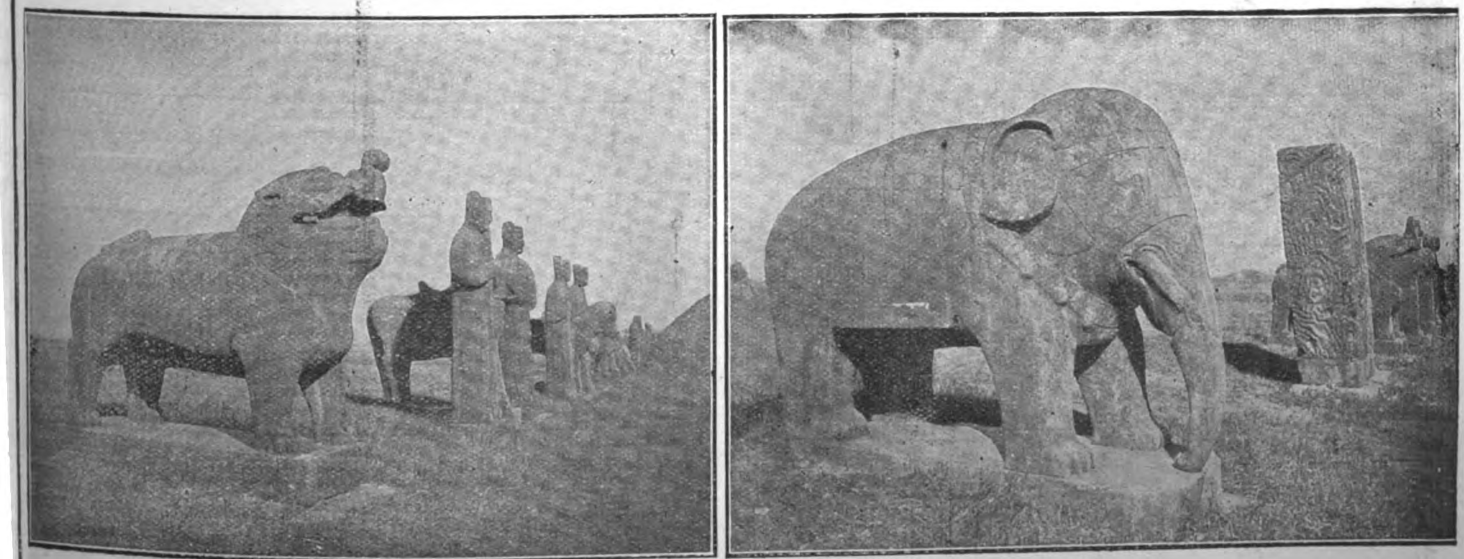
BIRD'S EYE VIEW OF KIRIN CITY

**NOTICE:**—"dept."=Departure. "arr."=Arrival.
1st May, 1915, and until further notice.

# THE PIENLO RAILWAY

## (KAIFENG-FU TO HONANFU)

## "THE FIRST SECTION OF THE PROJECTED CENTRAL TRUNKLINE"

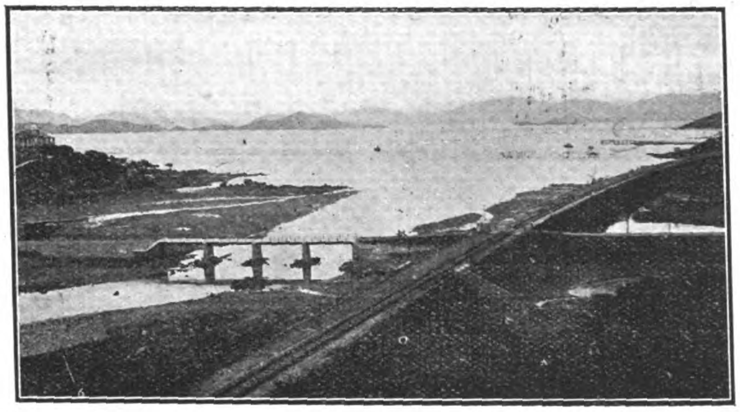


THE SUNG TOMBS NEAR KAIFENG-FU ON THE PIENLO RAILWAY.

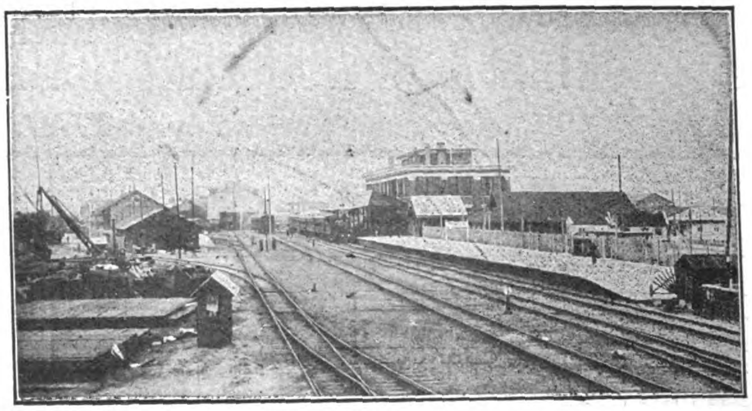
The line connects with the through service of the Peking-Hankow Railway at Tcheng Tchéou, enabling the traveller to visit Kaifengfu, the provincial capital of Honan, and the old capital of the Empire at Honanfu.

# CANTON-KOWLOON RAILWAY

VIEWS ON THE BRITISH SECTION (22 MILES) VIEWS ON THE CHINESE SECTION, 89 MILES. (Chinese Government Railways)

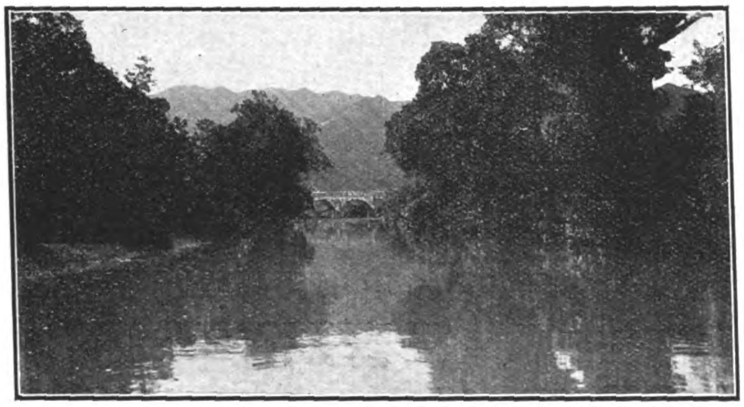


CANTON-KOWLOON RAILWAY—APPROACH TO KOWLOON

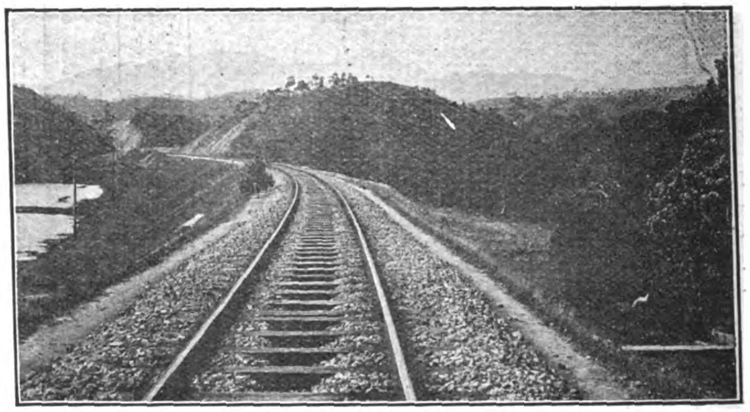


TAI SHA TAN STATION, CANTON

QUICKEST AND CHEAPEST ROUTE BETWEEN CANTON AND HONGKONG THROUGH VARIED AND BEAUTIFUL SCENERY

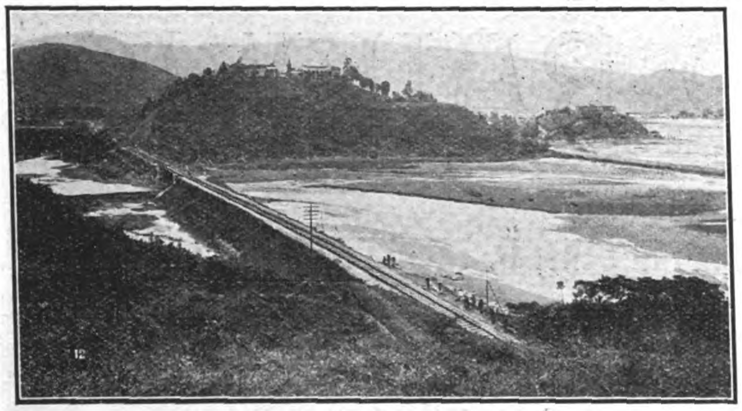


CANTON-KOWLOON RAILWAY—SCENE ALONG ROUTE

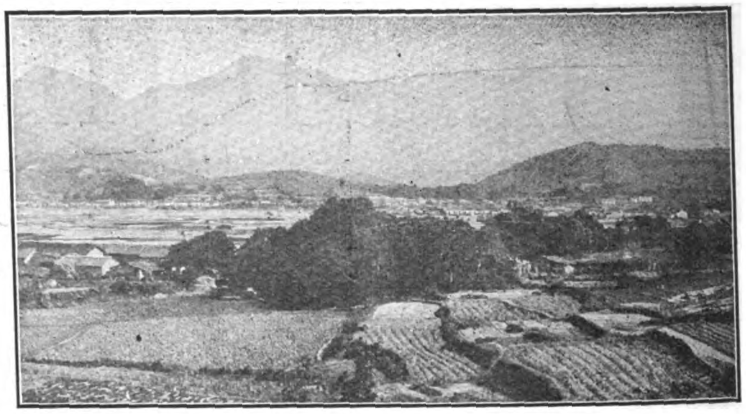


NEAR LE LOONG, CANTON-KOWLOON RAILWAY

TWO EXPRESS CORRIDOR TRAINS EACH WAY DAILY—HOT MEALS AND OTHER REFRESHMENTS SERVED

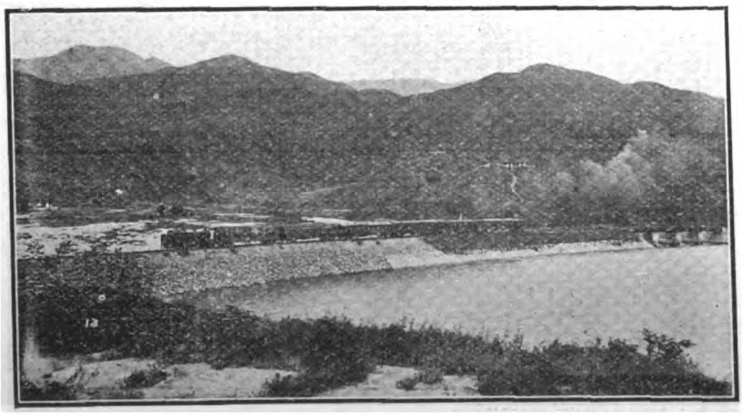


CANTON-KOWLOON RAILWAY—CROSSING TIDE FLATS

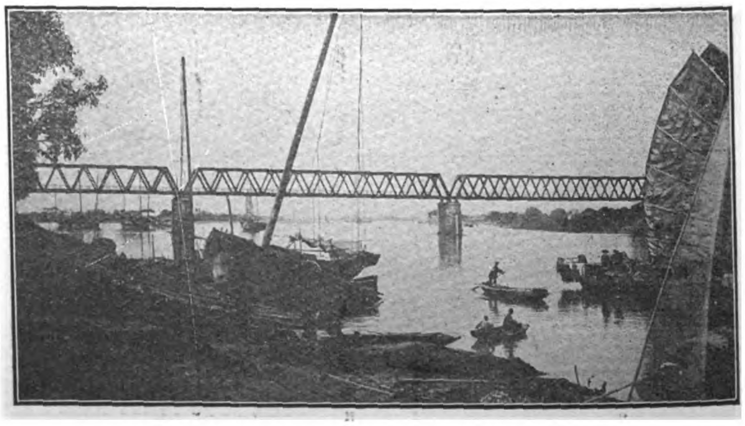


VILLAGES, CANTON-KOWLOON RAILWAY

4¼ HOURS BETWEEN UP AND DOWN TRAINS FOR BUSINESS MEN OR TOURISTS AT CANTON OR HONGKONG



CANTON-KOWLOON RAILWAY—EMBANKMENT APPROACH TO BRIDGE



EAST RIVER BRIDGE, CANTON-KOWLOON RAILWAY

TIME TABLE

Leave Hongkong (Kowloon) 9.30,* 11.15 a.m., 11.55* a.m. & *2.50 p.m. Leave Canton (Tai Sha Tau) 7.00,* 8.30 a.m. 12.00* noon & 4.20* p.m.
Arrive Canton (Tai Sha Tau) 10.40 a.m. and 6.10 & 4.30 p.m. 6.20 p.m. Arrive Hongkong (Kowloon) 10.30 a.m. and 4.14, 3.52 & 7.52 p.m.

Special terms and special trains for large tourist parties. For further particulars see advertisements or apply to
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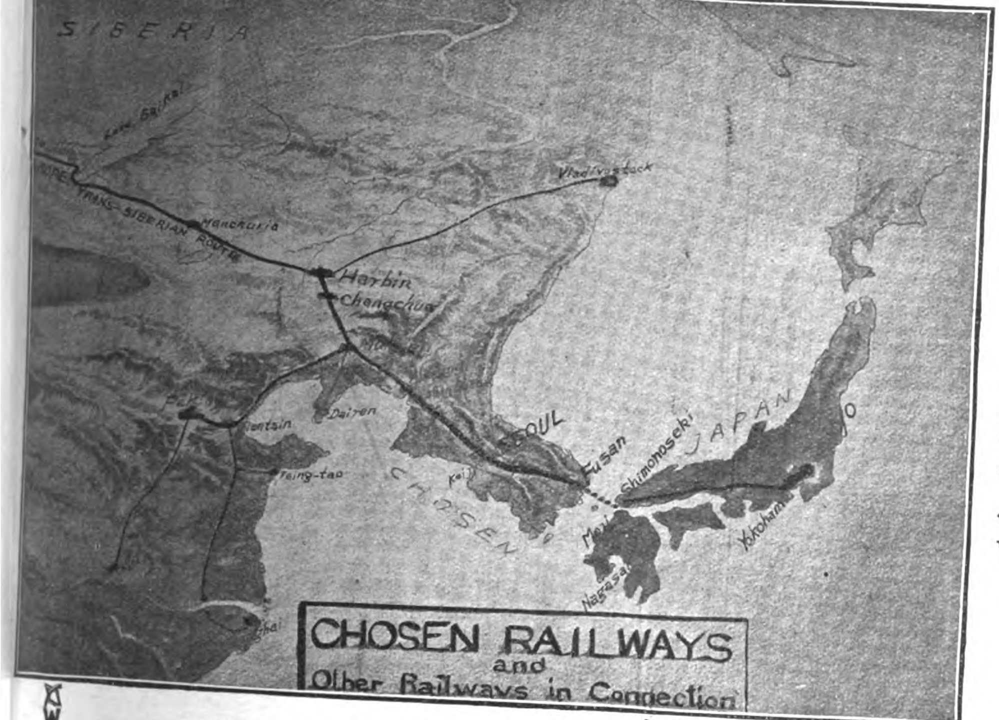
**Only 10 hours, Sea Passage between the Continent and Japan.**
**Best Opportunities for studying Unique Conditions in the Far East.**




## *Chosen-Manchuria Express*

**Fusan-Keijyo (Seoul)-Mukden-Changchun**

Weekly Service. Most Up-to-date Accommodation: 1st and 2nd Class Sleeping Cars and a Dining Car.

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With the Tokyo-Shimonoseki Train de Luxe.
With the Peking-Mukden Train de Luxe.

## *Daily Express*

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Twice a day Service, taking all class Cars, besides 1st and 2nd Class Sleeping Cars (Keijyo-Fusan section only) and a Dining Car.

CONNECTIONS:

With trains on the South Manchuria Ry.
With express trains on the Japanese Rys.

## *Through Traffic*

Stations open to through traffic are as follows:—

**South Manchuria Railway.**—
Dairen, Changchun, Mukden, Yingkou, etc.

**Chinese Eastern Railway.**—
Tsitsihar, Manchuria and Harbin.

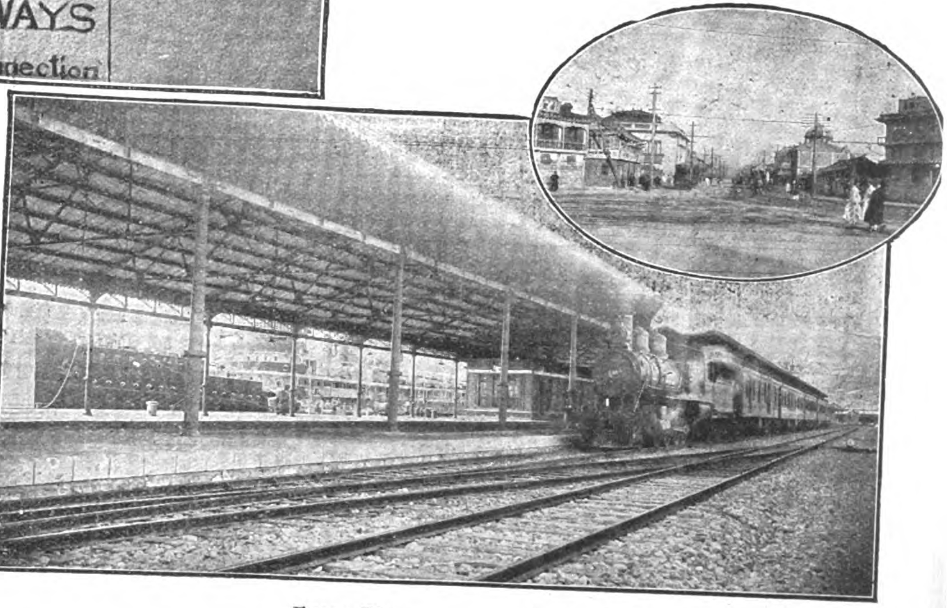
**Chinese Government Railways.**—
Hsinmingfu, Shanhaikuan, Peking, Tientsin, Shanghai, Nanking, Tsinanfu, Hankow, Nankow and Kalgan.

**Russian State Railways.**—
Irkutsk, Odessa, Warsaw, Moscow and Petrograd.

**Chosen Railways.**—
Fusan, Keijyo (Seoul) Heijyo, † Jinsen and † Chinnampo.

**Japanese Railways.**—
(via Chosen)
Tokyo, Yokohama, † Nagoya, Kyoto, Osaka, Kobe, Shimonoseki, Moji and Nagasaki.

† No through traffic to or from points of the Chinese Eastern Railway and the Russian State Railways.



Fusan Pier

A scene in Keijyo (Seoul)

## *Ticket Agencies*

The International Sleeping Car Company; Messrs. Thos. Cook & Son; The Nordisk Resebureau.

## *Hotels*

Under the Direct Management of the Railway Bureau.

CHOSEN HOTEL AT KEIJYO (Seoul).—Cable Add: "CHOHO" 80 bedrooms mostly with bath; Motor-cars meet guests at the station.

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## Ryuzan, Chosen.

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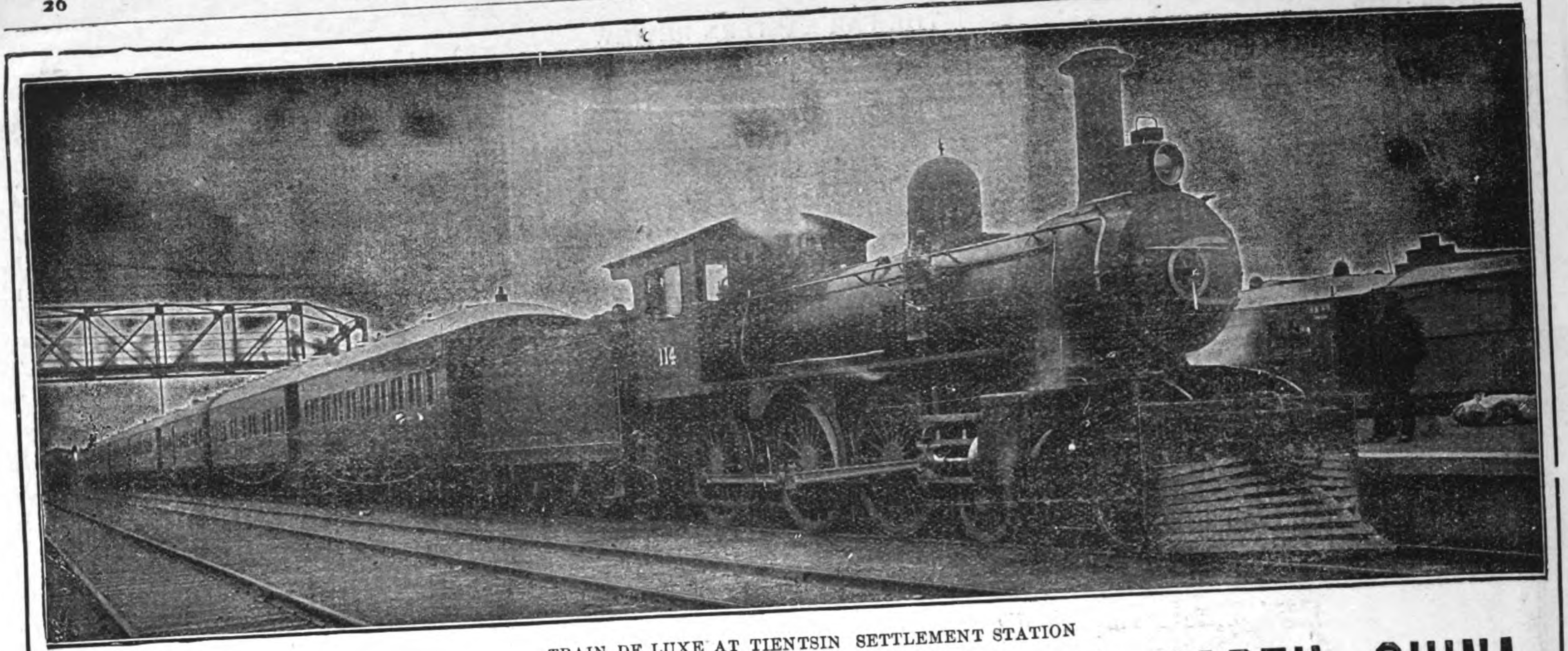

TRAIN DE LUXE AT TIENTSIN SETTLEMENT STATION

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THROUGH SERVICE FROM PEKING TO MUKDEN, CONNECTING AT MUKDEN WITH THE SOUTH MANCHURIA EXPRESS FROM TRANS-SIBERIAN ROUTE: AT PEKING CONNECTION IS MADE WITH THE PEKING-HANKOW RAILWAY FOR HANKOW AND YANGTSZE PORTS, AND INTERMEDIATE POINTS REACHED BY THE CHEN-TAI LINE TO TAIYUANFU, THE TAO-CHING LINE, AND THE PEINLO RAILWAY TO KAIFENGFU AND HONANFU. CONNECTION IS ALSO MADE AT PEKING WITH THE PICTURESQUE KALGAN LINE, "THE ROAD TO THE GREAT WALL."

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PEKING STATION

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For further information apply to any office in America or Europe of

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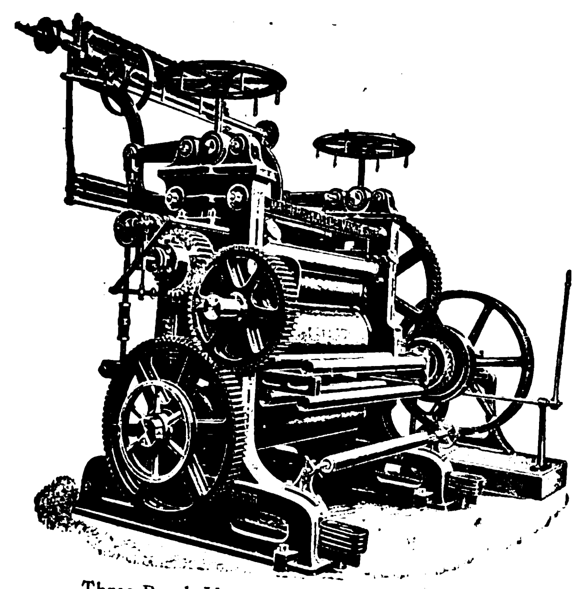
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|---|---|---|---|
| January<br>April<br>July<br>October | March<br>June<br>August | March<br>May<br>August<br>September | January<br>April<br>July<br>August<br>December |

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Sold as Armco Iron. Analyzes 99.84% Pure Iron.

Because of its remarkable purity (never less than 99.84% pure iron) and the care and skill exercised in every phase of its manufacture,

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far better than Steel or other irons. Galvanizing and other protective coatings are more lasting on Armco Iron because of the comparative absence of solid and gaseous impurities. This too adds decidedly to service life.

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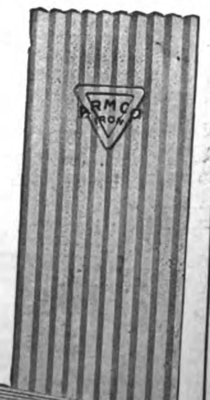
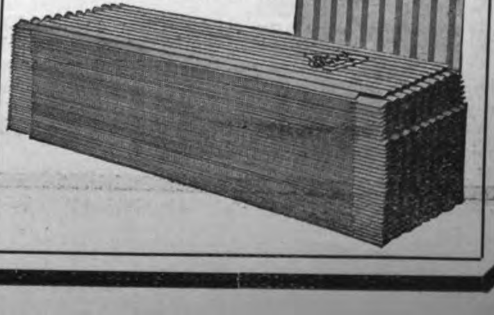



**will certainly save money in the long run for those who have buildings to maintain in tropical climates or where they are exposed to dampness or salt air.**



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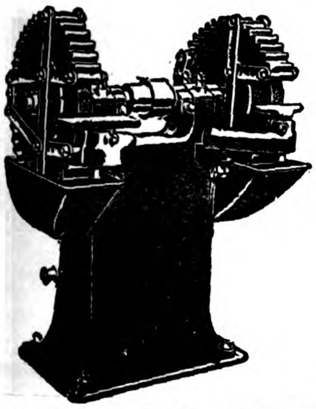


This new model DOUBLE EMERY GRINDER—compact, strong, durable—is well suited for general and heavy work. The stand is cast in one piece, which eliminates vibration; strong, mild steel spindle is provided, double cone driving pulley, enabling speed of wheels to be increased as they wear down and thus maintain their grinding efficiency, and when required, machine is fitted with dust exhausting fan and troughs, and "Atlas" Corrugated Protection Hoods. The lubrication system is the "splash ring" type, oil keeps clean and is used over and over again.

**Made for wheels 16", 18", 20", 22" & 24" diameter.**

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# SHANGHAI MACHINE COMPANY.

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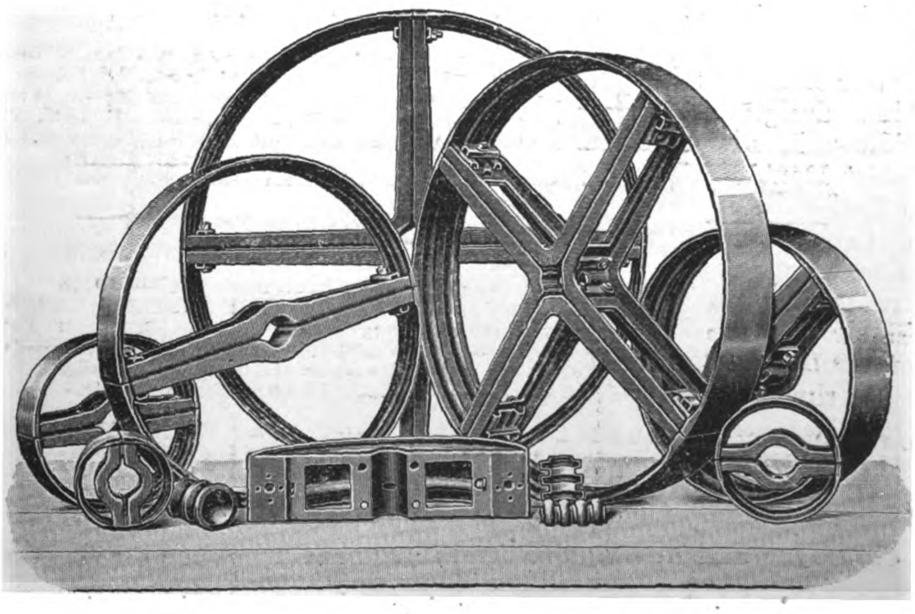


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Builders of Steam and Internal Combustion

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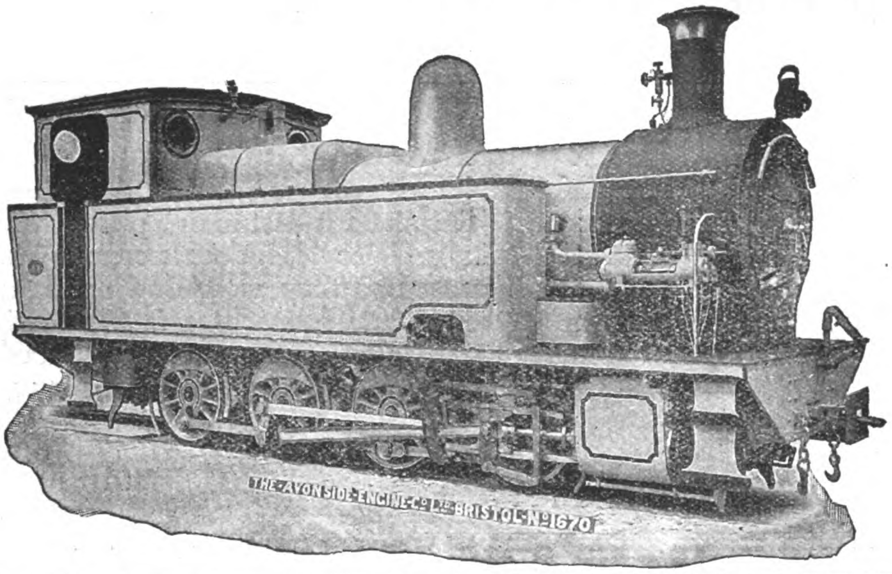

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CABLEGRAMS:
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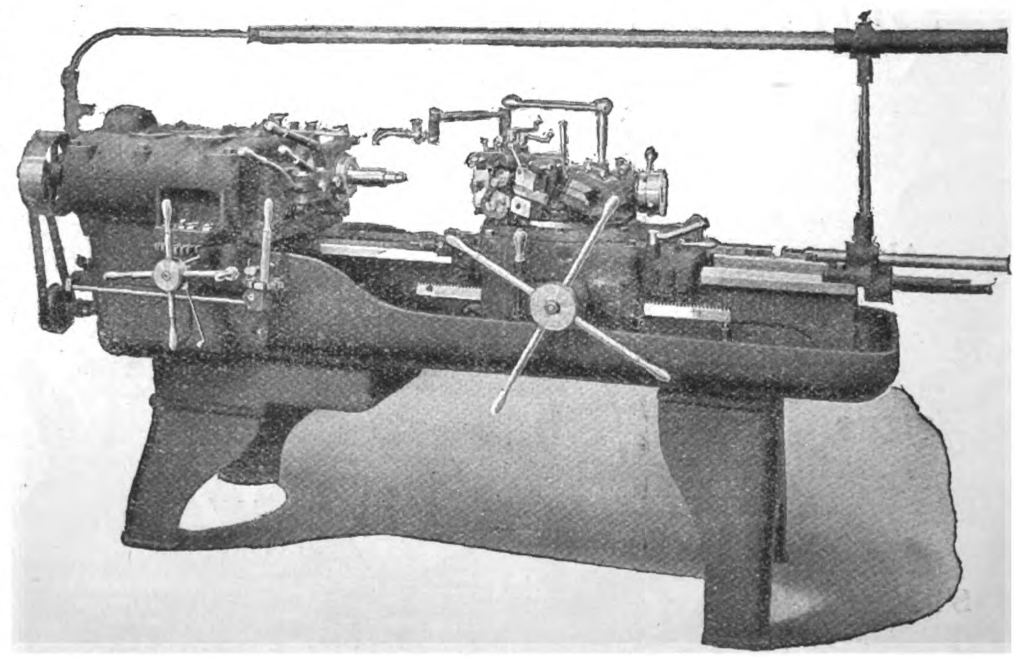

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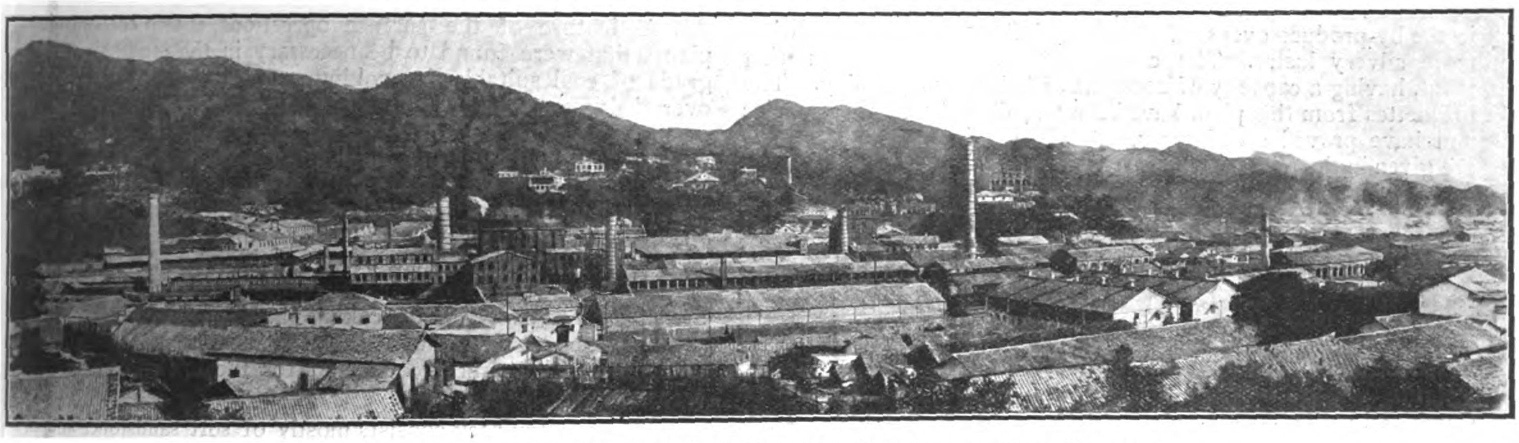


PANORAMA OF THE PINGSIANG COLLIERY OF THE HAN-YEH-PING COAL AND IRON COMPANY

# THE PINGSIANG COLLIERY

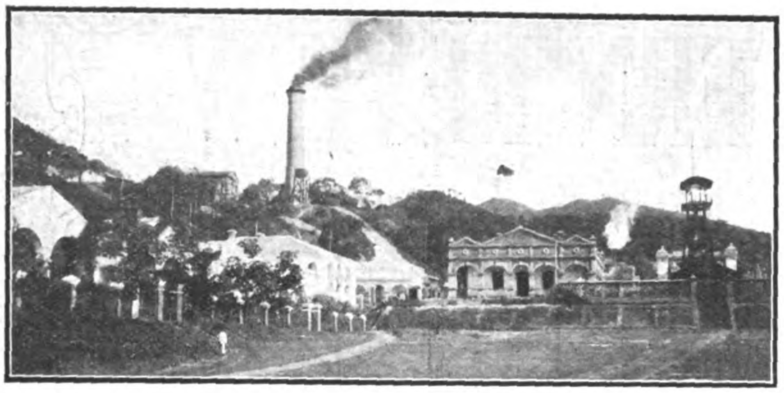
## A Story of Early Mining Difficulties in China

The Pingsiang Colliery is situated in the Province of Kiangsi, close to the eastern border of the Province of Hunan. The locality has always been known to contain an immense quantity of coal, and the Chinese in the past dug into these deposits from the surface at points on the outcrops so far as their superstitions would permit. At this time of writing the viewpoint of the natives has been greatly expanded and fear of the earth dragon ascending from holes in the ground is no longer an excuse for backwardness in developing the mineral resources of the country. When the Pingsiang colliery was opened the trials and tribulations, were, however, constant and varied, as is recounted by Mr. Gustavus Leinung, the Manager. To open the mine some $3,000,000 were borrowed from Germany, but that loan has now been paid back and the property is entirely owned by the Han-Yeh-Ping Coal and Iron Company, though certain loans which were contracted after the Revolution of 1911-12 remain outstanding.

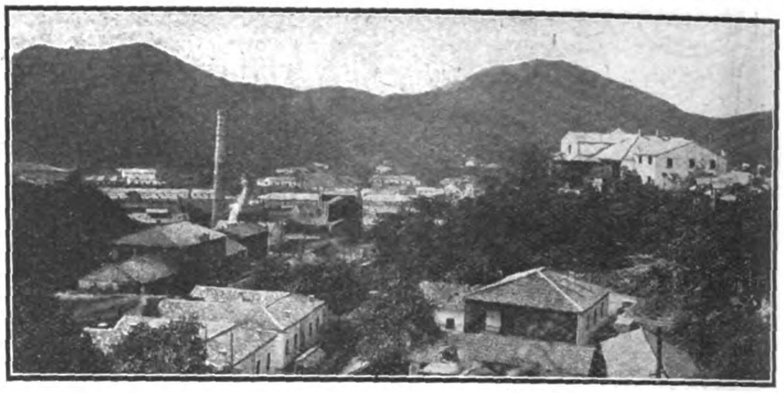
"It is a surprise to a stranger," writes Mr. K. P. Swensen, "to visit this mining camp. Riding over the railway from the Siang River to the mine, he is given a magnificent perspective of the typical Chinese landscape in a prosperous rice-growing section. From the mountain heights, irregular small ranges succeed each other into the valleys to blend with the foothills in a maze of terraced rice fields. One marvels at the thrift of the Chinese farmer and the intensive culture to which he is forced to resort. All this the traveller looks upon and wonders at the still crude methods of labor, when he suddenly finds himself thrust into the industrial city with its multitude of chimneys and substantial brick buildings, which have been built on such a modern scale by the Pingsiang Colliery Co. As the mine is in the heart of China, far from the source of machinery supplies and the like, it is necessary to keep complete repair shops as well as shops equipped to manufacture, as far as feasible, all necessary machines and appliances. This saves the time and expense incidental to ordering from abroad. There is a large round-house to accommodate the dozen or more locomotives and a large railway machine and repair shop. In the main machine shop are manufactured steam engines, compressors, pumps, lathes, and in fact almost everything in the heavy machinery line except electrical machinery. A foundry in connection turns out castings up to three tons weight.

CHANG SHOU-CHAN, THE COMPANY'S FIRST MANAGER

An important adjunct is a series of coke ovens along the railway tracks. These ovens are of the Otto-Koepe type, of which there are 300 in operation. Almost all the coke is supplied to the blast-furnaces of the Hanyang Iron & Steel Works at Hanyang. The coal used consists of the fine material saved from the washing plants and runs not over 10% ash and under 0.05% sulphur. In appearance the coke resembles that produced



PINGSIANG COLLIERY—HEAD FRAME FOR MAIN SHAFT



GENERAL VIEW OF PINGSIANG

in the by-product ovens of the United States with a somewhat more silvery lustre. The company has erected a briquetting plant, having a capacity of 200 tons of briquettes per day. The briquettes from this plant have been tested in the marine service and have proved satisfactory. Analyses of the coal and coke are given in the accompanying table:

ANALYSES OF PINGSIANG COAL AND COKE

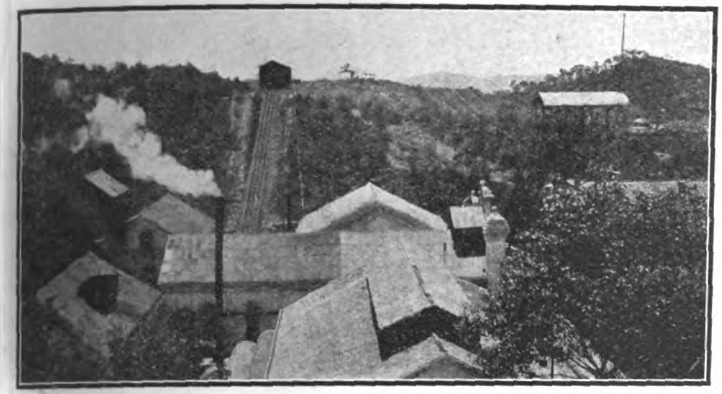
| | Foundry Coke | Smelting Coke | Navy Coal | Washed Coal | Run-of-Mine Coal. |
|---|---|---|---|---|---|
| **ANALYSIS IN THE CRUCIBLE** | | | | | |
| Fixed carbon | 87.941 | 88.060 | 60.167 | 59.921 | 54.118 |
| Volatile | —— | —— | 30.290 | 24.240 | 23.490 |
| Combined water | 1.119 | 0.840 | 1.953 | 1.149 | 1.392 |
| Ash | 10.940 | 11.100 | 7.590 | 14.690 | 21.000 |
| **ELEMENTARY ANALYSIS** | | | | | |
| Carbon | 83.520 | 84.252 | 79.239 | 75.330 | 70.758 |
| Hydrogen | 1.067 | 0.744 | 5.099 | 4.891 | 4.012 |
| Sulphur | 0.506 | 0.618 | 0.547 | 0.522 | 0.527 |
| Oxygen | 1.833 | 1.480 | 4.102 | 2.241 | 1.107 |
| Nitrogen | 1.015 | 0.966 | 1.470 | 1.169 | 1.204 |
| Hygr. water | 1.119 | 0.840 | 1.953 | 1.149 | 1.392 |
| Ash | 10.940 | 11.100 | 7.590 | 14.690 | 21.000 |
| **ANALYSIS OF THE ASH** | | | | | |
| Silica | 62.040 | 60.820 | 49.040 | 60.520 | 65.700 |
| Alumina | 26.360 | 27.640 | 25.690 | 24.979 | 24.890 |
| Oxide of iron | 5.960 | 6.100 | 16.430 | 3.840 | 3.770 |
| Lime | 3.410 | 3.200 | 5.340 | 6.340 | 2.860 |
| Magnesia | 1.770 | 1.850 | 2.800 | 3.400 | 2.220 |
| **MELTING POINT OF THE ASH** | | | | | |
| The ash melted at °C. | 1350 | 1450 | 1200 | 1250 | 1355 |
| **HEATING-POWER AND EVAPORATIVE EFFICIENCY** | | | | | |
| Capacity of heat (Cal.) | 6977 | 6962 | 7690 | 7402 | 6815 |
| Quantity of steam at 100°C. produced by 1 kg. of Pinghsiang coal from water at 0°C. (kg.) | | | 12.07 | 11.62 | 10.69 |

The mine is opened by a principal adit 3000 metres in length, and by another short adit which connects with a main working-shaft 170 metres in depth, and a ventilating shaft 110 metres deep. The shafts are round in section, brick-lined, 4½ metres and 4 metres respectively in diameter. Recently a large Fraser & Chalmers hoisting engine with reel and flat rope has been installed preparatory to deep sinking. At the present time all the coal mined comes out through the adits. The beds are now being opened continuously downward and the shafts are to be increased in depth as required. In the main haulage ways trains of cars are drawn by electric locomotives of 10, 40, or 50 hp. each. These were the first electric locomotives used in China and were started in the year 1906.

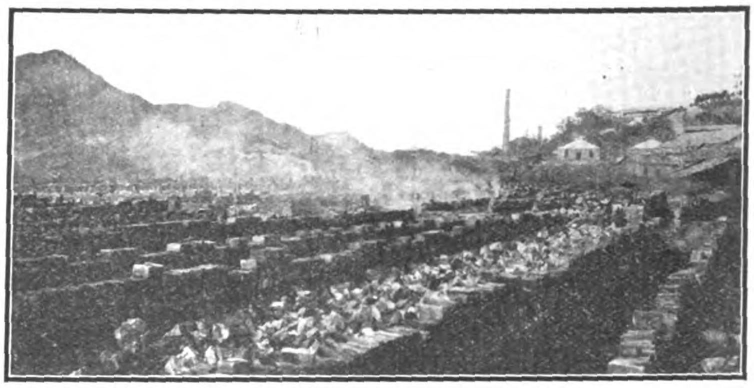
A feature of the surface operations is two coal-washing plants that were found to be necessary in the production of a grade of coal suitable for coking purposes. The coal is sent over shaking screens which give 4 sizes after the lump is run off over a 30 mm. screen. The material is then washed through a series of coarse to fine jigs, the light products of which all go to the coking ovens while the waste is discarded. This waste is given to independent Chinese coke manufacturers who re-wash the material by hand and turn out large quantities of good grade coke in simple rectangular ovens. This coke is sold for fuel. Fire-bricks of all grades and sizes are manufactured here and are of use especially for the coking plant and the furnaces in the steel works at Hanyang. A large amount is sent into the Oriental market and the demand for the brick is steadily increasing.

The country rock consists mostly of soft sandstone, and in the mine itself is found a hard limestone with many bands of slate and shale, as well as a large amount of soft clay partings in the coal seams. A great amount of development has been accomplished, and while the real life of the mine is largely conjectural, workable coal reserves have been developed to an extent that gives assurance of a supply that will last several hundred years with an output of 1,000,000 tons annually. The coal is bituminous, there being a hard and a soft variety. The hard coal is found in the smaller seams, those that are worked running from 15 to 75 centimetres in thickness. For the extraction of this coal it is necessary to take out a large amount of slate, most of which cannot be used for filling, but must be conveyed to the dump on the surface from the mouth of the mine. There are 8 inclined tracks running to the slate dumps which are already of immense size. Such a mine as this could not be worked profitably in the United States on account of the high percentage of slate since the labor cost and the cost of washing would be prohibitive. In China, however, miners are paid less than 13 cents gold per day, so that the labor cost is relatively low. There are three hard coal seams of large extent having a pitch of about 12 degrees, which are from 3 to 6 metres apart. They are mined by the ordinary long-wall method, in which the entries are run with the dip and along the strike and all the coal is extracted while advancing. This system of long-wall mining is also used in the soft coal seams, of which there are six. These seams vary in thickness from 3 to 12 metres. Drifts are run for the purpose of ventilation every 20 to 25 metres along the haulage-way and connection made about 70 metres distant from the main gangways to provide the air circulation. In the thickest seams blocks are removed to 3 metres in thickness, and, while the roof is supported with props, the open space is filled with waste and the second cut proceeded with.

The greatest difficulty is found in the maintenance of haulage and passage-ways, because of the tremendous pressure. This makes timbering an expensive item, for the timbers must be constantly replaced. No attempt is made to relieve the pressure on the main timbers by providing auxiliary sets as is sometimes done for swelling ground in America. The roof is allowed to fall until it becomes low enough to interfere with the workmen, when it is cut down and new sets put in. This happens as often as once every four months in certain parts of the mine. The main haulage-way is lined with brick with an



PINGSIANG COLLIERY—VERTICAL SHAFT AND SLATE DUMP



PINGSIANG COLLIERY—CHINESE COKE OVENS

arched roof where the pressure is greatest. At other places the roof is supported by steel rails and lagging with brick walls. In the endeavor to maintain permanent haulage-ways where the pressure is great, as many as 10 courses of brick have been used in the arches and in many cases these have failed and crumpled under the pressure. This is the only way the engineers have of ascertaining the relative pressure although such trials are very expensive. In the matter of handling the labor, the management has found it an advantage to let out the greater part of the work by contract to Chinese foremen. It is a policy that is found to be particularly successful with the Chinese. They must be driven to doing right and habitually disobey orders unless constantly watched. The mining of the coal is done at a stipulated price per ton, varying with the conditions of mining, and the contractor must guarantee a minimum of 10 to 12% ash, before his output is accepted. Timbering and tunneling is done at an agreed price per metre. The coal and coke are dumped into steel cars and conveyed over standard track to the port of Chu Chow at which point, along the river, are lined up steel and wood lighters, with barges and junks of various description. These are towed to Hankow by the company's tug-boats in lots of about 1200 tons. The handling of the coal affords an instance of how necessary it is to adopt methods to suit conditions in a strange country. There is no need for the use of large capacity automatic-loading devices such as are used in America, for in China labor costs but about one-twentieth of what it does in America. The coal, after being dumped on the ground along the track in great piles, is conveyed by coolies who use carrying-poles with baskets attached, holding perhaps a bushel each. There are several hundred of these men constantly at work moving from 1800 to 2000 tons of coal and coke per day from the railroad into the barges.

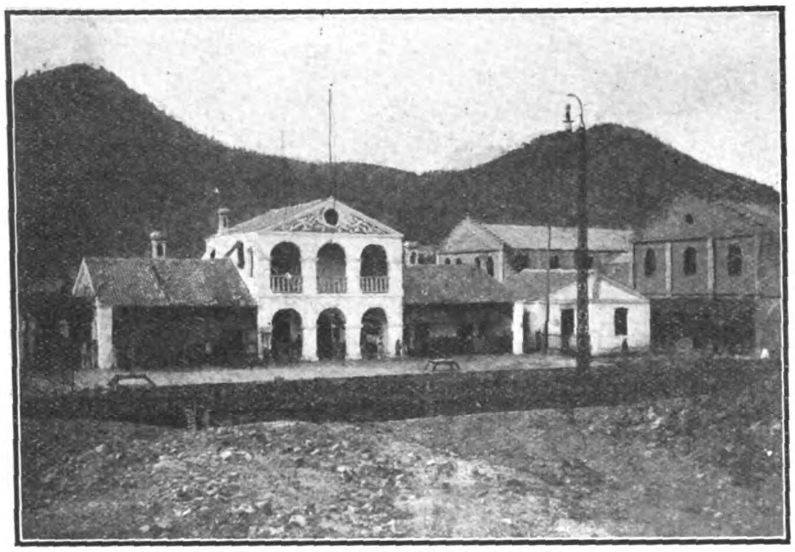
Transportation is handicapped during the winter season because of low water in the upper Siang River. This difficulty will be eliminated as soon as the railroad now under construction is built. A feature of the Pingsiang Colliery Co.'s operations is the growth and progress, these being evident in the output, in the resultant enlargement and improvement of the plant. The engineers and managers endeavor to turn out highgrade products. The success of the company furnishes an example for future undertakings and gives an insight into what may be expected from the eventual development of China's immense mineral and coal deposits."

### The Early Difficulties

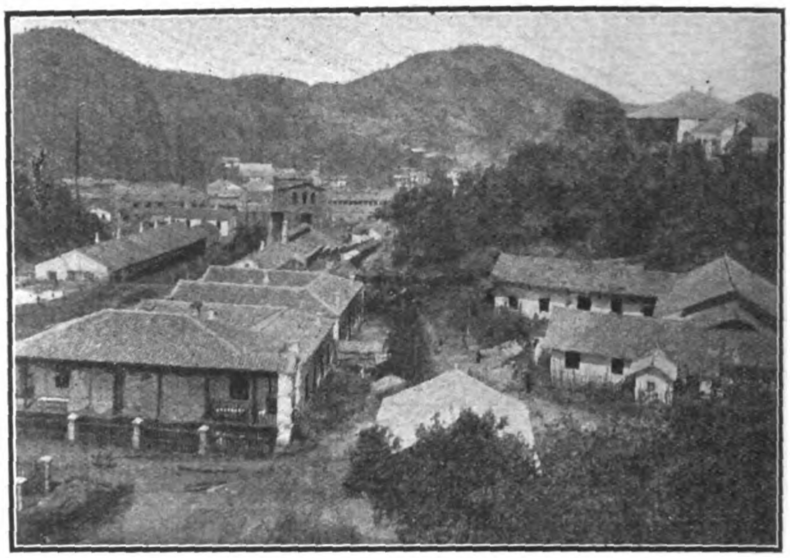
An interesting history of the mine has been furnished us by Mr. Leinung. He first went up to Pingsiang in 1896 for preliminary investigations, but it was not until 1898 that the mining operations really started. Mr. Leinung was alone for the first two years and had to do the geological, survey, planning and architectural work. Upon his first arrival at Pingsiang he was an object of awe and amazement to the natives who had never seen a European. All sorts of beliefs were held about him. He was said to have three eyes, one at the back of his head, and it was believed that he could see deep into the bowels of the earth and detect the treasures there. When he entered Pingsiang for the first time in 1896 the natives were sitting on the roofs of houses to see him. He was put into a small room in an ancestral hall in which there was a grated window, and the people were allowed to come along in squads of 10 or 12 to have a look at him, as though he were a rare zoological specimen. The idea was to make them accustomed to the appearance of a foreigner. During the first year there were always 200 soldiers around Mr. Leinung. He was not allowed to leave his quarters and had strictly to obey orders. At this time there was very strong anti-foreign feeling in Hunan and he had to journey to Pingsiang via Nanchangfu and Kiukiang as Hunan was forbidden to foreigners. Two years later he had to leave owing to riots and murders of missionaries.

When Mr. Leinung journeyed to Pingsiang through Hunan in 1900 the windows of his house boat were shrouded with blinds as he passed Changsha so that no one could see that there was a "foreign devil" within. He had a very exciting time for the first year, with the strong anti-foreign sentiment prevailing all round him. On one occasion one of his servants came to him with a placard which had been pasted up outside his house urging the people to kill the foreigner and all the Chinese with him at Pingsiang, and the servants, not unnaturally, became very frightened.

At first he employed men from Luyang as miners, then men from Hunan, and eventually men from the Tayeh iron ore mines; men whom he knew. In each case, however, the result was unsatisfactory. The local men were opium smokers and did not want to work regular hours. The men from Luyang were a disorderly, lawless lot, and those from Tayeh thought that they could draw their pay without working. Very often Mr. Leinung was almost despairing and felt inclined to drop the attempt to open up the mine. For the first six months he had depended upon his interpreter, but the latter had failed to handle the men properly. In the meantime Mr. Leinung had learnt a little Chinese and he determined to put the interpreter on one side and negotiate himself with the better men whom he had picked out. He asked these men to work by contract which they refused to do before, preferring payment by the day. Mr. Leinung took the most reasonable of the men aside and showed them that they could make more money by working by contract. They agreed, and gradually he succeeded in making a start on this basis. In the beginning he followed the invariable practice in China and took a compradore to manage all the details. The unfortunate result was that as the work grew greater and the number of miners larger the compradore could not personally superintend his men and get the proper amount of work out of them. The contracts which Mr. Leinung made with the contractor or compradore were drawn up on similar lines to those with which Mr. Leinung was familiar in his own country, but the contractor had engaged his men on daily wages and could not supervise their work properly. The result was that he began to lose money and Mr. Leinung had to point out to him that it was impossible for him (Mr. Leinung) to pay more than was named in the contract. The contractor got deeper and deeper into debt with his men. It was now approaching Chinese New Year, when, as is generally known, all Chinese are supposed to pay off their debts. The miners insisted upon the contractor paying them, but as he had no money he told them that the fault was with the foreigner who did not pay him enough money. Then came the first strike at the Colliery. The men beleaguered Mr. Leinung's house and



PINGSIANG COLLIERY—RAILWAY STATION AND THE WORKS YARD



PINGSIANG COLLIERY—HOSPITAL AND OFFICE BUILDINGS

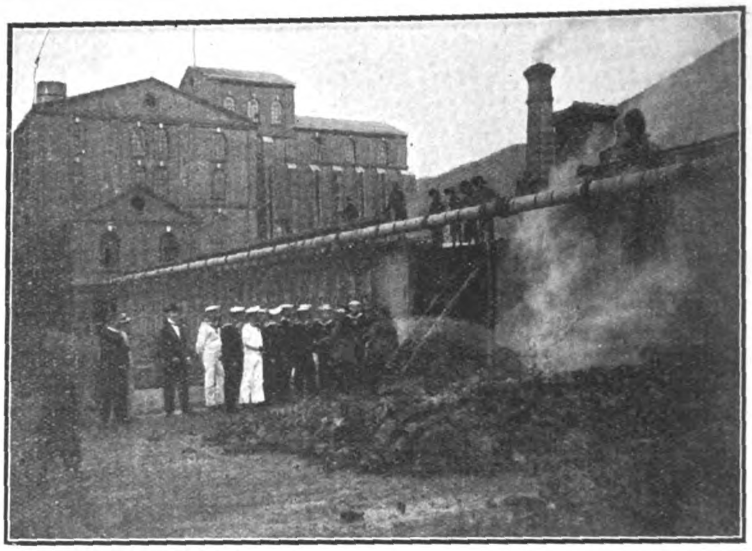
demanded money, which of course he refused to pay. That strike lasted for three days. Mr. Leinung took advantage of it to break the power of the contractor, because he saw that it would not be advantageous to do the work through a single contractor. He decided that it would be better to have individual contracting parties at the different working places.

At this time he had about 200 miners and about 20 working places, most of which, of course, the contractor could not superintend, not being an experienced miner. At that time with so small a body of men Mr. Leinung knew almost every one individually and knew their capabilities—good and bad. He took the opportunity to persuade the workmen that it would be to their interest to take contracts for a single working place by themselves. He offered them in the last moon of the year for that month such contracts that they could earn as much in one month as the contractor would pay them in four or five months. Mr. Leinung wanted to gain his point and that was what dictated this offer. Many of the better miners were allured at the prospect of earning so much money and consented to take the individual contracts. On the third day he got all of the men who had accepted the contracts into his office, made them an advance payment and had the necessary tools delivered to them. Mr. Leinung and his assistant were in the office at 9 o'clock making the final arrangements with the miners and just when he thought that everything was satisfactorily arranged some miners came in with bleeding heads. These were some of the men with whom he had already settled the individual contracts and who had gone to work. These men kowtowed and asked to be excused for not going on with the contract as they would be killed by the other miners if they did. Mr. Leinung decided upon quick action and told his interpreter to tell the soldiers to arrest the men who had attacked the contractors. The soldiers refused to venture among the crowd, being afraid. That made Mr. Leinung more furious and he declared that if the soldiers would not go he would go himself. He was warned not to do so as the people were in an ugly mood and he would only endanger his life. He insisted upon going and armed only with a strong miner's oak stick and accompanied by the assistant engineer he set off for the men's quarters. Some soldiers followed. When he reached the men's quarters he was saluted by yells and threats and the position was anything but pleasant. But knowing that if he showed any fear he was lost he summoned up all his courage and went right up to the mob and, taking an elevated position, began to address them in as good Chinese as he could command. He knew enough to make them understand. In his address he pointed out that after he had made satisfactory arrangements with the men who really wanted to work some mischief-makers had attacked the men and threatened others who wished to work. Moreover, he told them, the contractor had not been able to pay them because he was not able to get them to do the amount of work corresponding to the daily wage he agreed to give them. He had himself been a miner and they could not fool him. The contracts given to the contractor were fair and the amount of work could be done. They were similar to contracts in foreign countries where the miners made from $ 1.50 to $ 2.50 per day. The contractor had made nothing out of the contracts, but had lost money and was unable to pay them simply because of their own laziness. He again offered them individual contracts which would enable them in one month to make up all the money the contractor owed them. At 6 o'clock the following day he would go to the mine and he expected to see them in their working places and then final arrangements would be made.

When Mr. Leinung finished his speech there was shouting from some quarters, and demands that before there were further negotiations he should pay over the money owing by the contractor. He knew the men who called out as a lazy lot of useless fellows who had always been an encumbrance. Accordingly he caught hold of the one nearest by the queue, made the others—about six in number—come and stand beside them. Then he told them flatly that they were a set of useless rascals and that his offers were not for them. He had no use for them and told them that they had to clear out. He ridiculed them, and the other Chinese, who knew that Mr. Leinung had judged fairly about the capacity and character of these men, began to laugh at them, and the victory was practically won. The next morning he found the men in the working places and by noon had everything settled and could leave the mine.

A new start was made the following day with satisfactory results. Everything went well for about a year, the men making good wages. The mine grew bigger and a much larger number of men were employed. By the time Chinese New Year came round the gang leaders had gradually developed into contractors, who ceased to work themselves but fed and housed the men and "squeezed" them. These gang leaders only visited the mine on the first of the month to make contracts and on the fifteenth, pay day, when they appeared in gorgeous silk attire, being carried from Pingsiang city in sedan chairs. The rest of the month they spent enjoying themselves in the city, letting the men work for them. This did not please Mr. Leinung at all and he realized that he now had to break the power of these contractors. The only way in which the power of the contractors over their men could be broken was by quartering the miners in houses belonging to the mine and feeding them at the cost of the mine. In the first place, therefore, huge mining quarters with kitchens and stores had to be built. Then the individual control and payment of the miners had to be provided for. The quarters were almost completed by the next Chinese New Year and the miners were informed that every one should get his pay according to the work done, and that no man would have the right to squeeze other men. Early in the New Year he received a written protest from the 63 gang leaders in which they told him that all the miners protested against the innovation as they were afraid that they would not get proper quarters and good food. Several hundred of the miners, the protest declared, would go on strike

Pingsiang Colliery—Major Bowley, United States Military Attache, and Manager Leinung (in white) after a visit of inspection



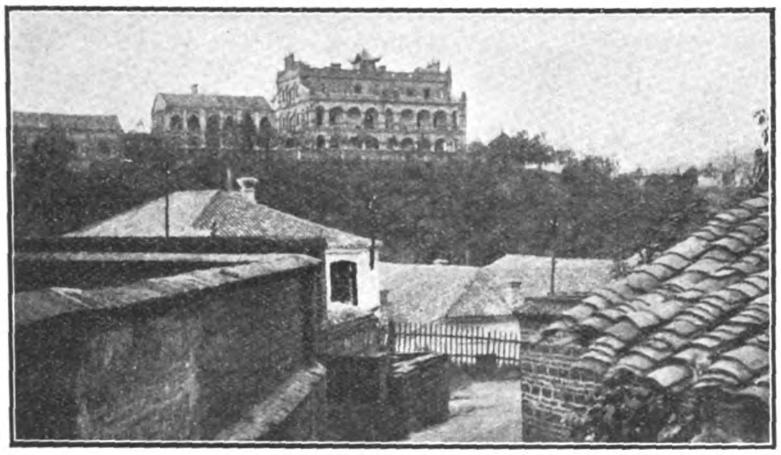
Pingsiang Colliery—Cooling Coke from the Ovens

if this innovation was to be made. As Mr. Leinung had built the quarters and had made all preparations for feeding the men he was naturally very angry at this opposition. As a matter of fact he knew that the greater proportion of the miners welcomed the innovation and were rejoiced at the prospect of being no longer squeezed by the gang leaders. It became necessary to find out who were the ringleaders in connection with the protest and to make an example of them. Early in the month when work was commenced he went from gang to gang finding out the men who had instigated the protest. One man who was charged with being a ringleader became frightened and said that he was compelled to sign the protest, although he did not wish to do so. It leaked out that on the fifth day of the New Year the miners had been assembled at a temple near by and that one of the gang leaders had addressed them telling them that the proposed innovation was against their interests and that they should combine to protest against it. The usual thing happened; the crowd went with the agitators and the aid of a *literati* had been invoked to draw up the protest. They all swore not to betray each other.

Mr. Leinung asked the men at the head of each gang whether they would work under the new system and they all agreed to do so if the others did. After three days the list of men who had thus agreed included most of the gangs working in the mine. Then Mr. Leinung went to the man whom he had all along suspected to be the ringleader, paid him off and told him to leave at once. The next month the miners' quarters were ready and the innovation was made without a hitch. The miners liked it immensely.

All went well for another year, but the number of miners and the output steadily increased and the cupidity of the miners was again stirred. They began to pay no attention to the quality of the stuff mined and expected to be paid for anything they sent out. There was constant trouble about this, and it became evident that something would have to be done. Mr. Leinung went to Europe about this time with Dr. V. H. Lee to assist him in matters connected with the Hanyang Iron Works, and during his six months' absence things had to be left to the assistant engineer, who had no knowledge of how to deal with Chinese. Before leaving, however, Mr. Leinung gave him full instructions that all coal that came out of the mine should be taken to an assembly station. He had this arranged so that on his return the assembling of the coal could be started. Some of the seams are pure while the miners turned out stuff with 45 per cent. of ashes as coal and the coal washeries were not sufficient to deal with it. During Mr. Leinung's absence conditions became worse among the miners. Soon after his return from Europe the contracts were fixed at so much per ton or per truck for coal containing a reasonable average percentage of ashes and for every one per cent more ashes one or more cents was to be deducted from the contract price per unit. He had proved to the men that they could turn out stuff with not more than 20 per cent. of ashes and had told them that he would give 20 cents per truck and deduct 1 cent for every one per cent. more than 20 per cent. of ash so that if there were 40 per cent. of ash they would get nothing. During Mr. Leinung's absence the engineer in charge does not appear to have handled matters very judiciously and he was dismissed immediately after Mr. Leinung's return from Europe. This meant that he had an assistant new to the place and conditions, when this rule was introduced. The new man was eager and energetic and anxious to show his ability. The first month the new rule came into force Mr. Leinung was called to Shanghai, so that he was absent when the payments for the month had to be made to the miners. Now the miners had ignored the rule and had continued to produce dirty coal, with the result that when pay-day came they had no wages to draw. There were about 2,000 miners employed at this time. Not unnaturally when they were told that they had earned nothing they were very discontented. The new man handled the situation injudiciously and the miners became enraged. They sent a deputation to his house and they complained that if they got no money they could not live or send money to their families. This discussion took place outside the engineer's house and he became frightened at their attitude and went inside. Stones were thrown and this was the signal for a general attack on the houses of the foreigners. Windows and furniture were smashed, and the situation became serious. The acting Chinese mine manager, the mine manager being absent, gave orders that the engineers should escape to the railway station where a locomotive was ready to take them to Liling, the then terminus. This they succeeded in doing, and in the meantime a telegram was sent to Mr. Leinung telling him of the disturbances at the mine. He was very anxious for the safety of his men and asked his Consul-General what to do. The despatch of a gun-boat was suggested, but this idea was not adopted and Mr. Leinung himself started to return to the mine. In the meantime the old manager had returned. Being a sagacious man he succeeded in appeasing the miners, and the engineers who had fled were able to return to the mine before Mr. Leinung arrived. None of them, however, was allowed to enter the mine before he came. When he arrived he told the men that it was not his intention not to give them any money, but they must understand that coal and not stone was wanted. He would prove to them by taking samples at each of the working places that it was possible to produce clean coal. As Mr. Leinung had great influence with the miners and was looked upon as the "Father of the Mine" the men acknowledged the force of what he said and a compromise was arrived at. It was not, however, safe to let the other foreigners go into the mine for several days. The men were treated more leniently on the next pay-day, and they gradually became accustomed to the new rule and the percentage of ash was reduced from 40 per cent to 20 per cent.

One great mistake had been made whilst Mr. Leinung was away in Europe and that was allowing too many miners



Pingsiang Colliery—Administration Building

Pingsiang Colliery—Loading Coal from Cars to Barges

to be employed in the mine and also allowing eight hour instead of twelve hour shifts. It became necessary to rectify the hours of the shifts in order to get more work out of the men, and also to reduce the number of miners. The amount of work done per head was less than one-fifth of what foreign miners could do. Mr. Leinung was convinced that he would get much more work out of the men if he reverted to the twelve hour shift and reduced the number of men. This was in the year 1906. The men were quite satisfied to revert to the 12 hour shift, which had been the original system. In June, 1906, the 12 hour shift system was reintroduced. This was the time of the great floods in Hunan, when the water was up to the roofs of the houses in Changsha. It rained from October, 1905, to June, 1906, and the water in the mine greatly increased. Sufficient provision in the way of pumping plant had not been made, but what pumps there were kept working night and day. No time could be spared for any repairs to the pumps and there was a constant danger of a breakdown.

On the evening of June 10, 1906, when Mr. Leinung was at dinner the engineer in charge of the mine pumps came in and declared that the mine was lost as two pumps on the lowest level had broken down and it was impossible to get them repaired. After many days of ceaseless toil the danger was averted, but on pay-day a big strike among the miners who objected to the reversion to the twelve hour shift and to the dismissal of some 500 miners, was announced, and which lasted for three days during which time of tension a locomotive with an empty car was in readiness for the foreigners to make a start at any time.

On the fourth day work was resumed. The miners had consented to go back to the 12 hour shifts, but the foreigners were warned that if they attempted to introduce any other innovations all the miners would go on strike. Everything went on smoothly for the next few months, but in November troubles broke out in the neighbourhood and a revolution was apprehended in the country north of Pingsiang city. That was at the time of the Triads rebellion. Placards were posted on the walls of Liling and Pingsiang calling upon every one to rebel against the Manchu Government and every day decapitation of suspects took place at Liling and Pingsiang. Rumours were spread at that time to the effect that foreigners were getting the eyes of Chinese children to use as medicine. On the night of December 7 all foreigners were urged to leave that night. A locomotive and car were waiting at the station. The rebels had already taken a place about 90 li distant and were then on the march for Pingsiang city. The path they would follow lay for the last 30 li from Siangtung along the railway line, and it was to be feared that they would burn the timber bridge at Siangtung. A little after 2 a.m. they started, expecting to find the bridge at Siangtung in flames, or to meet the rebels on the way. The foreigners carried rifles for their defence, if necessary. The necessity fortunately did not arise, and they got safely to Changsha, where the party stayed for a month on house boats. During this month they received word from time to time from the colliery that the manager had taken energetic steps to secure peace and that soldiers had arrived from Changsha and Wuchang. Military law was prevailing at Pingsiang and decapitations were going on by the dozens day by day.

About January 5 they started back to the mines, and on arrival found that only 300 out of 2,000 miners were left though actually the mine itself had suffered no damage except the interruption of output. Work was resumed with a better class of miners and the undesirables had been got rid of by this disturbance.

From this time there was steady progress at the mine, and the number of men and output grew bigger and bigger as the men grew more experienced under foreign training. Nothing happened to interfere with the normal course of events until the revolution of 1911. This of course brought the foreigners into a critical position. They had heard of the rebellion at Wuchang and all sorts of rumours were afloat. They did not know what had become of the foreigners at Hankow. Then they heard that the disturbance had spread to Changsha and on October 22 at 9 p.m. the foreigners were warned that as Changsha was in the hands of the revolutionaries and no one knew what might happen to foreigners they must leave. They left at 3 a.m. and on the morning of October 24 they arrived at Hankow.

The affairs of the company were naturally in great confusion. Sheng Kung-pao had been cashiered and had escaped from Peking to Tsingtao; the Hanyang works were stopped on account of the fighting and all the tugs and lighters had been seized by the revolutionaries. There were no funds in hand. A temporary office was opened in Shanghai, all the miners were paid off, only the officials and a sufficient number of men to keep the mine in order being retained. The output, of course, was stopped entirely and only the main galleries were kept in repair. It was only due to the help given by Japanese capital that the mine was saved in this way. No other foreign capital could be obtained at that time. After having settled matters satisfactorily at Pingsiang the Chinese manager went to Shanghai and after consultation it was decided to discharge all the foreign engineers of the Hanyehping Works and the colliery, and most of the foreigners left for Germany in January, 1912. Mr. Leinung remained in Shanghai to watch developments, and later received telegraphic instructions to re-engage only five of his former assistants instead of twelve as had been arranged, on account of fresh troubles having arisen at Pingsiang. The natives in the vicinity of the mines had encroached upon the Company's property. They had opened a good many native mines in the Company's coalfield, although the first Chinese manager had taken great pains to buy out all the native mines within the field in the first years, and everything was in confusion as a result of the revolution, none of the former rights obtained from the Manchu Government being recognised. Every province wanted to be independent of the Central Government and in such conditions it seemed very doubtful whether it would be worth while resuming work at the colliery. However, at the beginning of April, 1913, they were able to return and to start work. It took some time to get the mine in order again, but this was done at last, and at present the output is about 3,000 tons per day.

# COLLAPSE OF THE MONARCHY MOVEMENT

## Presidential Mandate Restores the Republic

*The Far Eastern Review has published each month in its columns as a categorical record the developments in connexion with the attempt to restore a monarchy in China. All important documents in the case will be found in previous issues. The following continues the story.*

The issue of the Mandate postponing for an indefinite period the enthronement ceremony (reported in the last issue of the REVIEW) was variously interpreted. In some quarters it was believed—and the beliefs have proved correct—that it foreshadowed the eventual abandonment of the attempt to restore the monarchical system, while in others it was held that the system had already been restored and that the postponement of what after all is only a ceremony involved no change of plan.

A most important sitting of the Tsan Cheng Yuan was held on February 26 to consider a proposal to accelerate the convocation of the National Assembly. The representative of the Government, Mr. Cheng Ming-chen, in introducing a Bill providing for an earlier meeting of the National Assembly than was originally intended, explained that the Government was anxious that the system of constitutional government should be instituted with the least possible delay. The idea was to make the members elected to the National Convention, members of the National Assembly, as the electorates and electoral methods in each case were practically identical. The proposals of the Government were agreed to and the following dispatch was sent to the State Department:—

"In tendering this reply, the Tsan Cheng Yuan, acting in the capacity of the Li Fa Yuan, has the honour to acknowledge the receipt on the 25th inst. of the following mandate:—

'A Li Fa Yuan composed of members elected by the people ought to have been convened during the period of the Constitutional Compact. The need of such an organ is doubly urgent during this time when the Throne intends to start anew with the people. A Mandate was issued last year in the 12th month stating that the legislative organ would be established within a year. The desire of the people to see an efficient government at work is more earnest than ever, and in view of the need to respect the wish of the people and to reform the administration, the delay must not continue. The process of election for the Li Fa Yuan, however, is exceedingly complicated and difficult, and it is impossible to expect the same to be carried through in a short space of time. In these circumstances, it would be more practicable to treat the final election of the Citizens' Convention—already carried through in the provinces and all the special administrative areas in advance of the date fixed last year—as the final election for the Li Fa Yuan. In pursuance of this policy the successful and reserve members of the final election of the Citizens' Convention shall be regarded as having been elected to the Li Fa Yuan. The single balloting of the Special Central Electorate and the Combined Electorate of Mongolia, Tibet and Tsinghai, which have not yet been completed, shall be held at an early date for the purpose of electing members to the Li Fa Yuan. In this way the Legislature representing the wish of the people may be convoked within a short time. Whether this be practicable or not it is our duty to consult the acting Li Fa Yuan, which shall give us an early reply.'

"The State Department, in compliance with the instructions from the Throne, urged that this House should quickly deliberate on the question and submit an answer at an early date. In compliance with the order a meeting has been called and held on the 26th inst., and the House is unanimously of the opinion that since the procedure for electing the members of the Li Fa Yuan is identical with that for the election of members for the Citizens' Convention and since the people are eager for an efficient administration and the Government, at the beginning of the era of a constitutional government, is desirous of having the Li Fa Yuan established at an early date, the successful candidates of the final election of the Citizens' Convention should be regarded as successful candidates of the final election of the Li Fa Yuan, and the election of the Special Central Electorate and of the Combined Electorate of Mongolia, Tibet and Tsinghai should be abridged to an earlier date for the election of their proportion of members to the Li Fa Yuan. In proceeding in this manner the law will not be violated in the least. A perusal of the organisation law of the Li Fa Yuan shows that its regular session should begin on the 1st day of the 9th month and continue until the end of the year. At this time when the cause of constitutional government is advancing vigorously, the convocation of the Li Fa Yuan should take place at an earlier date than previously fixed so that the Legislature may soon be established and the expectations of the people may be satisfied and the foundation of the nation consolidated. The question has been discussed and unanimously settled in the sense of the proposal submitted. We have the honour to communicate this reply respecting our decision and ask the State Department to submit the same to the Throne for promulgation.

"Dated the 26th day of the 2nd month of the first year of *Hung Hsien.*"

This was followed by the promulgation on February 28 of the following Mandate:—

According to the organisation law of the Li Fa Yuan, the beginning of the regular sessions of that body is fixed for the 1st of the 9th month and to continue until the end of the current year. But the opening sessions of the Li Fa Yuan differ somewhat from what will be its ordinary sessions. At this moment when the constitutional movement is being pressed with the utmost vigour, the Yuan should be convened at an earlier date than that prescribed in order that the longings of the people may be satisfied. It is hereby proclaimed that the first day of the 5th month is fixed as the day on which the Li Fa Yuan shall be convened. The Ministry of Interior and the Bureau for the Preparation of the Li Fa Yuan shall make all the necessary preparations to this end in accordance with law.

Since the past year we have, in absolute sincerity, declared to our citizens that the establishment of a constitutional government will be effected with the utmost despatch. Although it is highly important for a constitutional country to have a responsible administration to carry out great policies for the benefit of the country and secure blessings for the people, in addition to the Judiciary which must be organised in accordance with law, it is doubly important that there should exist a Legislature, collectively representing the wish of the people for the purpose of strengthening the far-sighted policy of securing a permanently peaceful and efficient Government. As a result of the Constitutional Compact—which invested the power of national legislation in the Li Fa Yuan to be composed of members elected by the people—the Bureau for the Preparation of the Li Fa Yuan was organised after the promulgation of the Organisation Law and the Election Law for the Li Fa Yuan, in order to attend to the necessary measures and arrangements required by law for an early establishment of the Legislature. Later, the Provisional Constitution Conference adopted a Bill for the organisation of the Citizens' Convention, which was promulgated according to the process of law. The organisation of the Citizens' Convention, with the exception of the sixty members elected by the legislating, administrative and judicial organs, is similar to that of the Li Fa Yuan respecting at once the number of members, the division of electoral areas, the qualifications for the electors and the procedure of election. And as the elections of these two bodies and their respective functions are practically alike, a Bureau for the Preparation of the Citizens' Convention was attached to the Bureau for the Preparation for the Li Fa Yuan, in accordance with law so that the two classes of affairs might proceed at the same time without causing confusion.

Since the establishment of these two Bureaux, repeated instructions have been given to the same speedily to complete, with the co-operation of the Superintendents of Election, the various stages in the process of organisation, including the investigation and drawing up of the lists of electors and candidates, the verification of electoral qualifications, etc., etc. In the ordinary course, the election for the Li Fa Yuan should first be held; but as the process of constitution making had already been begun by the nomination of a Committee by the Tsan Cheng Yuan to draft the same, it became necessary to change the date for the convocation of the Citizens' Convention to one earlier than that originally fixed. Consequently the election for the Li Fa Yuan, which was to have preceded the other, was utilised for the election to the Citizens' Convention. In this way, the election for the Citizens' Convention was begun after the 10th month of last year, and by the 12th month of the same year all the members of the Citizens' Convention, with the exception of those of the Central Special Electorate and the Combined Electorate of Mongolia, Tibet and Tsinghai—the elections of which have not yet been held—were elected as the result of the final elections held in the various provinces and special Administrative Areas as reported, at various stages of the electoral process, by the

Bureau in charge of the Citizens' Convention Affairs and the Bureau for the Preparation of the Li Fa Yuan.

While it is not advisable to delay the actual establishment of constitutional government, it is also true that it will not be wise to hurry through, without proper consideration, the drafting of the constitution; and since the great fundamental law is closely and vitally related to the welfare and otherwise of the nation, it is recognised that the Committee drafting the constitution should be given ample time to discuss the same and not be unduly urged to hasten their work, which, if done under circumstances of haste, will pack the way with obstacles. On the other hand it is not in accordance with policy to hasten the establishment of constitutional government with the utmost vigour and to respect the will of the people and at the same time to postpone the convocation of the Li Fa Yuan until after the promulgation of the constitution, which is to follow the passage of the constitution in the House of the Citizens' Convention. By law there should have been a Li Fa Yuan composed of members elected by the people during the period the Constitutional Compact was in force. At this time, when we desire to begin anew with the people and when the concern of the people for political affairs is more earnest than ever the Li Fa Yuan provided for in the Constitutional Compact should be organised at an early date in order that the people and the Government may mutually assist one another in their task of securing an efficient administration. A declaration was made last year in the 12th month stating that the legislative organ would certainly be organised within this year. At that time we were already of the view that the people's representative body was vital to the foundation of the country, and that it was impossible under any circumstances to postpone the actual adoption of a constitutional government. The desire of the people to see an efficient administration is now more keen than ever, and the great policies of the State do need their upholding. Although no definite provisions have been made in the Constitutional Compact respecting the time limit within which the Li Fa Yuan should be organised, we in pursuance of our policy to respect the wish of the people and energetically to work for administrative reform, consider this to be instantly necessary and must not be further delayed.

It is presumed that when the law for the election of the members of the Li Fa Yuan was made, the intention of the draftsmen was to emphasise the importance thereof by making the process at once complicated and prolix. In spite of the fact that a special Bureau has been in existence, the sending of telegrams and documents back and forth has taken up a great deal of time. Besides, the financial resources of the local places are limited and if they were to go through the process of election for the Li Fa Yuan as prescribed by law after the preliminary and final elections which have just been held in connexion with the Citizens' Convention, it is feared there will be obstacles in the way and the hope of witnessing the establishment of the Li Fa Yuan within a reasonable time will be falsified. Under the circumstances and for the sake of expediency, the immediate solution is to consider the final election held in connexion with the Citizens' Convention last year as the final election for the Li Fa Yuan, and the successful candidates as well as the reserve members of the final election thus secured as the successful candidates and reserve members of the Li Fa Yuan. As to the single ballot election of the Central Special Electorate and the Combined Electorate of Mongolia, Tibet and Tsinghai, the same shall be held at a date earlier than that originally fixed. The Bureau for the Preparation of the Li Fa Yuan may then be instructed to proceed with the matter quickly. In this manner the spirit of the Constitutional Compact will not be violated, while the procedure prescribed by law will be followed. Thus by a single proceeding the Li Fa Yuan, which is representative of the people, will be established in a short space of time. Such is the sincere desire of the State to forward the progress of constitutional government which is to be put into effect—albeit the circumstances are difficult:—in order to satisfy the longings of the people for a peaceful administration.

While it is recognised that the conversion of the successful candidates of the final election of the Citizens' Convention into successful candidates of the final election of the Li Fa Yuan is only a measure of expediency, the law is in no way violated, as the numbers of the members and the procedure of election are identical with the additional advantage that the progress of constitutional government is hastened. In regard to the making of the constitution, since the same affects the foundation of the nation, the Drafting Committee should be given ample time thoroughly to discuss the same. They should carefully consider what is best and most appropriate for the fundamental organisation of the State, the strengthening of the foundation of the country and the increase of the influence of the nation, and see to it that every step of the process is in accordance with the prescribed programme. The Bureau in charge of the affairs of the Citizens' Convention have proceeded with the election for the Citizens' Convention in accordance with law; and the successful candidates elected as the result of the final election for the Citizens' Convention are to become the successful candidates of the final election for the Li Fa Yuan. Whether this could be done or not, it was our duty to inquire of the acting Li Fa Yuan in accordance with the Constitutional Compact and to request a speedy reply from the same body. This inquiry was accordingly sent to the acting Li Fa Yuan and a reply has been received from the same, stating that a meeting was called and held on the 26th inst., and the House was unanimously of the opinion that, since the procedure for electing the members of the Li Fa Yuan is identical with that for the election of members to the Citizens' Convention and since the people are eager for an efficient administration and the Government—at the beginning of the era of a constitutional government—is desirous of having the Li Fa Yuan established at an early date, the successful candidates of the final election of the Citizens' Convention should be regarded as successful candidates of the final election of the Li Fa Yuan, and the election of the Special Central Electorate and of the Combined Electorate of Mongolia, Tibet and Tsinghai should be abridged to an earlier date for the election of their proportion of members to the Li Fa Yuan. In proceeding in this manner the law will not be violated in the least. A perusal of the organisation law of the Li Fa Yuan shows that its regular session should begin on the 1st day of the 9th month and continue until the end of the year. At this time when the cause of constitutional government is advancing vigorously, the convocation of the Li Fa Yuan should take place at an earlier date than previously fixed so that the Legislature may soon be established and the expectations of the people may be satisfied and the foundation of the nation consolidated.

Besides issuing a separate mandate regarding the convocation of the Li Fa Yuan at a date earlier than that previously fixed, this proclamation is hereby specially issued to the end that the whole country may hear and know.

The session of the Tsan Cheng Yuan in its capacity of Acting National Assembly terminated on February 29, and this really means the termination of its existence as a law making body as its duties will be taken up on May 1 next by the National Assembly.

Progress in connection with the military operations against the republican troops continued to be unimpressive during the latter part of February and early in March. The illness of one of the loyalist leaders, General Ma Chi-tseng, Commander-in-Chief of the forces in Hunan, which terminated fatally, was one cause of delay. The weather was unfavourable to any operations on a large scale and consequently only a little indecisive skirmishing took place.

The pressure of the loyalist troops upon the republicans was steadily continued both in Yunnan and Hunan, and districts that had been occupied by the republicans early in the campaign were recaptured. While the military position continued favourable to the Government in these provinces, some uncertainty was felt in regard to the attitude of Kwangsi, or rather of Lu Yung-ting, the Military Governor. This uncertainty tended to hamper the operations of General Lung Chin-kuang who had led a force of Kwangtung troops into Yunnan with which he captured Poyi or Poyai. It was reported to the Government that Tsen Chun-hsuan, formerly Viceroy of the two Kwang provinces, was in Kwangsi endeavouring to persuade the local troops to revolt, and it was also said that Liang Chi-chao, or his emissaries, were similarly employed. Early in March Lu Yung-ting accepted the post of Pacification Commissioner of Kweichow that had been offered him by the Government, but after leading a force of 3,000 troops from Nanning to Liuchou he declared the province of Kiangsi independent. This was on March 10, but for some time it was not clear whether Lu was acting on his own initiative or had had his hand forced by his subordinate officers. At the moment of writing this point remains obscure.

The secession of a third province at a time when matters were shaping well for the Government in a military sense was undoubtedly serious. It has been generally expected that any significant success by the republicans would result in accessions to their ranks, but when a third province joined them just after their forces had sustained a series of defeats in the field, it became obvious that a sentiment deeper than a desire to be on the winning side was operative.

The Kwangtung troops under General Lung Chin-kuang were placed in an exceedingly dangerous position. Before them were the Yunnanese and behind them the Kwangsi forces. The course that this General will adopt is a matter of speculation, though the suggestion is made in republican quarters that he will be compelled to espouse their cause. As his brother, General Lung Chi-kuang, is Military Governor of Kwangtung it will be realized that the situation is extremely complicated. The Government, however, have professed perfect confidence that General Lung Chi-kuang will remain loyal.

In connection with the elections for the National Assembly, a Mandate was issued on March 14 ordering the single election

of the Central Special Electoral College to be held on April 10, and that for the United Electoral College of Mongolia, Tibet and Chinghai on April 15. The provincial members were elected some time since. The suggestion has been made that when the National Assembly meets in May the question of the form of government will be reconsidered, but this statement has been denied semi-officially.

The Emperor-Elect on March 4 issued a long mandate dwelling on the necessity of unity in the present crisis in the affairs of the country. He urged the people to abandon personal and partizan feeling and to co-operate to preserve the country intact.

On March 6 news of the first significant success of the loyalist troops was published in Peking, the announcement being made that the city of Suifu has been recaptured. The fight for the city actually began on March 1, when the loyal forces under Brigadier-General Feng Yu-hsiang attacked 3,000 republicans who had fortified the hills surrounding Suifu. Some success was gained, and on the following day all the republican positions on the left bank of the Yangtze were captured. The dispatch from General Feng stated that the republicans had sustained heavy losses and were in full flight. The loyalist losses were over a hundred men killed and wounded. A later dispatch stated that on March 3 the victory was followed up and the recapture of Suifu completed. The losses of the republicans were estimated to be over a thousand killed.

Fighting also occurred in Hunan and Yunnan early in March. In the former province over four hundred republicans were killed at Kaotsun, and in Yunnan a loyalist detachment after severe fighting captured the city of Poyai. Though not of decisive importance from a military point of view, these loyalist successes have certainly had considerable political effect. It would be idle to deny that in certain localities, especially in the Yangtze Provinces, there are sympathizers with the republicans who would probably be stirred to action if the latter won any signal success. On the other hand defeat would just as inevitably entail a diminution of sympathy, or at least prevent its translation into practical co-operation. The expulsion of the republicans from Suifu and Nachi therefore, especially as it has been followed up by loyalist successes in Hunan, may be expected to prevent the spread of the rebellion beyond its present bounds. That the Government attached considerable importance to the recapture of Suifu was shown by the issuance of a mandate on March 7 creating General Feng Yu-hsiang a Baron. Another mandate issued the same day appointed the Military Governor of Kwangsi, General Lu Yung-ting, Pacification Commissioner of Kweichow. Later Pacification Commissioners for Yunnan and Hunan were appointed.

A Reuter's Agency telegram from Chengtu, dated March 9, announced that Government troops had been dispatched from Suifu and Luchow towards Kiangmen with the object of cutting off the Yunnanese in Kianganhsien and Nakkihsien from communication with the south. This message also stated that the Kweichow troops had retired from Chikiang, around which city there had been heavy fighting, to positions within their own border.

During the next few days a succession of Government victories was announced. The Yunnanese were defeated at Nanchi and expelled from both banks of the upper Minkiang. In Hunan the city of Mayang was recaptured, the Kweichow troops retreating in disorder.

After it became apparent that the Government forces in Szechuan and Hunan had the upper hand, the Government decided to reconsider the whole situation without prejudice. While it was almost beyond the bounds of possibility that the republicans could achieve success by arms, there was an obvious danger that hostilities might be prolonged for a considerable time, and much distress caused in consequence. There was also the grave danger of intervention by Japan. That country had given many clear manifestations that, if she were accorded a colourable excuse, she would seize the opportunity to land forces to "protect foreign interests." In order to maintain the fiction that she is playing an important part in the world war, Japan is naturally anxious to take any chance of showing that she is performing work that her allies are debarred from attending to themselves. Intervention in China would, therefore, enable her to gain, or at least to claim, credit in this direction, while at the same time advancing her own policy in regard to China.

These considerations finally induced the Government to decide to take such action as would bring the internal strife to an end. A mandate cancelling the monarchy was actually in course of preparation when the news of the secession of Kwangsi was received. This secession naturally complicated matters but despite the chance that "face" would be lost owing to the impression being given that the Government had been forced to cancel the monarchy because of the secession, it was decided to take action, particularly as telegrams had been received from several of the Military Governors, including General Chu Jui of Chekiang and General Feng Kuo-cheng of Kiangsu, recommending that some steps should be taken without delay to improve the situation. A telegram of the first importance was received from General Lung Chi-kuang, Military Governor of Kwangtung, stating that the situation in that province was most serious. A summary of the mandate was communicated to all Provincial Governors and it was formally issued on March 22.

The immediate result of the cancellation of the monarchy will be the return to the Government's service of most of the men who for conscientious reasons have maintained aloofness since the monarchy movement developed. As is well known there is thought to be disgrace in serving two dynasties, and consequently many of the ablest men in China deemed themselves debarred from assisting Yuan Shih-kai after he had been offered and had accepted the Throne. Mr. Hsu Shih-chang, the former State Secretary, promptly resumed office, the mandate of cancellation, in fact, being signed by him.

## Advice to Yuan Shih-kai

Before its declaration of independence, a telegram was despatched from the Province of Kwangsi, asking Yuan Shih-kai to retire from his post. The telegram, which bears over twenty signatures including those of Field Marshal Lu Yung-ting, Mr. Liang Chih-chao, General Chen Ping-kun, recently appointed to act as Chiangchun of Kwangsi upon the departure of Field Marshal Lu for the front as Pacificator of Kueichow, Wang Tsu-tung, Civil Governor of Kuangsi who was before considered the most trusted servant of Yuan, and Taoyins and military commanders, reads as follows:—

Your Excellency Yuan, the former President.

"We regret to say that since the enforcement of the monarchical system, popular wrath has reached boiling point, and the Yun-Kuei have taken you to the task, resulting in the outbreak of hostilities which have continued from winter to spring. To what extent our national danger will grow, we are unable to say. But the source of the evil can be traced to your oppressive policy relentlessly pursued during the past several years causing disaffection and hatred amongst our people; while the demon of slaughter has been let loose, by your selfish plot to steal the country, during several months, courting ridicule and contempt from foreign countries. We find that Article 16 of the Provisional Constitution provides that the President shall be responsible to the people. As Your Excellency's misgovernment and violation of the constitution are witnessed by millions of eyes, on whom could you lay your responsibility for these lamentable consequences? As the Yun Kuei have risen in upholding a righteous cause, they cannot retrace their steps. Should Your Excellency persist in your foolhardy dream, by what stratagem can you save yourself? I, Lu Yung-ting, holding office in a frontier province, deem it my first duty to preserve peace. I, Liang Chih-chao, having travelled through many places, feel much alarmed at the piteous plight of our people. We vividly recollect the event of the Year Hsin-Hai (1911). The former Ching House, having ruled almost 300 years, was nevertheless unable to bear the sacrifices of the people's lives—it preferred to abdicate the Throne. Now, Your Excellency has been doing just the opposite; and wishing to appropriate the country as your private property, you feel no compunction in causing the massacre of thousands of human beings and in hastening the downfall of our nation. Do you feel ashamed of yourself when

compared with the defunct dynasty? Moreover, your end will never be gained, and you will only be laughed at. You deem yourself a wise man. Has ever a wise man acted thus? Lu Yung-ting and others, in view of our friendship and colleagueship for a number of years, cannot bear to see Your Excellency in sacrificing the country, sacrifice yourself in the end. We earnestly tender you our sincerest advice that you resign your office on date as an expression of apology to the world. Then Lu Yung-ting and others will persuade our Yun-Kuei patriots to lay down their arms on the same day. Your Excellency will thus be able to demonstrate your true ambition, while the country will be immediately relieved of the threatened danger. As the situation has become most critical and must be retrieved without a moment's delay, Your Excellency is earnestly requested to give us a reply within 24 hours, in order that we may know what to do. We are waiting your order in painful suspense meanwhile.''

The following is the *Peking Daily News* translation of the mandate cancelling the monarchy issued on March 22.—

Since the inauguration of the Republic, troubles and disturbances have come in rapid succession; and I, a man of little virtue, have been obliged to shoulder the most difficult responsibility. Patriots of this country, who have cherished the fear of imminent dangers, have advocated the restoration of monarchy with the object of averting quarrels and securing permanent peace. Since the time of the Second Revolution our ears have been filled with their arguments: but from time to time I have discouraged their movements. However since last year the circumstances have been greatly changed and I have been unable to suppress their opinion. They have unanimously said that "unless a constitutional monarchy be introduced, the existence of the Chinese nation will never be preserved. If internal quarrels and contentions, similar to those taking place in Mexico and Portugal, should commence in this country, it will meet with the fate of Annam and Burma." Consequently the majority of people have advocated the restoration of monarchy, and these actions have been supported with good reasons. Generals, soldiers, officials and common people have acted with one accord, they lately sent in a large number of telegrams and memorials, earnestly craving that I should change the form of State by using the influence of my present position. I made repeated declarations of my heart, but they were not heeded by the people. Later on the Acting Li Fa Yuan passed a resolution that the problem of the form of State should be decided by the Convention of Citizens' Representatives; when the convention took place the Citizens' Representatives of all provinces and Special Administrative Areas unanimously voted in favour of the Constitutional Monarchy, and elected me to be the Emperor. As the sovereign authority of the Chinese nation is lodged with the whole body of the people of the country, I could not raise any opposition when the question was finally settled by the whole body of Citizens' Representatives. However, my heart could not be at ease if I should ascend the Throne by breaking my oath of inauguration and disregarding principle and faithfulness. I showed my sincerity and modesty by refusing to accept the post of honour. But the said Yuan insisted that the oath of the Chief Executive was based upon the position he held at that time, but now as the condition changed he should follow the will of the people. Hence I could not make any further excuse on account of the grave responsibility forced upon me. However, in order to satisfy temporarily the public desires I proceeded with the preparatory works, and no actual steps were taken. After the outbreak of the trouble in Yunnan and Kweichow, I promulgated a mandate ordering that the preparatory works should be delayed, and that no more petitions requesting the enthronement should be transmitted to me. Then I promulgated another mandate hastening the convocation of the Li Fa Yuan with the hope of ascertaining as soon as possible the real opinion of the people, and devising some means to relieve me of the difficulty.

Indeed I remember that after meeting so many reverses and disasters, I had not the least desire to attend to the affairs of the State; and when I lived in retirement at Huan-shang I was happy because I was kept ignorant of the real situation of the country. When the outbreak of the Revolution of 1911 took place I was obliged to come out from my place of retirement, my services being required by the people of this country. When I was called to manage the critical situation of this country I determined not to know anything but the salvation of the nation. One can observe in the Chinese history of several thousand of years how the descendants of Emperors of every dynasty have met tragic ends; and why should I be ambitious for the highest post of honour of the country? However, the Citizens' Representatives have not had any sympathy on the sincerity of my refusal to accept the Throne; while a certain portion of the people think that I have sought selfish interest. Through misunderstandings the present trouble has arisen. My sincerity has not been sufficient to move the heart of the people, and my understanding has not been able to read the signs of the times. It is the lack of virtue on my part, and therefore I have no right to blame others. My people have now been inflicted with misery and my Generals and troops have now borne hardships. The people have been seized with consternation, and commerce and industry have declined. When I think of them I do feel sorry. I do not hesitate to sacrifice my own opinion in order to adopt that of others.

I hereby declare that I still recognize that the memorials and documents transmitted to me through the Acting Li Fa Yuan in connection with the request for enthronement are inconsistent with the present condition of the country. The Bill passed on the 11th day of the 12th month of last year on the recognition of monarchy is hereby cancelled, and the State Department is hereby instructed to return to the Acting Li Fa Yuan all the petitions urging enthronement from the provinces and special administrative areas, so that they may be returned to the original petitioners to be destroyed. All preparations for the restoration of monarchy are hereby stopped. Thus I hope that by imitating the repentance and remorse of the ancients, the love and grace of Heaven will be received. We will cleanse our hearts and thoughts, so that trouble will be averted and the people will obtain peace and tranquillity.

I believe that those who have advocated the restoration of monarchy are men trying to consolidate the foundation of the nation; but by using wrong means, they have injured the interest of the nation instead of promoting its welfare. On the other hand those who have opposed the restoration have only been expressing their political ideas; and I believe they will not be so obstinate as to bring the nation to the verge of destruction. At this critical juncture it is imperative that all should act according to the dictates of their conscience, abandoning their prejudices, and uniting their energy together in order to bridge over the present difficulty. Thus the sons and descendants of this celestial land will avoid a family quarrel, and then instead of disasters and woes there will be peace and prosperity.

In a word for the sins and crimes of the people in all directions of the country, I am willing to bear them all. Now the Bill which was passed by the Li Fa Yuan, has been cancelled; and should any try to create disturbances in any locality they shall be held responsible by the authorities. I, the President, am responsible for the administration of the whole country, therefore, it is impossible for me to remain inactive awaiting the destruction of the nation without putting forth efforts to effect its salvation. The present condition is indeed deplorable: people everywhere have suffered, laws and principles have not been observed, administration has not been improved, and the services of men of talents and ability have not been secured. When I think of it in the midnight, I would always get up; and if the same state of affairs should continue, this nation will not be able to remain in the world. Hereafter all civil and military officials should do their best to do away with the accumulated corruptions and bad practices and to achieve merits. They should proceed in earnest to perform the tasks assigned to them and to introduce all kinds of administrative reforms. They should not indulge in empty words, and cherish prejudices. I will institute thorough investigations, and my great principle for the administration is that all merits should be rewarded and demerits punished. All Generals, officials, soldiers and common people should therefore understand and appreciate my ideas.

[We are indebted to the *Peking Gazette* for the other translations of documents used in this article.—Ed].

Simultaneously the resignation of Mr. Lu Chang-hsiang of the post of Secretary of State was accepted, Mr. Lu was instructed to confine himself to his duties as Minister of Foreign Affairs, and Mr. Hsu Shih-chang was gazetted Secretary of State.

## SOURCE OF BORNEO TALLOW

Illipe Nuts as the source of Borneo Tallow are discussed in an Imperial Institute bulletin in which it is pointed out that there has been for some time a confusion as to the source of the fat due largely to the variety of native names for the seeds yielding it. Mr. K. Heyne, curator of the Museum for Economic Botany, Buitenzorg, Java, has examined the seeds and kernels of several species yielding Borneo tallow and their fats submitted to chemical examination.

The principal interest in this fat, from the point of view of industry, is that it is especially suitable for the manufacture of edible fats, especially of the fats known as chocolate fats and used for incorporation with cocoa powder in the preparation of chocolate for eating purposes. It is highly desirable that the kernels should be exported as fresh as possible, but nearly all the fats examined had high acid values, through being rancid, owing to the length of time the kernels are kept before being exported.

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## THE CHINESE NATIONAL ASSEMBLY

The decision of the Chinese Government to hasten the assembling of a more or less representative body at Peking to undertake legislative work is undoubtedly a wise step. At this late date, when much of the bitterness that prevailed in 1913 has disappeared, it is neither necessary nor desirable to consider too closely the causes which prevented the National Assembly of that year from accomplishing anything conducive to the advancement of the country. But it is as well to recall that during the elections the menacing tone adopted by the Kuomintang Press inspired little hope of a working compromise being arrived at between members of the party and the supporters of President Yuan Shih-kai. The unfortunate murder of one of the Kuomintang leaders upon the eve of the assembling of Parliament added fuel to the fire. The Kuomintang included many of the brightest and most promising of young Chinese publicists, but the party as a whole lacked balance, and was unable to recognise that the condition of the country and the necessities of the times imperatively demanded the cultivation of a spirit of compromise. Convinced as they were that the immediate application of the principles they professed would at once transform the social and economic life of the country, they were impatient with those who held the belief that reform should only be effected slowly and cautiously. Goodwill, and a mutual desire to understand the point of view of the opponent, would probably have led to the adoption of a course that was neither revolutionary nor reactionary. Unhappily, the spirit of conciliation was not manifested, and the breach deepened daily after the Parliament had met. As a result the business of the country was neglected in order to wage futile partizan battles and when, as an indirect result of the rebellion in the middle of 1913, the Kuomintang members of the National Assembly were unseated and that body's active existence terminated, the loss to the country was more moral than material. That there was a moral loss is undeniable. Inevitably, in spite of the Revolution, there were still many men of standing and influence who were either openly or secretly opposed to reform and innovation, and these were enabled to strengthen their position by representing the failure of young and inexperienced politicians to envisage realities as a failure of constitutional methods. There was also some material loss, as the services of many of the ablest men in the country were lost to the Government, at least temporarily.

In 1914 and 1915 the system of government was republican in name, but there was nothing republican in its character. The people of a republic are, at least in theory, supreme, but in China during these two years the people had no more to do with the Government than they had had under the Manchu dynasty. This is not written in a spirit of condemnation; the fact is simply recorded so that the situation may be clearly understood. It was probably necessary in the conditions that prevailed that the Government should temporarily be autocratic. It was recognised, however, that though the first phases of consolidation might be better effected under autocratic rule, progress was only possible under a constitutional government. Consequently a Constitutional Compact was formulated confirming the right of the people to self-government and a Commission was appointed to frame a permanent Constitution, which was later to be submitted to a National Convention. Arrangements were also made for the convocation of an elected National Assembly as soon as the permanent Constitution was promulgated. If there had been no modification of these arrangements, the National Assembly would have met in September next.

A new situation was created in the latter half of 1915 by the inception and development of the monarchical movement. A record of the progress of this movement has been given in former issues of the FAR EASTERN REVIEW and need not be repeated here. Necessarily the labours of the Constitution Commission were suspended until the verdict of the people on the question of the form of government was given. After that verdict had been recorded, and H.E. Yuan Shih-kai had accepted the throne, the insurrection broke out in Yunnan, the ostensible object of the leaders being to maintain the republic. Although the Government was confident of its ability ultimately to quell

the insurrection, it was obvious, as the scene of operations was remote from the centre of military power and facilities for the transport of a punitive expedition poor, early success could not be hoped for. In the meantime, while the military plans were being developed, the Government very wisely took into consideration means of hastening the establishment of the constitutional regime. Owing to the advice proffered by certain of the Powers at the instance of Japan, the formal enthronement of the Emperor-Elect was postponed, but it was felt that even the anxious solicitude of Japan for the welfare of the country would hardly prompt it to try to prevent the earlier assembling of a Parliament.

By singular good-fortune the Government, having decided that a Parliament in being was necessary, found one to its hand, ready-made, so to speak. It had originally been intended that a National Convention should be elected for the sole purpose of considering the draft Constitution. In order to give full authority and weight to this body, the election law regulating its creation was made practically identical with that for the National Assembly. Most of the members had already been elected when it was decided to hasten the convocation of the National Assembly, and the happy expedient of investing the members of the National Convention with full legislative powers was adopted. A Mandate, that is published elsewhere, gave legal effect to a recommendation by the acting National Assembly that this course should be taken, and it will, therefore, be possible for a legislature to assemble four months in advance of the date originally fixed.

For many reasons it may be anticipated that the new National Assembly will avoid the mistakes of its predecessor. It will be much more conservative in character, the franchise being such that both electors and candidates were men whose age and antecedents practically guaranteed sobriety of thought. While a wide franchise would be more in accordance with the tendencies of the times, in the special conditions that prevail in China it is essential that its legislature should consist of men practical rather than idealistic. A characteristic of youth is impatience with slow progress, and Young China has already shown that it wished to hustle the country along at a speed that left it so breathless that it sullenly determined that the snail-like movement of the past was better for its constitution. In that, of course, it was in error, but obviously a moderate pace will be advisable until the country becomes accustomed to the rarer air of the higher level along which its path lies. The new National Assembly, therefore, if it should prove to lack brilliance will, perhaps, be the better fitted to perform the important preliminary work of consolidation which is essential before real progress can be made.

## CHINA'S MANDATES

If the mere flourishing of the Vermillion pencil could exercise transmuting power we would have miracles in China. Most of the reforms required to convert the country into a thoroughly modern state have at one time or another in past years been glorified in classic style either in Edicts of the old Manchu regime, in Mandates of the Republican regime, or in Mandates of this temporary or otherwise period of *Hung Hsien.* It would seem, however, that the Edict or the Mandate is the catafalque on which the idea is conveyed to its grave, for few seem to survive. The serious, but unsophisticated stranger in the land would probably take the solemn promulgation of apparently earnest Mandates as undoubted evidence of determination on the part of the rulers of China to fall into line in matters of government with the most advanced of the world's Powers. And while it might be doing an injustice to those who laboriously prepare and issue the Mandates to suggest that they were promulgating them with their tongues in their cheeks, the fact remains that once the Mandate is published no more attention is given to the subject either by those who whipped it into form, by those who sped on its way the finished product, or by those officials in the Provinces who are supposed to translate orders from the Capital into deeds. The whole process of Mandate making in the past has been so closely related to the farcical that the gravest difficulties confront the authorities who might wish classical ebullitions to be taken seriously. The provincial officials have by time-honoured recognition of their right to neglect their duties come to regard the Mandate as so much caligraphy designed to ornament Yamen walls, or to contribute to the delectation of the literati who might wish to study up-to-date composition. That a Mandate is made to be put into effect never occurs to them. Their duty, as they conceive it, is done when they hand it to the yamen runner to paste on the board outside the gate. If the general public condescends to come and read the document well and good, if any of them feel moved to give effect to the commands contained therein so much the better—and that, even, is more than Peking has the right to expect! The official seldom stirs out of his yamen, nor has any one the least ground to entertain the thought that he should. To suggest that he should take a Mandate seriously and contrive the means to carry into effect its commands would be an unforgivable impertinence. No provincial official in China would be guilty of so gross a dereliction of official etiquette as to bestir himself early in the morning with the object of accomplishing a man's work before nightfall. The Provincial official has his own notions of what his mission on earth is, and he takes a whole day over cups of the best Hangchow green tea, to contemplate it, the result being by no means the precedence of his own comfort by his country's affairs. One of the most urgent reforms called for, therefore, is a change in the treatment of the Mandate by provincial officials. We have been given to believe by certain evidences that conditions are changing for the better in China. Being optimistic we believe we can see marked improvement in many directions, and certainly we know of many officials and civilians who are earnestly desirous of breaking effectively with the past, which seems to have, unhappily, a strangle hold upon the present. When the day comes that the Mandate can be enforced, or rather that the official in the provinces will regard it as his prime duty to lose sleep until he has taken the measures required to put a given Mandate into effect, then will we believe that there is real hope of China marching on to the greatness her people deserve. It will, however, need more than a Mandate ordering Mandates to be respected to effect this desirable change.

## THE HANKOW RECONSTRUCTION LOAN

The agreement entered into between the Chinese Government and Messrs. Samuel & Co., Limited, on September 19, 1914, for the reconstruction of Hankow was renewed for a further year on February 8, when Messrs. Samuel & Co.'s Peking representative concluded negotiations with that object, by paying over the silver equivalent of £30,000 as an advance. In making the advance the following terms were arranged:

(1). That Samuel & Co., Ltd., have an extended option on the Loan Agreement until Two (2) Years after Peace has been Proclaimed with regard to the War.

(2). Interest on the Advance is to be payable half-yearly through the Bank of China.

(3). In the event of it being found impossible to float the "Hankow Improvement Loan" on or before Two (2) Years after Peace has been Proclaimed, then the Chinese Government will repay the amount of the Silver Advance in full, together with all Interest monies due at the time repayment is made.

(4). During the extended period of the Agreement, (i.e. until two years after peace has been proclaimed), the Chinese Government will not compel Samuel & Co., Ltd. to float the first issue of the Bonds if the conditions of the European markets are unfavourable.

(5). The Chinese Government will purchase outright and Nationalize the existing Electric Light & Waterworks Company's workings and undertakings at Hankow by the means of an Internal Domestic Loan, which is to be specially floated for that purpose. The outlay for the purchasing and nationalizing the said works and undertakings is to be refunded to the Chinese Government at a later date out of the proceeds of the first issue of the "Hankow Improvement Loan" Bonds.

As the Government is not yet prepared to nationalise the Electric Light and Waterworks the Company is endeavoring to arrange for a loan from American financiers to enable them to dispose of present obligations and enlarge their equipments to cope with present increasing demands. If financial arrangements are completed with this object the Government will, when the

time comes for nationalization, refund the capital loaned by the American financiers.

Commenting on the extension of the agreement with Messrs. Samuel and Company the *Peking Daily News* says:—

"The terms agreed upon have the full support and approval of the Chinese Central Government as is evidenced by the fact that the Wai-chiaopu have officially notified the British Minister in Peking, who has been requested to record the details for future reference. The Minister of Finance and the Minister of the Interior, both of whose signatures were appended to the original "Hankow Improvement Loan" Agreement in September, 1914, on behalf of the Chinese Government, have also been notified of the new terms agreed upon.

"Under the original agreement of September 19th, 1914, the existing Hankow Electric Light & Waterworks Company was hypothecated to Samuel & Co., Ltd., as one of the collateral securities for their Loan. The fact that the Chinese Government have now entered into an undertaking with Samuel & Co., Ltd., to purchase and nationalize the Hankow Electric Light & Waterworks Company through the flotation of an Internal Domestic Loan goes to prove the seriousness with which the Central Government view the future importance of the Hankow Improvement Scheme. Once the Internal Domestic Loan has been floated and the purchasing transaction has been completed, the Electric Light & Waterworks will become the sole property of the nation, with the profits derived, which we understand average well over three hundred thousand annually, becoming still another source of income for the country's exchequer. There seems to be no reason why the existing Electric Light & Waterworks should not be under state control, always provided proper management is arranged for, and in arriving at their decision the Chinese Government appear to have agreed to a course of action which calls for nothing but congratulations. Foreign capital is always welcome for the encouragement and development of industry and commerce, but if Chinese capital is available so much to the advantage and credit of the country."

## CHINA'S RAILWAYS IN 1915

From the following tables it is possible to gain an accurate idea of the financial situation at the end of 1915 of the Chinese railways now operating. This is rendered possible owing to the adoption of the unified system of accounting recently introduced by the Ministry of Communications—a system which is perhaps the most complete of any in use in the world. Before the system was elaborated by the special commission appointed for the purpose accounts varied as did the railways and it was never possible to make even an approximately accurate comparison of the working of the various lines. Each line had its own method of accounting, and when it is remembered that some of the lines are British, others Belgian, others French, others German and a few Chinese it may be realised how great a variety of systems were used. This has all been done away with now, and the new unified system is employed on all lines to the distinct advantage of the country and the satisfaction of the public who may wish to make comparisons. The tables given below are the first issued under the new system and the figures given are derived from reports based on headings which permit of no juggling of figures to swell receipts or diminish expenses or in any way to confound the investigator. An interesting development of the introduction of the system is the application by private railway companies for the forms so that they may be adopted, it being recognised that their employment will in the long run diminish the irregularities that have prevailed in the past.

In connexion with the tables given below it must be mentioned that the estimates were prepared in 1914, before the war, which accounts for the estimate of receipts being high and expenses low. It is more gratifying, therefore, that the receipts still show an increase, despite the disabilities caused by the war, particularly as the cost of all kinds of materials rose greatly in price.

*Statement of the approximate totals of revenues and incomes of the Chinese Government Railways during 1915 as compared with the estimates.*

| Lines | Estimated figures | Actual receipts | In excess of the estimate | Less than the estimate |
|---|---|---|---|---|
| Peking-Mukden | $12,672,400.00 | 14,768,000.00 | 2,095,600.00 | |
| Peking-Hankow | 16,681,100.00 | 16,560,000.00 | | 121,100.00 |
| Peking-Kalgan | 2,668,566.00 | 2,721,500.00 | 52,934.00 | |
| Kalgan-Suiyuan | 905,084.00 | 880,940.00 | | 24,144.00 |
| Tientsin-Pukow | 8,063,006.00 | 8,298,000.00 | 234,994.00 | |
| Cheng-tai | 2,416,125.00 | 2,116,549.71 | | 299,575.29 |
| Taokow-Chinghwa | 593,335.00 | 633,000.00 | 39,665.00 | |
| Shanghai-Nanking | 3,484,500.00 | 3,436,800.00 | | 47,700.00 |
| Shanghai-Hangchow-Ningpo | 1,878,000.00 | 2,070,000.00 | 192,000.00 | |
| Canton-Kowloon | 917,380.00 | 874,000.00 | | 43,380.00 |
| Kirin-Changchun | 634,857.00 | 970,912.00 | 336,055.00 | |
| Chuchow-Pingsiang | 726,480.00 | 690,200.00 | | 36,280.00 |
| Canton-Samsui | 530,325.00 | 851,568.00 | 321,243.00 | |
| Kaifeng-Honan | 1,160,502.00 | 1,154,600.00 | | 5,902.00 |
| Changchow-Amoy | 38,030.00 | 41,080.00 | 4,050.00 | |
| Total: | 53,368,699.00 | 56,067,149.71 | 3,276,541.00 | 578,090.29 |
| Balance | | | 2,698,450.71 | |

*Statement of Operating and Interest Charges of Chinese Government Railways for 1915 as compared with the estimates.*

| Lines | Estimated Figures | Actual Expenses | Balance Less than the estimates | In excess of the estimates |
|---|---|---|---|---|
| Peking-Mukden | $6,779,368.00 | 7,735,000.00 | | 955,632.00 |
| Peking-Hankow | 10,252,681.00 | 10,700,000.00 | | 447,319.00 |
| Peking-Kalgan | 2,318,858.50 | 2,052,700.00 | 266,158.50 | |
| Kalgan-Suiyuan | 1,441,022.20 | 999,806.20 | 441,216.00 | |
| Tientsin-Pukow | 9,824,124.00 | 11,051,000.00 | | 1,226,876.00 |
| Chengtai | 2,091,434.00 | 2,021,336.00 | 70,098.00 | |
| Taokow-Chinghwa | 917,816.00 | 882,000.00 | 35,816.00 | |
| Shanghai-Nanking | 3,962,500.00 | 3,928,600.00 | 33,900.00 | |
| Shanghai-Hangchow-Ningpo | 3,006,000.00 | 2,371,000.00 | 635,000.00 | |
| Canton-Kowloon | 1,775,430.00 | 1,739,582.39 | 35,847.61 | |
| Kirin-Changchun | 1,374,534.00 | 1,447,999.00 | | 73,465.00 |
| Chuchow-Pingsiang | 647,638.00 | 764,400.00 | | 116,762.00 |
| Canton-Samsui | 305,416.00 | 579,067.00 | | 273,651.00 |
| Kaifeng-Honan | 1,502,384.00 | 1,442,700.00 | 59,684.00 | 13,742.00 |
| Changchow-Amoy | 188,258.00 | 202,000.00 | | |
| Total: | $46,387,463.70 | 47,917,190.59 | 1,577,720.11 | 3,107,447.00 |
| Balance | | | | $1,529,726.89 |

*Statement of the approximate balances between Receipts and Expenses (including interest and all other charges) of Chinese Government Railways for 1915.*

| Lines | Receipts | Expenses | Balance Profit | Balance Loss |
|---|---|---|---|---|
| Peking-Mukden | $14,768,000.00 | 7,735,000.00 | 7,033,000.00 | |
| Peking-Hankow | 16,560,000.00 | 10,700,000.00 | 5,860,000.00 | |
| Peking-Kalgan | 2,721,500.00 | 2,052,700.00 | 668,800.00 | |
| Kalgan-Suiyuan | 880,940.00 | 999,806.20 | | 118,866.20 |
| Tientsin-Pukow | 8,298,000.00 | 11,051,000.00 | | 2,753,000.00 |
| Chengtai | 2,116,549.71 | 2,021,336.00 | 95,213.71 | |
| Taokow-Chinghwa | 633,000.00 | 882,000.00 | | 249,000.00 |
| Shanghai-Nanking | 3,436,800.00 | 3,928,600.00 | | 491,800.00 |
| Shanghai-Hangchow-Ningpo | 2,070,000.00 | 2,371,000.00 | | 301,000.00 |
| Canton-Kowloon | 874,000.00 | 1,739,582.39 | | 865,582.39 |
| Kirin-Changchun | 970,912.00 | 1,447,999.00 | | 477,087.00 |
| Chuchow-Pingsiang | 690,200.00 | 764,400.00 | | 74,200.00 |
| Canton-Samsui | 851,568.00 | 579,067.00 | 272,501.00 | |
| Kaifeng-Honan | 1,154,600.00 | 1,442,700.00 | | 288,100.00 |
| Changchow-Amoy | 41,080.00 | 202,000.00 | | 160,920.00 |
| Total: | 56,067,149.71 | 47,917,190.59 | 13,929,514.71 | 5,779,555.59 |
| Net Profit | | | $8,149,959.11 | |

So far reports for the individual railways for the year 1915 have not been completed and the only reports available that have been produced in accordance with the regulations for the unification of accounts are for the half year ending June 30, 1915. At that date the Government Railways in operation in China totalled 5,701.47 kilometers, in addition to which there were 241.83 kilometers and 2,399 kilometers or what are described as Concession Railways.

The rolling stock in operation at that period was 627 locomotives, of which 162 were passenger, 330 freight and 140 shunting. There were 823 passenger carriages, 103 being first-class, 214 second-class, and 576 third-class.

Passengers to the number of 13,000,000 were carried during the six months, the bulk of that being third-class, the percentage being 96.54, while the second-class passengers amounted to 2.76% and the first-class 0.7%. The revenue from this source was $11,120,059.

## CHINA AND ROADS

It will be gratifying to all who are interested in the development of China, and particularly to those whose business compels them to traverse the interior, to see that the Government is taking some notice of the efforts that have from time to time been made to have the great thoroughfares of the country improved. Centuries ago China had good roads, roads that

probably rivalled those of any contemporary country, not excepting the famous highways made by the Romans, but during the past century the art of public utility building, like the art of porcelain making, has died a natural death, and present day inhabitants of coast ports or distant inland cities are similarly cursed with the most lamentable apologies for roadways that modern man has had to put up with.

Considering the historic aptitude of the Chinese for solid constructional work there is no excuse for the conditions that now obtain. The Chinese people have a natural talent for engineering work which could easily have been developed for the good of the country by far-sighted officials. The magnificent bridges, the walls of cities, the great conservation works which still stand and defy time in numerous parts of the country are monuments in themselves to the genius of the past and should be constant reminders to all officials of the present period that continuation of the disgraceful policy of neglect which plunged the Manchus into oblivion will bring about the absolute ruination of the country and compel the much-dreaded foreign control or partition to be inaugurated.

That there are officials who fully realise the vital necessity that exists for immediate revision of methods of administration, and for the introduction of reforms making for industrial development is, we are glad to say, a fact, but it must be confessed that they are so far working against painful odds in the shape of a large body of conservative and ignorant adherents to office who contribute practically nothing in the shape of sound assistance to the government of the country. These men constitute the incubus which if not speedily removed will bring about the loss of the independence of China, cause her people to be placed under the tutelage of some foreign power or powers, and destroy the centuries-long record as a national unit which China has managed so far to maintain despite the great world-movements of past decades. The few officials in high places who are alive to the importance of development upon modern lines do when possible take occasion by the hand to advance the interests of China, but more often than not their efforts are nullified by the crassly stupid activities of misguided reactionaries.

That there is a great general improvement over the conditions which obtained five or six years ago, however, is undoubted, and it is to be hoped that the further evidence of realization of one of China's chief woes—a lack of roads—as furnished by a Mandate issued on February 27 will materialize in some forward pol cy being adopted calculated to improve the thoroughfares throughout the country. By properly systematising the work the Government could begin road building at once without recourse to foreign loans, there being sufficient prison labour available to make a great advance upon a road to serve as a model for the various communities who should themselves find the labour to construct sections of other roads within their own particular localities. Co-operation between Government and local officials should enable lengthy roadways to be built, and unless the Mandate referred to above, which is given below, is to be allowed to go the way of hundreds of others we ought before long to be recording a general awakening throughout the country to the importance of modern means of communication. The Mandate is as follows:—

> It is the duty of the Government to facilitate the communications of the inter.or of the country. We have noticed in all foreign countries, that special efforts have been made by authorities to improve public roads. In former days the "official" roads and postal "sect ons" had the idea of national roads; but as the people have only followed the rules fixed in ancient time, no material improvement has been made. As we have been satisfied with the simple and primitive ways, we have been laughed at by men of experience. Since the introduction of steamers and railways, there have been great changes in connection with commun cations, rendering it more important to improve the public roads of the whole country. As the districts under the jurisdiction of the Metropolitan Prefecture, have been fixed as a model for self-Government system, the improvement of public roads should be promoted; and the Governor there is hereby instructed to institute an investigation regard ng the roads which should be repaired. He shall divide all the roads into the "national" and the "hsien" ones; and by introducing improvements he shall set an example for other districts to copy. As to the roads in the villages and hamlets, he shall order the chiefs of the same to improve them according to local circumstances. The chief officials of the provinces and special administrative areas are also instructed to order their respective subordinate officials in the Tao or Hsien districts to proceed to improve the roads accord.ng to local condition. According to the custom of this country bridges and roads of the villages and hamlets are to be cared for by the inhabitants themselves, who have considered them as charity works. The local officials are therefore ordered to encourage them in these good works, and not to force them by influence. Those who have contributed large sums voluntarily and have achieved merits shall be liberally rewarded so that others may be encouraged. The Ministry of Inter.or is hereby instructed to draw up a set of regulations on the improvement of roads for our approval.

# THE HOKKAIDO TIMBER INDUSTRY

## The Wealth of Japan's Forests

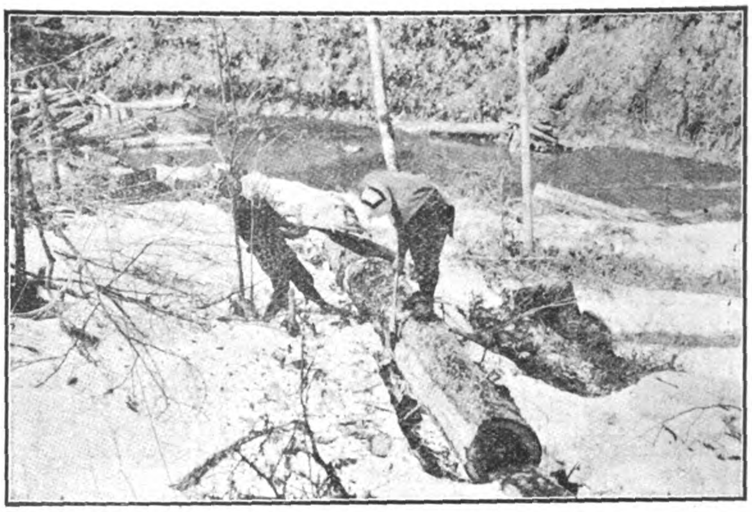
No country has a greater proportion of its total area productive of timber than Japan. With the exception of the Kuriles group and the summits of a few high mountains, because of the fertile soil and the humidity of the climate, there is no part of the whole Empire that is unsuited to the growth of forest trees, and hence the production of timber of practically every quality. These forests found everywhere have such luxuriance of growth that they are strikingly primitive in appearance. To reduce it to figures, the most recent statistics compiled on the economic development of the Empire show that the natural forest area is immense, measuring 19,173,717 cho, lacking just .3 of one percent of being one half the area of the whole country. And these figures do not include Formosa, Korea and Karafuto, nor do they include big stretches from which much valuable timber is marketed, known as *Genya*, or plains, a class of land established at the time of the land tax revision, inaugurated soon after the restoration.

Of all this vast area covered with forests, more than 25 percent, or 4,968,433 cho, is in Hokkaido, where the timber industry has been of much more recent development, but which now is exporting timber, logs and sawn lumber, consisting chiefly of pine and various grades of oak, to the foreign market. The mountain ranges, which cover the entire island with their lateral branches, constitute splendid forest lands, the conifers growing on the slopes, while at the tops and bases the broad-leafed trees predominate.

In 1914, the last year for which statistics are available, Hokkaido exported pine and oak, and a small amount of other Japanese wood, to the value of 6,519,222 Yen. Practically all of the export material was for furniture making and for railway sleepers. Of the entire amount China and Manchuria took approximately one third. America is another big user, purchasing timber to the value of 960,000 Yen in 1914. England, Belgium, Germany, Austria and Egypt are among the other heavy purchasers. The following table gives the returns of exports from Hokkaido for 1913 and 1914:

| Destination. | 1913 Yen | 1914 Yen |
|---|---|---|
| China | 2,196,351.00 | 1,988,636.00 |
| Manchuria | 631,110.00 | 744,443.00 |
| Hongkong | 14,344.00 | 9,512.00 |
| India | 148,259.00 | 62,713.00 |
| British colony | 6,228.00 | 25,035.00 |
| Russia (Asiatic) | 16,457.00 | 72.00 |
| England | 253,834.00 | 296,095.00 |

HOKKAIDO LUMBERMAN'S CAMP



JAPANESE LUMBERMEN SAWING AND BARKING LOG

| | | |
|---|---|---|
| France | 188,142.00 | 185,414.00 |
| Germany | 65,726.00 | 294,554.00 |
| Belgium | 388,294.00 | 757,940.00 |
| Italy | ——— | 9,827.00 |
| Austro-Hungary | 4,584.00 | 2,757.00 |
| Netherlands | 250,165.00 | 100,808.00 |
| Denmark | 85,357.00 | 22,353.00 |
| America | 874,801.00 | 960,306.00 |
| Canada | 54,928.00 | 41,792.00 |
| Austria | 474,530.00 | 494,708.00 |
| Hawaii | 23,912.00 | 15,015.00 |
| Egypt | 535,457.00 | 478,583.00 |
| Other countries | 38,887.00 | 28,647.00 |
| Total | 6,252,396.00 | 6,519,222.00 |

The development of the timber industry in Hokkaido for the export market has been comparatively recent, beginning between ten and fifteen years ago. Since then there has been a steady and rapid expansion of the industry and the establishment of logging camps and saw mills. There are now on the island nearly fifty saw mills, scattered throughout the forest area, many of them large mills with a capital from 100,000 Yen to a quarter of a million Yen. All of the export lumber leaves through the three open ports: Rushiro, Otaru and Mororan. While the complete figures are still unavailable it is estimated the exports for 1914, including square and round logs, sawn lumber and sleepers were, in round numbers, 44 million cubic feet. In 1913 the amount exported was 39,421,774; in 1912 32,011,427, and in 1911, 27,795,692 cubic feet.

Hokkaido's forest resources are distributed as follows: Government forest, those belonging to the Imperial Household, the official district forest areas, the experimental forests for the Imperial University and those owned by public institutions and private individuals. While an official survey shows that these forest areas are productive of approximately fifty varieties of timber, including both those of the temperate and frigid sylvan flora, 67 percent of the availabe timber for logs and sleepers consists of oak and pine. The remaining quantity, available for the same purpose, consists chiefly of the Japanese woods, *Yama*, used for furniture; *Sema*, used for sleepers, and *Katsura*. A glance at the following figures showing the available quantity of timber in 1913 still available for logs and sleepers, in each of the variously controlled districts, shows the immense resources of the forests as they stand at present:

Imperial Household: Pine, 170,792,000 cubic feet; oak, 65,764,000 cubic feet; other kinds, 101,305,000 cubic feet; total, 337,861,000 cubic feet.

Government forests: Pine, 442,771,000 cubic feet; oak, 143,027,000 cubic feet; other kinds, 202,688,000 cubic feet; total, 788,486,000 cubic feet.

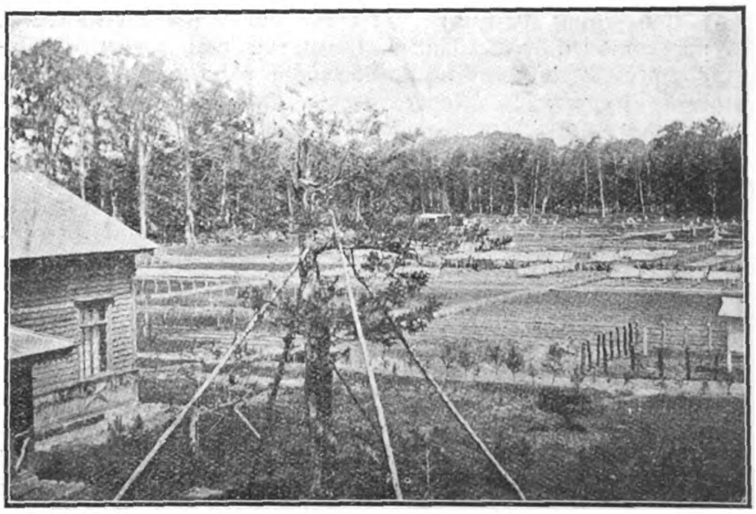
Official districts: Pine, 19,219,000 cubic feet; oak, 8,771,000 cubic feet; other kinds, 11,782,000 cubic feet; total, 39,722,000 cubic feet.

Imperial University experimental forests: Pine, 15,000,000 cubic feet; oak, 3,800,000 cubic feet; other kinds, 12,550,000 cubic feet; total, 31,350,000.

Owned by public institutions and private persons: Pine, 30,000,000 cubic feet; oak, 10,000,000 cubic feet; other kinds, 29,000,000 cubic feet, total, 69,000,000 cubic feet.

Thus it is seen that these resources total 1,266,419,000 cubic feet. The amount of oak totals 231,360,000, the amount of pine 677,780,000 and the other kinds 231,360,000 cubic feet.

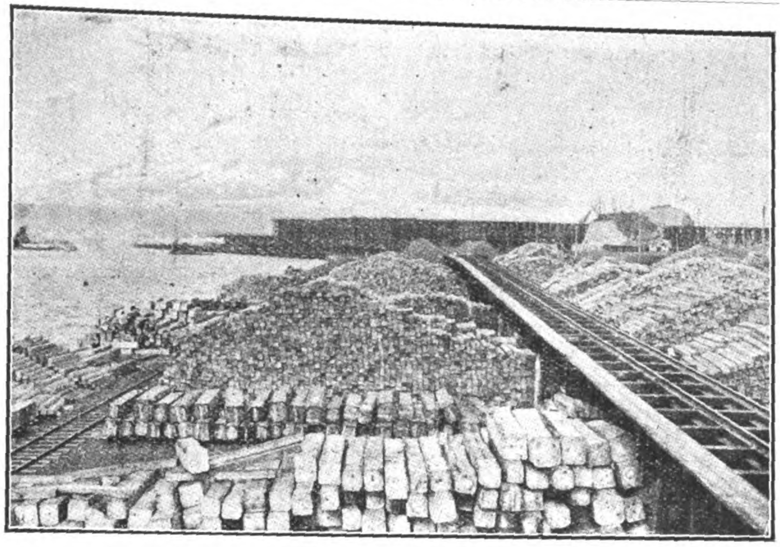
In addition to the owners of forests already mentioned there are some areas owned by temples and shrines, local governments and others. The figures given below shows the distribution of ownership of Hokkaido's entire forest land:



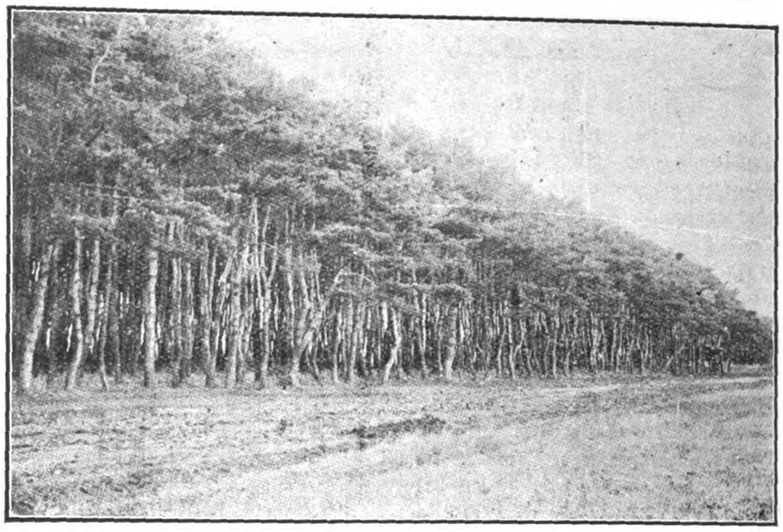
NOHORO FORESTRY EXPERIMENT GROUNDS IN HOKKAIDO

| Owners | Area |
|---|---|
| Forest belonging to the Imperial Household...... | 610,000 cho |
| Government Forest .......................... | 3,674,000 cho |
| Experimental Forest for the Imperial University. | 99,395 cho |
| Forest Owned by Local Office in Hokkaido...... | 188,737 cho |
| Forest Owned by Hokkaido Government...... | 93,836 cho |
| Forest owned by Shrines and Temples .......... | 195 cho |
| Forest owned by Public Bodies ............... | 36,714 cho |
| Private Forest............................... | 85,906 cho |

It is interesting to note the exploitation and treatment that the Government has planned for the Hokkaido timber resources. All of the State Forests there, covering an area of 4,010,214 cho, are subject to the control of the Home Department, and the



Hokkaido Timber Waiting Shipment



Pine Afforestation at Yunokawa, Hokkaido

interests of the nation and public at large are taken into consideration, according to a well-defined high rotation system and the authorities are planting the most important varieties of trees. Beginning in 1908 as a continuation-work of ten years the government began a program, which in brief, includes:

(1) Disposing of such forests as are unfit for State ownership; (2) final survey of all forests retained; (3) perfecting plans for operation of those forests needing immediate attention; (4) planting open or deforested areas and starting nurseries; (5) improving rivers and roads for transport and establishing fire zones; (6) purchasing private forests wherever necessary. For completing this plan in Hokkaido and in Japan proper, an expenditure of 23 million Yen will be necessary. Since general ideas on the preservation of the timber resources have only recently taken hold in Japan there are only a few cases of the management and exploitation of the private forests. In particular the forests belonging to the religious establishments, such as the Shinto and Buddhist temples, are in a most ruinous condition.

Concerning the future of Japan's timber industry, a recent report compiled by the Bank of Japan, says that is very promising, especially in regard to the demand for telegraph poles and railway sleepers. It is only recently that the government has started on its own account in dealing in timber and wood, heretofore disposing of the trees as they stood. The government now has several yards in Hokkaido, but in many instances the inaccessibility of the state forests has proved a handicap to profitable marketing, the report adds.—*Messrs. Sale and Frazar's Greppo*

## FOREIGN TRADE OF THE HOKKAIDO

The commerce of the Hokkaido* has developed rapidly during the past few years. Up to a comparatively late period its foreign trade was credited to Yokohama and Kobe, the bulk of the exports from the Hokkaido being shipped by coasting steamers to Yokohama and Kobe and thence to foreign countries and the imports being entered at the same ports and then reshipped to Hakodate, Otaru, Muroran, and Kushiro.

For some years past trade has been developing on more direct lines; in fact, two steamship companies had made arrangements for a regular monthly service from the Hokkaido to Europe when the war put a stop to this. With the restoration of peace there is no doubt that direct communication with Europe will be established. There is already a fairly frequent service between Hokkaido ports and the Pacific coast of the United States by the steamers of the Robert Dollar Co. and the China Import & Export Lumber Co., of Shanghai, whose steamers call at Hokkaido ports whenever sufficient cargo offers.

Exports from the Hokkaido are constantly increasing. Some 16 years ago a foreign firm in Hakodate tried the experiment of shipping oak logs to the Pacific coast. This business rapidly grew until at the present time about 8,000,000 cubic feet are annually exported to all parts of the world, and in addition to this various other hardwood timbers, as well as railway sleepers, veneers, etc., are shipped. These go to the United States, Chile, Australia, China, India, Egypt, Cape Colony, Spain, France, Great Britain, Holland, Belgium, Italy, and Germany, and the demand far exceeds the supply.

The demand for peas and beans also exceeds the supply, and they are raised in larger quantities every year and exports will soon be over 50,000 tons a year.

The adjacent waters teem with marine life. Herring and sardines are caught in vast numbers and turned into fertilizer and fish oil. The fertilizer is used in Japan, while the fish oil is exported to Europe. It was the practice in the past to ship this oil from the Hokkaido to Yokohama and Kobe, where it was strained, lightcolored vegetable oils added (these being considerably cheaper than fish oil), and then exported. Of late years the direct export of fish oil has rapidly increased, the oil shipped from here not being mixed with vegetable oils and, although darker in color, being much preferred and commanding a higher price in Europe than the oil which has been handled in the southern ports.

The opening of the Panama Canal has given quite an impetus to the coal trade, and over 200,000 tons per annum are now shipped to Honolulu and used at that port for coaling ships that have come via the canal. The local fuel is of excellent quality. Sulphur and manganese are produced and shipped in large quantities; in fact for quite a number of years sulphur was the chief article of export from the Hokkaido.

The imports are principally agricultural and other machinery. The future of the island is agricultural. There is a rich natural soil, and very little artificial fertilizer will be required for some time to come. Manufactories are also springing up. There is an abundance of water power, and already several hydroelectric power plants are in operation, some of them with as much as 20,000 horsepower.

The Hokkaido's principal ports are Hakodate, Otaru, Kushiro, and Muroran. Hakodate has the finest natural harbor in Japan. The harbor in Otaru is protected by two large breakwaters, which make it safe and commodious. Kushiro was formerly little better than an open roadstead, but works now in course of construction will make this harbor one of the best in Japan. Kushiro will, in a few years, be the principal port for the export of cereals, being the natural shipping point for the rich and fertile Tokachi Valley. Muroran has a fine natural harbor.

* Yezo, the most northerly of the large islands of Japan, forms, with its 12 adjacent islands and the Kurile Islands, a division of the Japanese Empire known as the Hokkaido. It is separated from the main island of Japan by the Strait of Tsugaru. Area, including the Kurile Islands, approximately 30,150 square miles.

## THE PORT OF LUNGKOU

Lungkou is about 60 miles due west of Chefoo, on the west coast of the Shantung promontory. It lies about 100 miles southwest of the Japanese port, Dairen. Newchwang and Tientsin are each about 200 miles distant from Lungkou. The port is well sheltered by the Chiriutao Peninsula. It appears there is a narrow channel which admits of steamers of 12 feet draft anchoring within a few hundred yards of the shore; otherwise the port is shallow with a sand bar stretching out for considerable distance. The harbor of Lungkou (Dragon's Mouth) is 7 miles wide at the entrance and has a sand bar which forms a breakwater for 5 miles across the opening. The inner harbor, according to information, has a low-water mark of from 11 to 13 feet, and storms seldom disturb the shipping inside. The business of the port closes and opens each year with Tientsin and Newchwang, because the total business from other points does not at present require the attention of the foreign agent. The same irregular steamer which plies weekly between Chefoo and this port also touches at Tengchowfu, Tiger Head (off Laichowfu), and Yangkiakow. A large coolie traffic is carried on at Lungkow at the opening and closing of Newchwang. The town of Lungkou has a population of about 4,000. It is estimated that within a radius of 5 miles of Lungkou there is a population of 65,000. A level stretch of country behind Lungkou thickly populated and very fertile would make it appear that the port may some day assume considerable importance. The proposed Chefoo-Weihsien Railway would result in connecting Lungkou with both Chefoo and Weihsien, thus with north and central Shantung.

The opening of this port to foreign trade is due to overtures made to the Chinese Government by Japan. The waters about Lungkou abound in good fish, especially the "tai," which commands a splendid market in Japan. There is a large passenger trade between Shantung Province and Manchuria. Between 50,000 and 100,000 Shantung natives migrate to Manchuria each year for the summer crops, returning again in the fall or early winter. The Japanese at Dairen are desirous of controlling this passenger traffic and will be better able to do so through the opening of the port of Lungkou than otherwise. At present the bulk of this traffic goes from Chefoo and Tsingtau. As Dairen is but 120 miles from Lungkou, it will be possible to divert much of this passenger traffic to Lungkou, where Japanese steamers will probably be prepared to take it at a lower rate to Dairen than would be possible from Chefoo or Tsingtau, especially so when the railroad is completed connecting Lungkou with Weihsien.

Likewise will Japanese interests in Dairen be able through the port of Lungkou to share in the general import and export trade of Shantung in a far more extensive way than was possible under former conditions. It appears that Japan, with the opening of the port of Lungkou, is preparing to do everything possible to make the trade of that section of Shantung Province north of the German railway tributary to Dairen. Recently there was organized in Dairen with Japanese capital the Lungkou Bank, capitalized 100,000 yen ($49,800) to develop trade between Dairen and Lungkou. Japanese hucksters are to be seen going about the interior of the northern section of Shantung drumming up trade.

There is no feeling among the foreign merchants of Chefoo that the opening of Lungkou will greatly affect the trade of the port. It is not anticipated that any foreign interests other than the Japanese will avail themselves of the port. The construction of the proposed Chefoo-Weihsien Railway, along with the completion of the Chefoo breakwater, should result in making Chefoo an outlet for much of North China—that is, provided arrangements can be effected whereby this railway may be connected with the Tientsin-Pukow line. It is not to be expected that the Chinese Government will for many years at least undertake extensive harbor improvements at Lungkou. Without extensive harbor improvements Lungkou can not accommodate more than two or three vessels of 12 feet draft at one time at anything like a reasonable distance from the shore, so shipping men here testify. The opening of the port will materially assist Japanese interests at Dairen and help Japan to contest with Germany trade supremacy in northern Shantung.

## EXPORT TRADE OF HONGKONG

In exports in general from Hongkong there has been some slackness in the demand for articles of luxury or ordinary use during the first 9 months of 1915. Shipments of tin to Great Britain, for example, increased from 2,444 slabs during 1914 to 26,476 slabs in the 1915 period; shipments to the continent of Europe decreased only from 20,392 to 17,843 slabs, while shipments to the United States and Canada increased from 22,704 to 46,127 slabs. The total shipments increased from 45,540 slabs in the 1914 period to 90,446 slabs for the 1915 period. These slabs weigh 112 pounds each.

Shipments of matting to Great Britain during the nine months increased from 24,823 to 40,994 rolls, those to continental Europe decreased from 80,176 to 14,771 rolls, and those to the United States and Canada decreased from 90,104 to 56,902 rolls. The total shipments decreased from 195,103 rolls for the 1914 period to 112,667 rolls for the 1915 period.

Exports of preserves, mostly ginger, to Great Britain decreased from 30,534 cases in the first nine months of 1914 to 26,298 cases in 1915; those to continental Europe from 4,741 to 763 cases; and those to the United States and Canada from 3,905 to 1,543 cases. The total exports decreased from 39,180 to 28,604 cases.

Shipments of silk piece goods to Great Britain amounted to 180 cases as compared with 152 cases for the first nine months of 1914; shipments to continental Europe decreased from 234 to 140 cases, while shipments to the United States and Canada decreased from 604 to 260 cases. Exports of waste silk to Great Britain amounted to 8,191 bales compared with 7,630 bales in 1914; those to continental Europe fell from 9,104 to 1,212 bales, and those to the United States and Canada increased from 5,163 to 13,482 bales. The total exports decreased from 22,458 bales for the 1914 period to 22,324 bales for the 1915 period.

Exports of cassia to Great Britain increased from 2,335 to 12,800 cases; those to continental Europe decreased from 59,976 to 14,310 cases, and shipments to the United States and Canada increased from 33,114 to 44,957 cases. The total exports decreased from 95,425 to 72,067 cases.

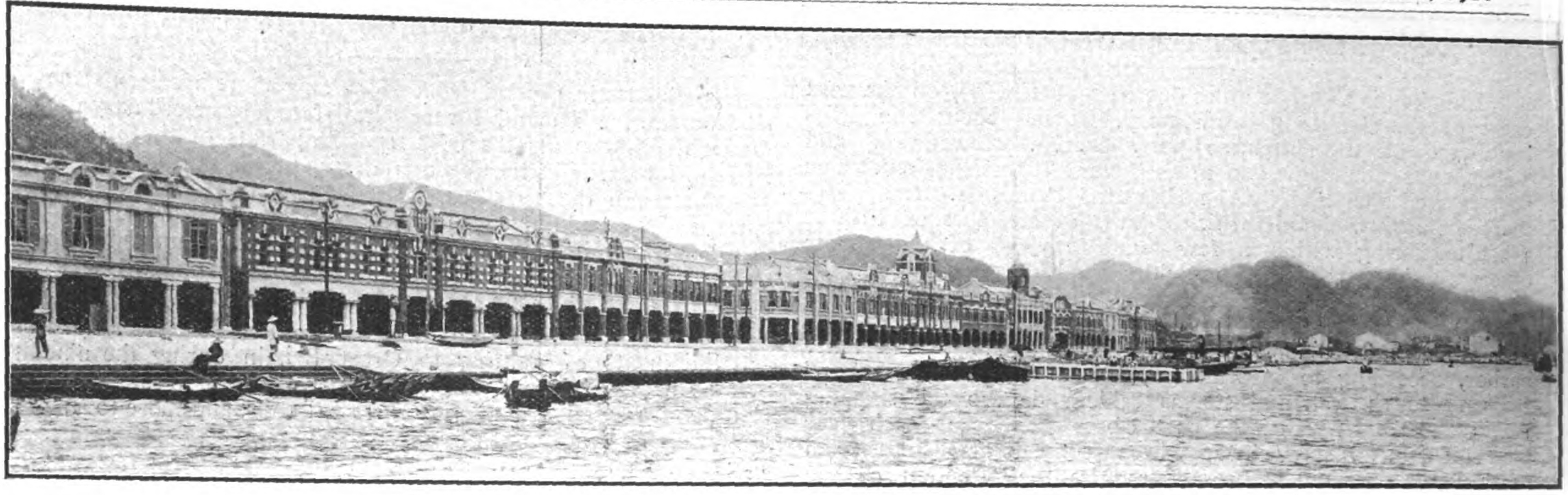
There were increased shipments generally of soy, essential oils, bristles, gunny bags, and rattan and rattan ware, particularly to the United States. There were decreases in exports of canes, chinaware, human hair, feathers, hemp, firecrackers, tea, nut oil, and most miscellaneous Chinese produce.

## WORLD'S COTTON SHORTAGE

The total area and yield of cotton reported from India in 1915 shows a falling off of 27 per cent from the 1914 crop according to the final estimate issued by the Directorate of Statistics on March 3. The total area reported is 17,967,000 acres or 6,628,000 acres less than last year. The total estimated yield is 3,819,000 bales of 400 pounds each while the 1914 yield was 5,209,000 bales. According to the International Institute of Agriculture in a report issued at Rome last month, the United States also will have a decreased yield, which may act in sympathy with the shortage in India and Egypt, to bring about a large increase in prices.

The yield in the United States will be some 10,640,000 bales of 500 pounds each as against 16,080,000 bales in 1914, a decrease of 5,440,000 bales. That of Egypt is 1,200,000 bales against 1,700,000 last year. Reducing the bale yields to pounds it will be found that the total output of cotton from the three countries in question will be 3,486 millions of pounds less than in 1914.

Accurate figures on the Chinese cotton crop are unobtainable, while those for Russia are not yet at hand although the prospects for the Russian crop are said to be good. The Russian acreage and yield also are believed to have suffered a huge shrinkage.



THE BUND AT KEELUNG

# TAIWAN (FORMOSA) AND ITS EXPOSITION

On April 10, the Formosan Government will open an exposition to which it has invited the world and by which it proposes to show to the world the advances that have been made in Formosa since the Japanese took over the Island at the close of the Sino-Japanese war in 1895, this being ceded to her in lieu of Liaotung Peninsula, which spoil of war she was prevented from taking by the powers led by Russia, but later took it herself.

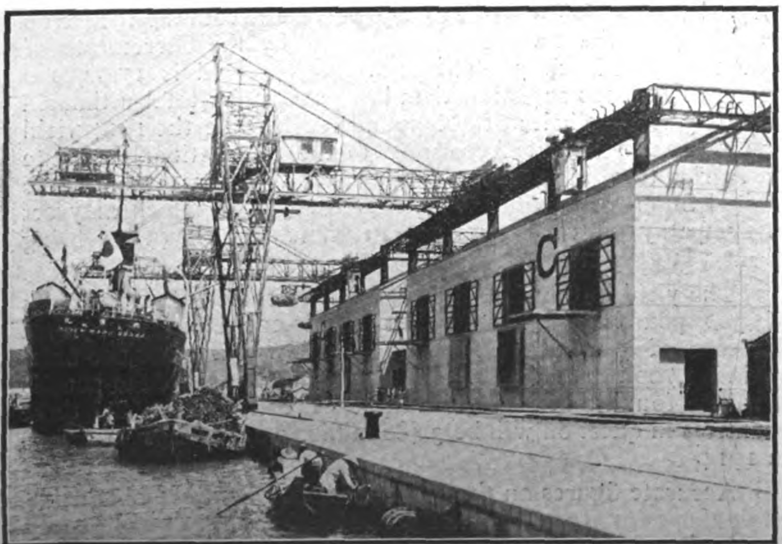
The reports of Formosa, or Taiwan as it is called by the Japanese, who have reverted to the ancient Chinese name, are issued for the most part in Japanese so that the outside world has had little opportunity to judge of the progress that has been made, and those who visit the exposition to view it with an understanding eye, will perceive at once the vast gulf that has been created between the Formosa of 1895 and the new Taiwan,—a hive of industry in which the slothful native has been compelled to mend his ways and conform to the Japanese idea of efficiency.

Taiwan's exposition will also be illuminating to those visitors from the United States, who have been of the opinion that even were the United States to withdraw from the Philippines, Japan would not care to occupy them since the Philippines have a warm climate and are unsuited to the Japanese, forgetting that the climate of Taiwan for the most part is identical with that of the Islands now enjoying the protection of the American flag, and which lie only a few degrees south of Taiwan.

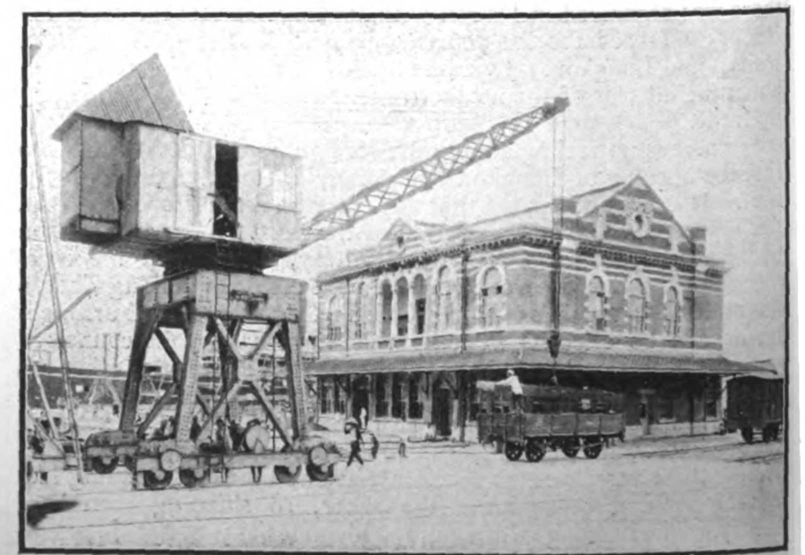
Japan has done her work thoroughly in Taiwan and has not been content to sit quietly as a collector of revenue at its ports, but at great expense both in money and men, has succeeded in bringing the Island to a productiveness that will seem marvellous when viewed by the Filipino or even by the American Administrators of the Philippines, some of whom we learn, will visit the Taiwan exposition. The following summary of the improvements inaugurated and carried through by the Japanese, therefore, should be read by Americans and Filipinos alike, with an eye to contrasts and comparisons, since the experience of the Japanese in Taiwan is similar in many respects to that of the Philippines.

As to the effect on the population of the relative systems of civilization and the methods of introducing them, the reader familiar with the work of the United States and the Philippines must draw his own conclusions, but the fact that upwards of five hundred Formosans have been executed for conspiracy within the past year, might well give the Filipino reason to pause and reflect as to whether he has been so harshly treated under American administration and whether he is really ready for the United States to withdraw, giving him a chance at independence, which might end in anarchy and subsequent Japanese occupation of the Islands.

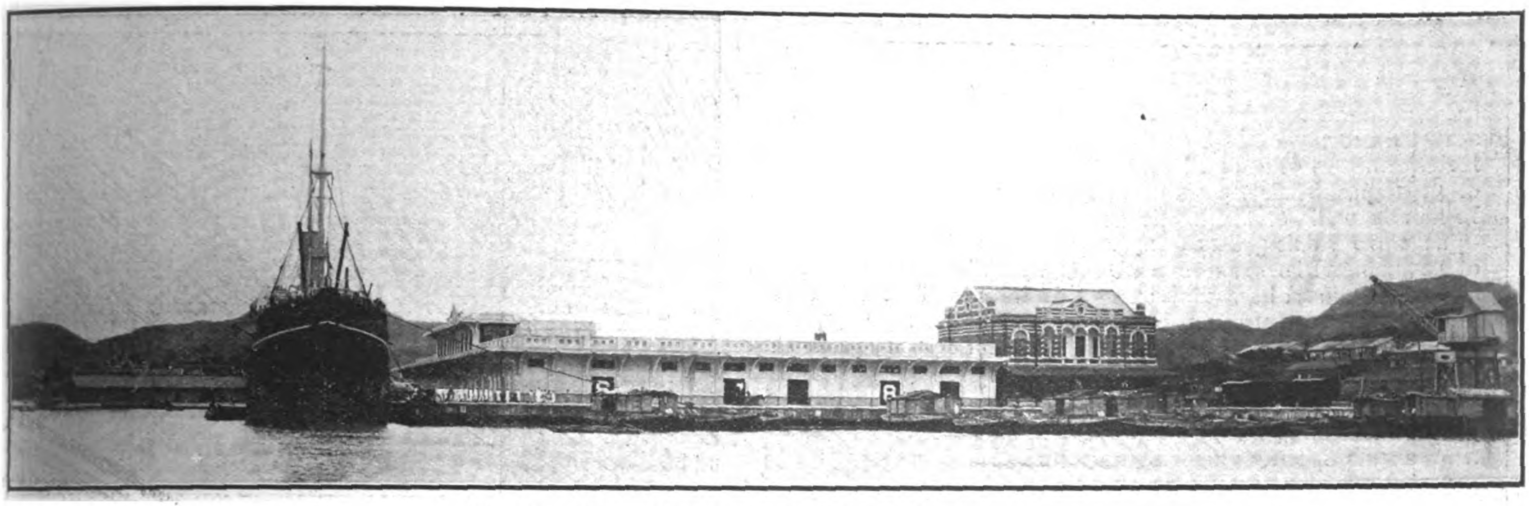
The purpose of this article, however, is not to call attention to possibilities, but to present actual facts and conditions as they are in Taiwan to-day after twenty years of Japanese occupation, and it must be said that the difficulties met by Japan in this island,



REMOVING CARGO AT THE TAKAO RIVER



TEN TON ELECTRIC CRANE LOADING RAILWAY CARS



THE FIRST MODEL WAREHOUSE BUILDING AT KEELUNG

the greater part of whose area is mountain and forest, have been much greater than those met by the Americans in the Philippines, barring the years of the Philippine Insurrection, since even to-day the Japanese are not in complete occupation of Taiwan, but are compelled to wage a systematic and increasing warfare against the wild tribes of the mountain heights. The following facts and figures regarding Taiwan and its people have been translated from Japanese reports regarding the progress of the Island:

### Orography of Taiwan

Taiwan is the general name for the main island of Taiwan, the Hoko-to group (the Pescadores) and the adjacent islands. It is situated between 21° 45′ and 25° 38′ N. Latitude and between 120° 2′ and 122° 6′ E. Longitude. It has a circumference of 398 ri (1 ri = 2½ miles), and an area of 2,332 sq. ri, being nearly equal to the island of Kyushu. The main island is oblong, stretching from north to south, with mountain ranges extending throughout its length. These mountains constitute a watershed, sending short rivers to the east and the west. These rivers have rapid currents and wide beds, and as they are fed by numerous tributaries, they afford great facilities for irrigation. The soil is rich, bearing annually two crops of rice. Of the mountains several are ov.r 10,000 ft. high, such, for instance, as Niitaka Yama, Gundai San, Sylvia San, Tandai San, Zensan, and Kwanzan. Among these the Niitaka is the highest, being 13,020 ft. above sea level. On the plains are found wide stretches of rich cultivated fields, while the mountains are covered with primeval forests, shielding natural resources of great value.

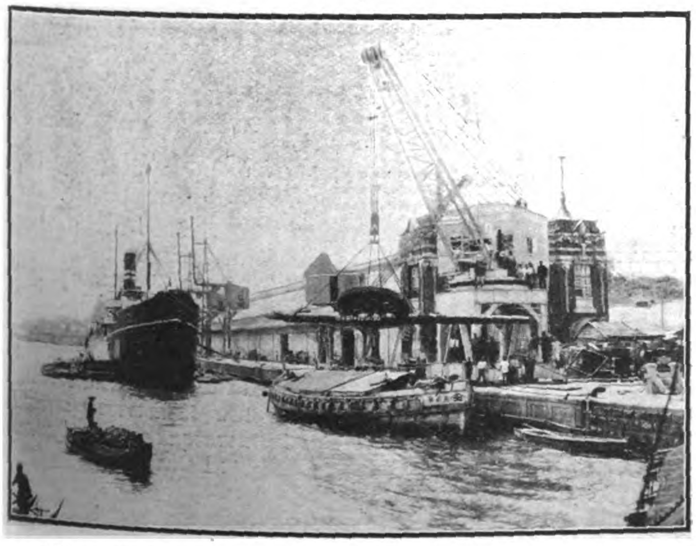
On January 1, 1914, the taxable lands amounted to 661,309 ko (Ko = 2½ acres), yielding taxes of 3,083,118 yen, non-taxable lands to 137,511 ko, uncultivated lands exempted from taxation to 92,161 ko, and newly reclaimed lands exempted from taxation to 7,484 ko.

### Irrigation, Reservoirs and Canals

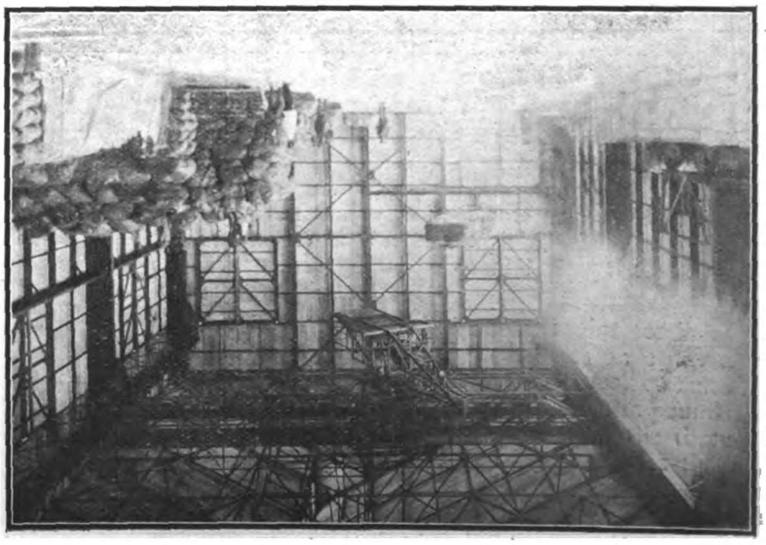
Taiwan possesses a highly developed system of irrigation, the oldest reservoirs and canals dating back two hundred years. Due to them the production of rice in Taiwan amounts annually to as much as four million koku of unhulled rice. The work of irrigation formerly was left to the private enterprise of individual farmers. To secure further extension and completion of the system the Government in 1901 assumed supervision over the management of irrigation works intimately connected with the interests of the public in general, and in 1914 there were 180 of them, irrigating a cultivated area of 239,082 ko from which the revenue is Y1,181,103. The Government in 1909 adopted a plan of government irrigation works, involving the disbursement of 20,000,000 yen spread over thirteen successive years, in which fourteen irrigation works are being constructed, to irrigate 118,000 ko of lands. The water power at the upper portion of the canals will be utilized for generating electricity to be conducted to important cities and towns of the island for lighting as well as for supplying power. Shishihto, Kori and three other places are included in the scheme whereby streams will be utilized for power besides serving the primary object of irrigation. When the scheme is fully completed it is expected that 10,750 H. P. of electricity will be generated.

### Forests and Wild Lands

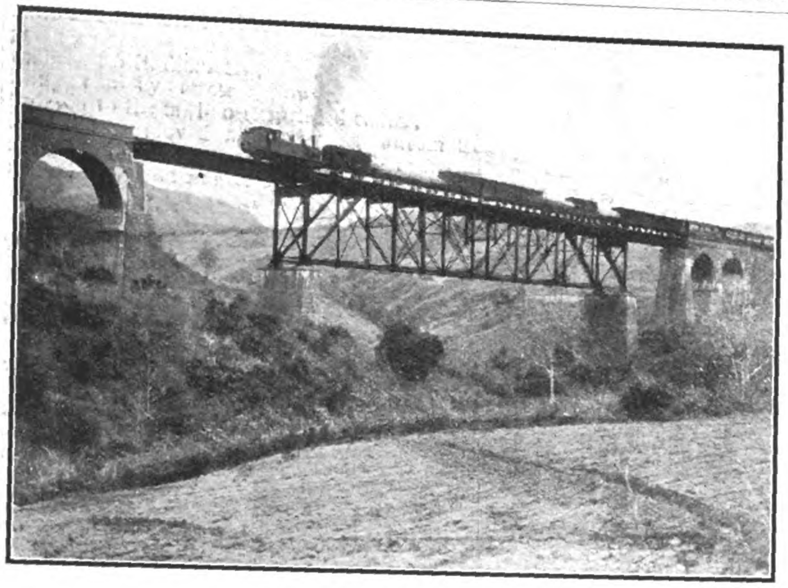
Taiwan is rich in forests, but no accurate statistics of the area covered by forests and wild lands on their borders are obtainable as yet, although a fairly reliable estimate puts the



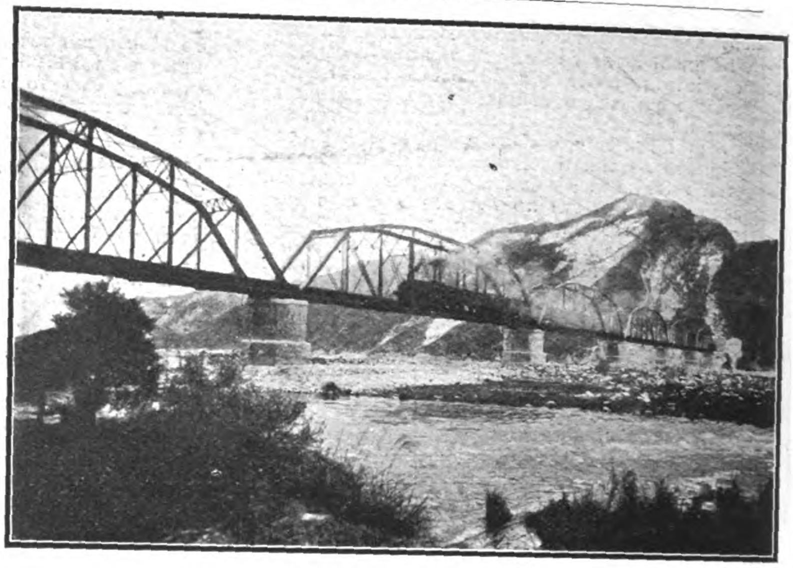
THIRTY TON ELECTRIC CRANE BEING TESTED TO FULL CAPACITY



GOVERNMENTAL PADDY GRANARY ON THE TAKAO RIVER



Yui Sung Peng Bridge

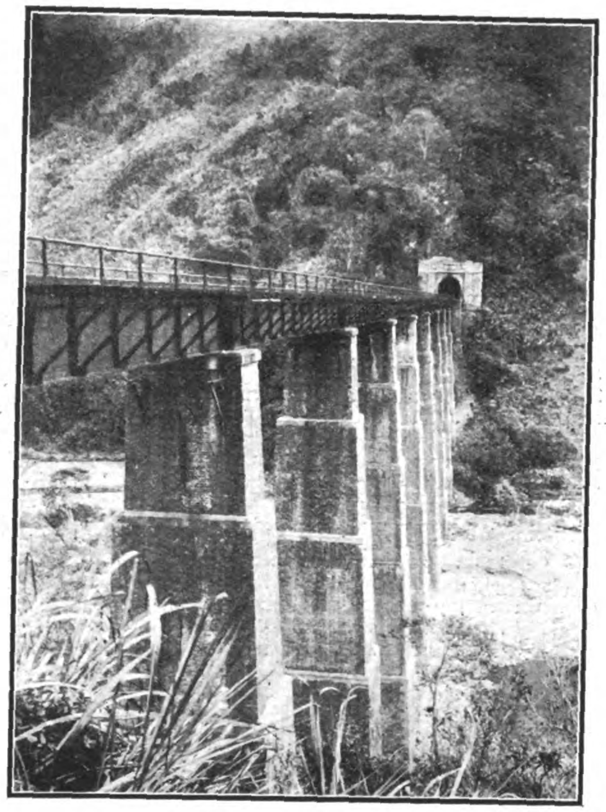


Ta Kak Chi Bridge

figures at 2,900,000 ko covering forest, wild lands and river beds traversing them. The forests of Taiwan comprise vegetations belonging to tropical, sub-tropical, temperate and even to semi-arctic climates. The forests in the civilised parts of the island under Chinese rule had been to a large extent cleared of trees, partly for agricultural purposes and partly from indiscriminate felling for timber and fuel. Of late years, however, the work of reforestation has been encouraged. The utilization of forests in Taiwan is still in a state of infancy. In the past the only use made of private owned forests has been the customary cutting of trees for fuel and timber for repair work. As for the official exploitation of forests, the camphor industry is the only enterprise worth mentioning.

The lease and sale of forests and wild lands is carried out under the Regulations for the Provisional Sale of Forests and Wild Lands, the total area disposed of thus up to the close of 1915 amounting to 55,000 ko. The total area of forest and wild lands either sold or transferred from the beginning of Japanese rule up to the end of 1915 amounted to about 126,800 ko.

The famous Arisan forests, which are being exploited by the Government of Taiwan, are situated within the savage land limits, and comprise a total area of 11,000 ko, containing timber estimated at 18,300,000 shaku-jima (Shaku-jima=1 cubic foot). These forests are found at altitudes ranging between 2,800 ft. and 8,700 ft. above sea level, and are reached by a forestry railway of 41



Na Zeu Chuen Bridge

miles. The exploitation of these forests originally started as a private undertaking, was transferred to the Government through purchase in 1910.

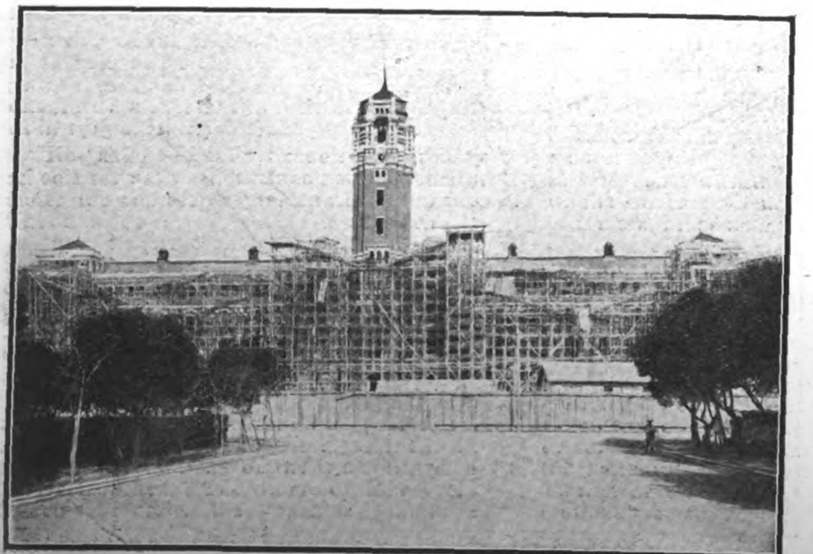
The forestry railway extends from Kagi Station to Nimanpei, Arisan. It is a mountain line, going up as high as 6,600 ft. above sea level, with a gauge of 2 ft. 6 in. and a greatest gradient of 1/20. The work of construction of the first section between Kagi and Jujiro, a distance of 34 miles, was commenced early in July, 1910.

### Timber Felling

These primeval forests contain many old trees which should be felled as soon as possible, and the Government has adopted the plan of entirely renovating the Arisan forests in thirty-five years, by felling certain portions each year and reforesting them afterward. According to this plan the average felling each year will amount to 350.000 shaku-jima of timber.

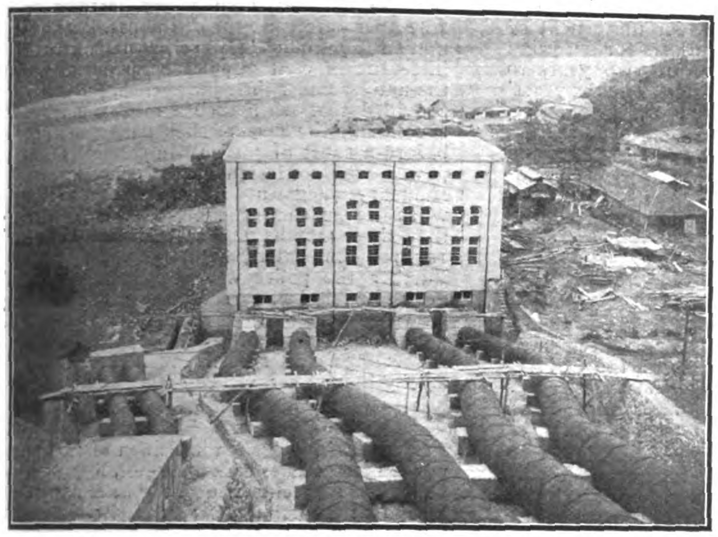
The timber is brought to a convenient spot on suspended cables. From Nimanpei, the terminus of Kagi-Nimanpei Forestry Railway, a railway is being extended at the rate of two miles a year, to accord with the progress of felling trees.

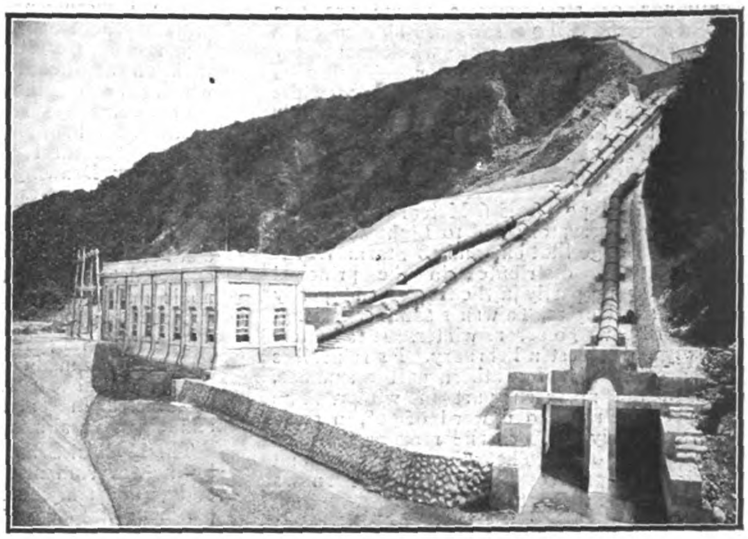
A saw mill has been built at the Kagi terminus of the forest railway using the latest improvements in machinery. In the choice of machinery and in arranging the mill yard, the object kept in view was the economy of labor in the handling of timber. This saw mill, running at full capacity, turns out annually 200,000 shaku-jima of prepared lumber. The

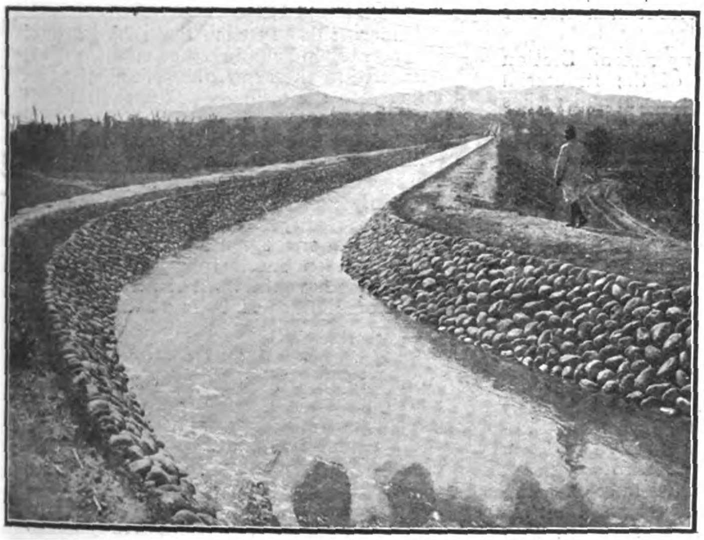


The New Court of the Governor General

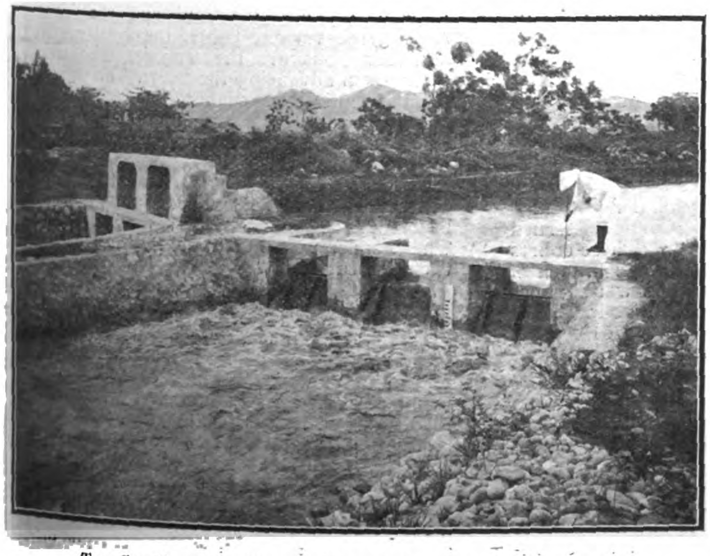
The Taihoko Temple

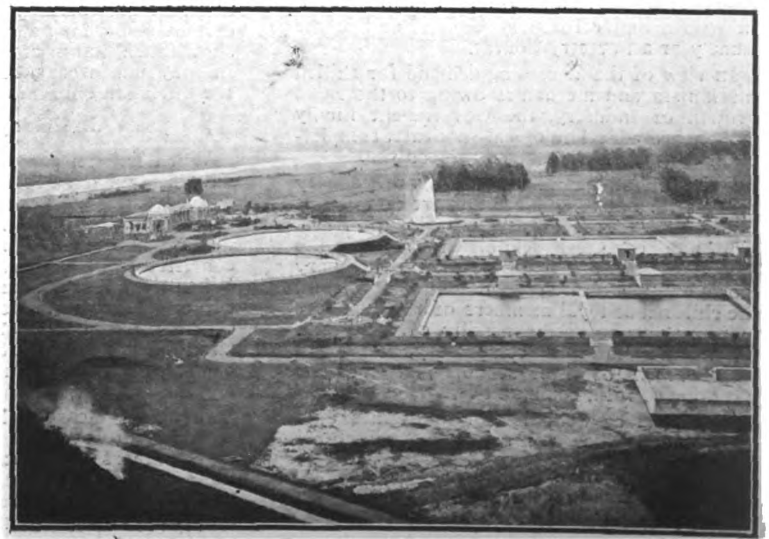

Electric Light Works under construction at Loh-Kwe Li


Electric Light Works at Ieu Li Zen


Roadway Along Irrigation Canal

The Ieu Li Zen Dam and Sluice


The Sze Taz Den (Lion's Head) Dam and its Sluice


The Taihoku Water-Works

buildings of steel-concrete frame are fire proof and the two big saws are able to cut a timber of 6 ft. diameter; the whole machinery being run by electric power. Timber is brought to the mill on suspended cables, while inside it is moved about by an automatic apparatus. Sawdust and clapboards are used as fuel for producing electricity.

### Climate of Taiwan

The island possesses 6 Meteorological Stations, 1 Observatory and 10 Light-houses, 71 Rainfall Gauge Stations and 18 Storm Warning Stations, distributed in the principal centres. Lying partly in the tropics and partly in the sub-tropics, Taiwan's summer is long, while it knows no severe winter. It is hottest in July and coldest in February. Its rainfall is the greatest in the southern part in summer, and in the northern part in winter. The temperature rises to upward of 90°, in some years as early as April and remains there as late as October. The winter is mild and seldom brings frost, while it never snows except on the highest mountains.

### Education of Formosans

The first attempt at introducing modern education was made in May, 1895, when the Educational Office was opened in the newly established Government of Taiwan. But Taiwan was at the time not yet wholly pacified, and in the midst of military activities no permanent school could be established. The members of the Educational Office, however, gathered together a few native children and taught them the Japanese language. It was an experiment, but repaid the labor by giving the teachers much needed experience. In September a class of 21 native Formosans was formed and proved a success. But on New Year's day an insurrection broke out, the city of Taihoku was surrounded by insurgents, and in the affray some of the teachers were killed.

In May, 1896, the National Language School was established at Taihoku, and similar but simpler schools were opened in important towns. In July, 1898, Elementary Schools like those in Japan proper were established for the benefit of Japanese children. In April, 1899, normal schools were established for training native teachers, but were abolished later, it being regarded more convenient to have native teachers attend the National Language School. In May, 1907, a Middle School was established at Taihoku, and as its annex a High School for Girls (these replacing the boys' and girls' middle grade departments at the Japanese Language School).

Besides these attempts at education of a general nature, industrial and other special schools have been established. At Taihoku there was established in 1898 a School for Training Policemen and Prison Officers, in 1899 a Medical School, in 1900 an agricultural course at the Agricultural Experiment Station, in 1908 a Sugar Industry Course, and in the same year a Forestry Course.

In view of the increasing demand for skilled machinists and mechanics owing to the rapid growth of industry, the Government finally established a Technological Institute, completed in 1913 at an expense of 150,000 yen.

"Ko-gakko"—Public Schools are primary schools for native children and are established under the control of prefectural authorities. The aim of these schools is to teach the Japanese language and give all the ordinary moral and mental training necessary for fitting the children as loyal members of the Japanese nation. The course is usually of six years. Attendance is not compulsory, and the establishment of these schools is left to the initiative of local communities.

The Primary Schools for aborigines also are under the control of prefectural authorities. The teaching is regulated to fit the special conditions of the tribe in which it is established. The course of four years contains Morals, the Japanese Language and Arithmetic, sometimes Agriculture, Manual Training or Singing being taught in addition.

The Government General maintains one middle school at Taihoku, for the benefit of Japanese boys. The course lasts for six years with an additional course of two years to which graduates are admitted. The six years' course comprises National Morals, Japanese, Chinese, English, History, Geography, Mathematics, Natural History, Physics and Chemistry, Drawing, Singing, Practical Training and Gymnastics. In the higher two years' course are found English, Law, Economics and an additional foreign language. A distinctive feature is dormitory life, which is expected to inspire the boys with ideals of noble personality through training in etiquette and social life.

The Training Institute for Policemen is under the immediate control of the Government General of Taiwan. The school was established in July, 1898, and sends forth annually several hundred graduates.

The Medical School was established in 1899 by the Government General for native doctors and public surgeons. The Agricultural Experiment Station is under direct control of the Government General, and carries on experiments and researches for the improvement of agriculture; trains pupils in agriculture, forestry and veterinary practice; distributes seedlings, silkworm eggs, new breeds of domestic animals, and fowls; analyzes the composition of soil, fertilizers, agricultural products, etc.; and in general gives guidance and instruction by public lectures in matters of agriculture.

The Sugar Industry Experiment Station also is under the control of the Industrial Bureau of the Government General and makes experiments and researches in all matters concerning the sugar industry, at the same time giving a course which was opened first in 1905.

There are eight daily papers and thirty-one periodicals issued in Taiwan, their number constantly increasing.

### Religious Institutions

The religious conditions of the Island must be said to be somewhat chaotic; the religions introduced from outside, Roman Catholic and Protestant Christianity as well as Shintoism and Japanese Buddhism, being found side by side with the religions originally existing, Confucianism, Taoism and Buddhism. Christian Missionary activities began long before Taiwan passed into Japanese possession, the Roman Catholic mission being in the hands of Spanish priests and the Protestant under the missionaries of the Presbyterian Church of Great Britain. These missions are engaged also in the work of education and charity, and in education, etc., meet with considerable success. Shintoism, Japanese Buddhism and Christianity are being propagated with much zeal but as yet with little success. The cult of the natives seems to consist in worshipping a curious mixture of deities. There is no question that the natives show much zeal in attendance at their temples. In 1915 there were 9 Shinto, 60 Buddhist and 192 Christian churches or preaching halls.

### Judiciary System

When Taiwan passed into Japanese possession in May, 1895, law courts were established in accordance with the provisional regulations of the Governor-General in Council, issued under a military administration. These courts consisted of one Central Court with branches. When the military administration was abolished, civil administration was introduced by establishing Local Courts, Courts of Appeal and the Supreme Court. In 1898 the Supreme Court was abolished, making the trial at the Appeal Court final.

In all civil cases, the Japanese Civil and Commercial Codes are applied where Japanese or foreigners (Europeans) are litigants while the judgments in cases in which the natives of Taiwan or Chinese are concerned, are based on the old customs of the Island. The natives and Chinese, however, come under the operation of the Criminal Code. In actions concerning real estate the judgment is based on the old customs, even where Japanese or foreigners are concerned. In 1904, local administrative officials were given power to intervene in civil disputes occurring among the natives under their jurisdiction, and it was provided that when such a mediation prove successful, the dispute shall not be brought before a court of justice. In criminal cases, power was conferred on the police to pass summary judgment or immediate decision when the punishment involved was no heavier than three months imprisonment or a fine of 100 yen thus saving both time and expense. Further the police were empowered, when deemed advisable, to substitute a fine for an imprisonment of three months or less, and flogging for a fine of 100 yen or less. These innovations meet special conditions existing among the natives.

### Distribution of Police

The first introduction in Taiwan of modern police system dates back to August, 1895, when 70 police sergeants and 700 policemen were landed at Taihoku and sent to places of importance in the interior. In April, 1896, a police force similar to that in Japan was organized and increased to 230 police sergeants and 1,387 policemen. The police force thus greatly strengthened in number was found still inadequate to preserve peace; and in order to give better protection to peaceful inhabitants what was called a three-fold policing system was adopted in 1898.

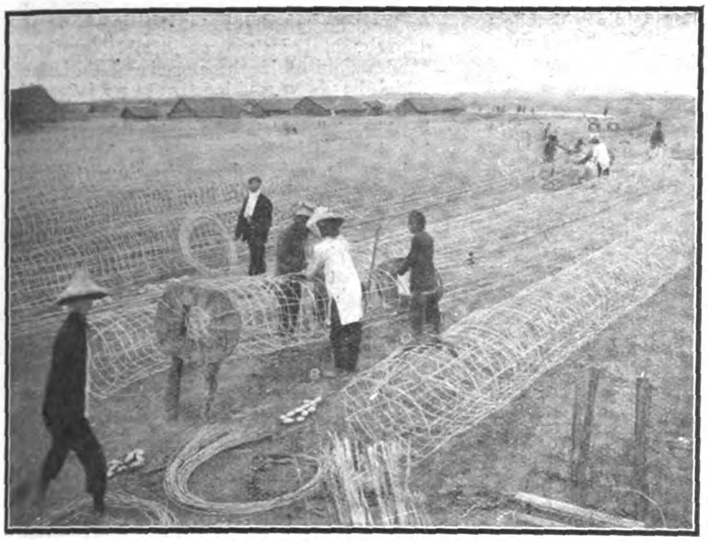
Under this system the subjugation of insurgents hiding in the mountains was entrusted to the army, the policing of settled villages to the ordinary police, and the lands between these two guard lines were placed under the joint care of the gendarmerie, and police. For some years natives have been employed as assistants to the police with markedly good results. It is largely due to this perfected system of police administration that operations against insurgent uprisings have been so successfully carried out. The police also have the work of keeping track of the households and movements of the people.

### Aborigine Affairs

In 1896 all affairs connected with aborigines and aboriginal regions were placed in charge of the Industry Department of the Civil Administration Board; and there were established 11 stations for the domestication of the aborigines. After various changes the Aborigine Affairs Regulations were issued establishing Districts presided over by a Police Inspector.

The aborigines, divided into many tribes, occupy more than one half of the area of Taiwan, their total population being estimated at about 120,000. There are nine main groups of tribes:—the Taiyals, the Saisset, the Bunnun, the Tsuou, the Tearisen, the Paiwan Piyuma, the Ami and the Yami. Among the various tribes, the most warlike and ferocious are the Taiyals. The main strength in advancing the "aiyu" or "guard line" is directed against this tribe. The Bunnuns and the Paiwans are also daring savages; but they may be regarded as tractable in comparison with the Taiyals. Living in plains, the Amis have more chance to come in contact with civilization, and are gradually becoming accustomed to agricultural life. The Yamis, who live in solitary islands, are the most backward.

The work of domesticating the aborigines is carried on by teaching them industry, by giving them education and free medical treatment. The aborigines are not entirely unacquainted with the tilling of soil. Their usual method consists in burning forests or plains, and sowing or planting the upland with rice, millet, potatoes, beans, etc., after slightly scratching the soil (some of them sow seeds without tilling). They do not really cultivate; nor do they ever fertilize lands. After two or three years when the productive power of land gives out they turn to new places to repeat the process. The Government has opened, in several prefectures, model farms for teaching



Making Iron Wire Dike Forms

The Iron Wire Dike System in Place

simple farming methods, such as hoeing, weeding, etc.

The art of weaving is not unknown among the aboriginal women. Though rude in construction they have looms on which they weave cloth for household use or for barter. Five training institutes to teach them an improved method of weaving have been opened.

At the children's training institute in Toyen Prefecture an instructor skilled in the use of the lathe is employed to teach the aboriginal boys the making of wooden trays, bowls, etc. They have readily taken to this handicraft. At a similar institute in Kagi Prefecture rattan working is being taught the aboriginal boys and young men.

Between 1896 and 1901 attempts were made to give the rudiments of education to the aboriginal children, but with little or no result. Only after the latter year, when the education of aborigines was placed in charge of the Prefectural Governments has the work been carried on under a uniform plan with something to show. In 1905 ten public schools for the aboriginal children were established in the Prefectures of Taito and Koshun; the number being later increased to sixteen. But these efforts are confined to the more domesticated of the tribes. To disseminate education more widely among the aboriginal tribes in general and to introduce Japanese manners and customs among their children, and through them to extend civilizing influences to their parents and elders, the island authorities have since entrusted the police with the work of reaching and teaching young aborigines, wherever possible.

The aborigines have their own code of morals handed down from ancient times. They have strict rules regulating relations between the parent and child, between brothers, between husband and wife, and between the old and the young, well in keeping with the ethical principles of piety, devotion, fidelity and reverence. They are, also, ancestor worshippers, and are very loyal in observing traditional teachings. Even their custom of head-hunting has a patriotic meaning with them, in that it originates in the pious desire to defend the land bequeathed by their ancestors against the encroachment of alien people. Being thus based on such a motive, it is no easy task to persuade them to give it up. In view of this the Government's plan is to convince the tribes of the futility of resistance by the pushing forward the Aiyu lines and by sending out punitive expeditions, and then to induce them voluntarily to surrender their fire arms. Then effort is made to convert them morally and spiritually by stationing religious teachers of firm resolution and unshakable faith among them. The wives of some of these teachers have been entrusted with the work of reaching and winning over the aboriginal women.

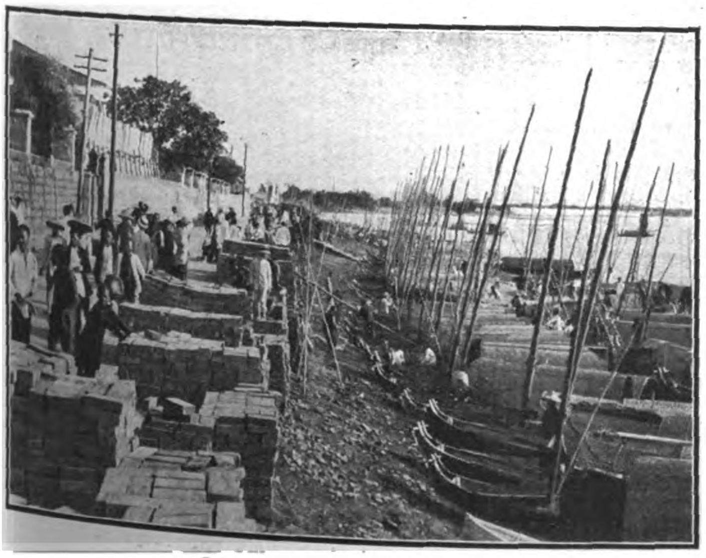
### Subjugating the Tribes

Two methods are used in subjugating the defiant tribes. One is the pushing forward the Aiyu or guards lines and the other the punitive expedition. The Aiyu is a line of outposts surrounding ferocious tribes. Along the intended line a road is cut across mountains and valleys, and the inside of the line is cleared for some distance of trees and shrubs, in order to facilitate shooting. On this road, outposts consisting of 2 to 4 aiyu-men (native guardsmen) are stationed every two or three cho. At every two or three outposts is stationed the superintending agency consisting of a Japanese policeman and several aiyus, while the whole line is placed under the control of a police sergeant and his subordinates. At strategic points machine guns are placed and wire entanglements are set up, thus making it impossible for the savages to cross the boundary and attack peaceful inhabitants. The advancing or pushing forward of the line means the gradual shifting and closing of this line on the tribal headquarters, steadily circumscribing them within narrower limits.

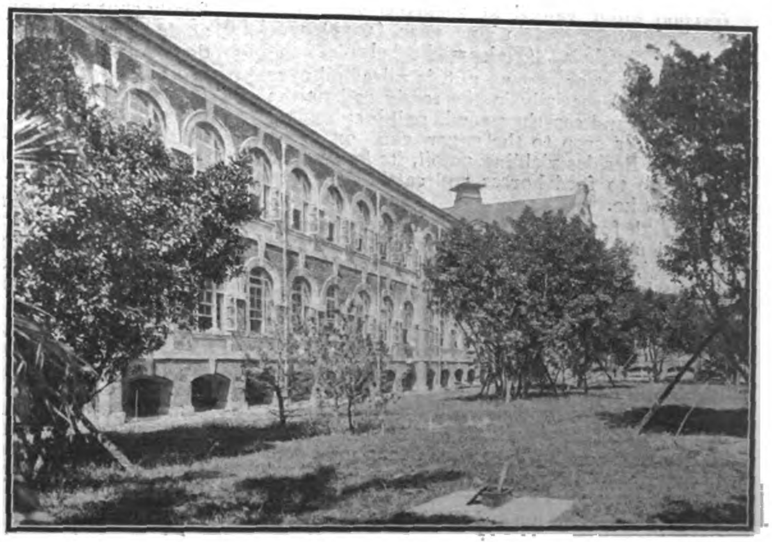
Punitive expeditions are formed and put in operation when the refractory aborigines offer organized resistance in defiance of peace time police force, the object being to punish and bring them into submission. These expeditions are conducted by bodies of policemen sometimes assisted by the regular troops. The guard lines have been advanced or new lines set up forty times, and ten or more punitive expeditions have been conducted.

### Agricultural Productions and Settlers

The soil and climate of the Island are well fitted for agriculture. To add to this, the



On the Great Oak River



The Taihoku Hospital

Government General has promulgated many special ordinances to encourage the reclamation of wild lands, the work of irrigation and the building up of the sugar industry. The Government General has established an Agricultural Laboratory, a Sugar Laboratory, an Experimental Tea Plantation, and an Experimental Horticultural Station, with the object of disseminating an agricultural education by carrying out experiments, and also by enlisting students. More recently the Government General issued regulations for the encouragement of sericulture, which has a great future in the Island. Since these measures of agricultural administration have been in operation there has been conspicuous activity in all agricultural industries and considerable increase in production.

The total area of land for which permit to open up was issued up to the end of December, 1914 in accordance with the above regulations was 54,773 ko, of which 4,276 ko have been conferred the industrial rights. The area provided with newly cut irrigation canals stood at the end of 1914 at 158,679 ko officially recognized and 72,874 ko not officially recognized; total 231,679 ko.

The agricultural work of the Island is carried out on lands long since under cultivation as well as those newly opened up. The utilization and economy of land coming under the former category have been intensified and they have shown marked advance in their productive capacity, so that their total outputs were valued at over 100,000,000 yen at the end of 1914.

Occupied lands are about 10 per cent of the total land area of the Island and something over 54 per cent of the "administration zone." Of those cultivating these areas, 358,072 are independent farmers, 242,206 part independent and part tenant farmers, and 272,390 tenant farmers, or a total of about 1,000,000, that is, about 30 per cent of the entire population of the island. Add to this number 1,014,287, persons employed as farm hands, and it is seen that about two-thirds of the whole population belong to the farming class.

### Principal Agricultural Productions

The production of rice has greatly increased of late, the area of land cultivated for the purpose reaching 492,944 ko in 1914, yielding 4,489,000 koku of rice, valued at 51,676,000 yen. Rice, thus, comes second only to sugar in the list of the Island's agricultural products and forms 40 per cent of their entire value. The Island's transactions in rice with Japan were opened in 1897. In 1898 the price of rice rose high in Japan and the exportation of the cereal from the Island made a sudden increase. Since then its shipment home has gone on steadily so that to-day the entire surplus after supplying the needs of the Island is forwarded to Japan, and in 1914 its export amounted to 680,000 koku valued at 7,900,000 yen. The rice of two crops in one year (1913) was 2,346,998 bushels. (Koku=5 bushels).

The peanut or ground nut, is raised all over the Island, especially in the sandy soil on the river-side and sea-shores, where it is cultivated as an after crop to the sugar cane or sweet potato. Besides yielding an oil, its leaves and stalks go to feed horses and cattle. Its area is 19,414 ko.

Though found more or less in every part of the Island, sesame is most largely cultivated in Kagi, where it is chiefly used for the expression of oil. It is grown on 10,953 ko.

The island in 1913 exported 17,000,000 kin (Kin = 1⅓ pounds) of tea, worth Y 6,434,680, and the plant forms one of the main-stays of its trade. The shrub grows luxuriantly in the northern provinces of the Island, the Toyen district being most noted while Daitotei is the chief market.

The tea zone of the Island is hilly and undulating with high plains. Both soil and climate are well suited for the growth of the shrub. There is not a hill side or an elevation that has not been turned into a tea plantation. The area of tea plantations in 1914 aggregated 33,383 ko yielding Y7,000,000 of manufactured leaves. The tea leaves are roughly prepared by the local farmers and then re-fired by the tea-merchants in the market town.

Sugar plantations were formerly found mainly south of Dakusuikei, where the lack of irrigation facilities made it impossible to raise rice. The native sugar industry of Formosa possesses a history dating back hundreds of years, but has always been primitive, the variety of canes being of inferior kind while the method of cultivation has been carelessness itself with no attention paid to the problems of fertilization and irrigation, and consequently the crop amounted to only 40,000 kin per ko (21,200 lbs. an acre) with five to eight per cent of sugar.

When the Government General undertook to introduce improvements in the industry in 1903, it, therefore, began the work by endeavoring to persuade the planters to reform, at the same time extending aids in furnishing fertilizers and young plants, while insisting on advanced methods of cultivation. As the result of improvements in the method of cultivation the crop per ko has increased to 50,000 kin or more with 10 per cent or more of sugar. Besides the plantation area has also greatly increased, and in 1914 the sugar crop was seven times that of 1903.

Other crops are indigo, "tree indigo," ramie, jute, pine apple fibres, China grass, tobacco and fruits, among them oranges, lichees, persimmons, plums, peaches, bananas, and pine-apples.

The number of settlers received up to the end of 1913 was 73,937 persons, of whom 18,671 were men and 55,766 women. Their health condition is good.

## MYSORE SANTALWOOD DISTILLERY

The establishment of a factory in Mysore state, India, for the manufacture of sandalwood oil marks another step forward in the gradual elimination of raw materials from exportation and their replacement by the finished or at least partly manufactured products. Not that sandalwood (properly santalwood) oil has not been a manufacture of India, but the product turned out by the small and badly equipped native plants has been so crude and has suffered so many adulterations in its progress to the final markets that these were finally shut to it and the native buyer was left alone in his handling and use of it. The distillation of the wood by private persons is prohibited in Mysore state, anyway, and the few tons of the wood that passed through the rude native stills, was the product of the border areas of the forests.

Manufacture of essential oils is a highly technical process which has been a gradual development in Germany and France, which countries were the ultimate buyers of the santalwood, and as knowledge of these methods had not penetrated to Mysore, as a preliminary to any proposals to set up sandalwood distillation in Mysore, it was decided to have the whole question thoroughly investigated and this work was entrusted to Professor Sudborough and Dr. Watson of the Indian Institute of Science. During the whole of last year and up to the present time the matter has been under experimental investigation and the results obtained are of a sufficiently satisfactory character to warrant the establishment of an experimental factory where the oil will be manufactured on a commercial scale.

This new factory which will cost about one lakh (R. 100,000=$32,400 gold) of rupees is under construction. In the course of the experimental work, a considerable quantity of sandalwood oil has been produced, the bulk of which has been sold locally at very favourable prices and the oil which has been sent to England has been declared equal to the best that can be obtained in Europe and has fetched equal prices. It is hoped that by the end of this month (March) the new factory will be at work, producing about 2,000 pounds of sandalwood oil per month. The oil produced with the experimental plant is now selling freely at Rs. 18 per pound whilst the price on the London market is as high as 30 shillings a pound. To pass the test to which the oil is subjected in Europe, complete chemical control is necessary and every consignment of oil sent out from the factory will be subjected to an examination, and a certificate as to its quality issued. In this way it is hoped to be able to overcome the prejudice against the sandalwood oil manufactured in India and to retain in the Mysore State the profits on the manufacture of the oil which have hitherto largely gone to Germany.

Although sandalwood oil has been manufactured in India from time immemorial, this venture is practically a new industry as the methods intended to be pursued are from the beginning entirely different from current Indian practices. The annual auction sales of sandalwood will still continue and the new factory will purchase sandalwood from the Forest Department at the same prices as paid by outsiders. If the industry proves profitable, it is under contemplation to establish a distillation plant of sufficient size to deal with the whole annual output of the sandalwood of the south of India. The advantages possessed by a local distillery worked on modern lines are very considerable, and it is expected that not only will the State be able to maintain the revenue hitherto enjoyed from the sandalwood monopoly but largely to increase it. The disposal of sandalwood in Mysore, we are reminded, is a State monopoly which in recent years has produced a large net revenue. In 1913-14 just previous to the outbreak of war this revenue amounted to 19.87 lakhs of rupees produced by the sale of 1,862 tons of wood. The wood is mainly disposed of by auction sales held in the months of November and December, but after the outbreak of war there was an almost complete cessation of the demand from European buyers. Latterly the business has revived and at the auction sales at the end of last year good prices were obtained for a fairly large quantity of wood.

## UNLOADING OIL TANK CARS

At oil tank stations where two or more different kinds of oils are stored, pumping plants are being used for transferring oil from the tank cars to the storage tanks.

The outfit which is made by The Goulds Manufacturing Company, Seneca Falls, N. Y., and is known as their Fig. 1668, consists of 2 Goulds 6"x6" "Pyramid" Single Cylinder, Single Acting Piston Pumps mounted on one base with pulley between. The shafts of both pumps are fitted with jaw clutches so that the pumps may be operated separately or both at the same time.

As it is not convenient to always clean the pumps this is an ideal outfit for such service as the same pump can always be used for handling the same oil.

# AN EXAMINATION OF CHINESE BRONZES

By John C. Ferguson, in the Annual Report of the Smithsonian Institution.

It is important that, in all branches of Chinese art, the rest of the world should understand the Chinese point of view. Without a careful survey of the historical development of the country it is impossible to enter

Tripod bronze vessel of Chow Dynasty, known as the K'o Ting; supported on wooden stand.

into the intricacies of their art interpretation, but general principles can be learned by persons unfamiliar with the language of China if these are translated into our own language. There is a greater lack of accurate information concerning bronzes than in any other field of Chinese art, and this is not for the reason that Chinese literature is not rich in books on this subject. The purpose of this article is to bring to the attention of the western world a succinct authoritative statement of the principles recognized by Chinese connoisseurs in the examination of Chinese bronzes. The original text is written in short nervous sentences which I have frequently joined together to make the meaning clearer.

The following account was written in 1767 by Liang T'ung-shu, the son of Liang Shih-

Covered tripod bronze vessel, of Shang Dynasty, decorated with pinniped pattern—k'uei wên; four suspending rings on cover; color of bronze is mercurial and is iridescent.

cheng, a noted official of the reign of Chien Lung, who was an eminent authority in archeological research, especially in connection with the places around West Lake, Hangchow. The son was employed in the palace as an expert.

This account was in manuscript and was published only in 1913 by the Shen Cho Kuo She, Shanghai, in its encyclopaedia of fine arts, Mei Shu Ts'ing She. So little has been written on this subject that the following translation may be of some value to the increasing number of students of this interesting branch. The translation of the text is as follows:

What are now called antiques are the gold and silver inlaid bronzes of the Shang dynasty* and the "ting," "tsun" and "i" of King Wen, which were also of ancient workmanship, and therefore correctly classified as belonging to the Shang and Chow periods. The men of the Han dynasty were fond of the craftsman's art, as is shown by the jade pieces of that period which are of rare workmanship. It was near to the period of antiquity, and the models of three dynasties could be readily utilized. The articles produced were named after the period of their pattern, and are not necessarily to be considered as genuine products of the Shang and Chow dynasties. There are also articles which have been fraudulently said to have come from ancient tombs, such as the instance of the Hunan amulets. Such facts are well known to connoisseurs. Articles used in the Han period, like the Po-shan censers, having no

Bronze wine vessel, of Shang Dynasty, decorated above and below with recurved pattern —hui wên. In center are nipples surrounded by diapers. Handles richly carved and surmounted by ogre's head.

distinct coloring of blue or green are not classed as ancient, but as belonging to the Han dynasty, but it must be remembered that the output of mortuary articles during the three dynasties was very great and that they were not much used during the Han. Therefore few articles were then buried, and even in the case of those which were buried the blue and green color must be very much like that of the article of the three dynasties, for the difference in age is not great. Even jades which are now found with bloodlike marks come from the Han period, and how could it be possible that bronzes could be buried without undergoing a change of color?

### Color of Ancient Bronzes.

Ancient vessels which have been much exposed to the air become blue, while those much exposed to water become green. When exposed to both air and water, the colors blue and green are both produced. The tombs of the ancient kings and emperors were solidly built, so that water could not penetrate them. Those vessels that were placed on stone pedestals were in the air as long as the pedestal remained intact. Thus, being long

Bronze wine vessel, of Chow Dynasty, decorated with the thunder scroll—lui wên, and known as the Fu Ting I; has a cast inscription.

subject to the influence of the surrounding air, the color became very pure, and, furthermore, there being no contact with the earth, the color is a pure (kingfisher) blue. This is the best variety. Inferior to this are vessels found in the burial mounds of the ministers of state where they were subject to the influence of soil and water, and thus they were colored both blue and green. The pure green ones were produced where they lay in water without being covered with the soil.

### Burial in Earth vs. Exposure to Air.

Bronze vessels buried in the earth for a thousand years become pure blue, like that of the kingfisher. The color before noon is pale, but after noon takes on the appearance of clouds, and the kingfisher blue seems as if it would liquefy into drops. There are also places where the earth has eaten into the metal, either making a hole or forming scales and giving the appearance of snail tracks. An appearance of being the mark of a stroke of a hammer is unreal.

Bronze vessels subject to the influence of water for a thousand years become pure

Bronze libation cup, of Chow Dynasty, with one handle and two suspending hooks, known as Fu I Tsioh, with an inscription under the handle.

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*Early Chinese dynasties; Hsia, B.C. 2205-1766, Shang, 1766-1122; Chow, 1122-255 (the preceding three dynasties known as the San Tai) Ts'in, 255-206; Han, B.C. 206 to A.D. 221.

Bronze vase, of Chow Dynasty, known as a Ku; is supported on wooden stand.

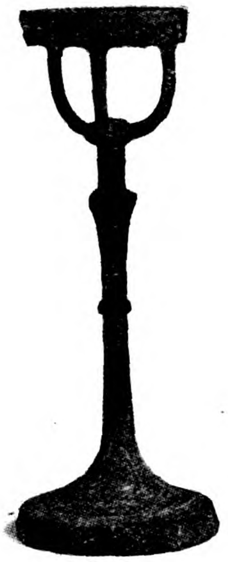
Bronze bell, known as Chung, of Chow Dynasty; supported on wooden stand with over-reaching frame; double dragon decoration at top. (Ferguson collection.)

green, as the rind of a melon (kua-p'i), and glossy like jade. If subjected to such influences for a shorter time, although they may be bluish green, yet they are not bright. Corroded places are similar to those mentioned in the preceding paragraph.

Bronze tripod wine steamer, known as a Ting, of Han Dynasty; top of legs decorated with an animal head, cover missing, hollow tubes above vessel provide exit for evaporation of wine which dripped from overhanging cover. (Collection of Mr. Pao Hsi, Peking.)

It is the present custom to call "ancient" light-weighted specimens of either of the above classes. This is done in ignorance of the fact that large vessels are necessarily thick, and that only a third of such vessels are corroded even during a long period of time. The weight of these vessels in which the bronze has only been partially corroded is only reduced by a third or a half. In the case of light, thin vessels, where the influences of earth or water have easily penetrated the entire body of the bronze, the color of the bronze cannot be seen when fractures have been made by the strokes of hoes. It is all blue or green, or there is an occasional streak of red, like red lead. However, the resonance of the metal is not lost.

Such specimens as have not been covered with earth or water and have been preserved to the present time have a dark brown color with red scales. These scales stand out like good Chen-chow sand. If immersed in hot water for a good length of time, the patina of these scales becomes more brilliant. Such specimens are of the highest value. Spurious specimens can be detected, as their color is only superficial.



Bronze candlestick, known as Têng, of the Han Dynasty. (Ferguson collection.)

None of three classes mentioned above has any rank odor, with the exception of those recently exhumed from old soil, which retain a strong smell of earth for a short period. Spurious specimens, when rubbed briskly with the palm of the hand, have a distinct disagreeable smell.

Bronze musical rattle, known as Wu Lao, of Chow Dynasty, used for ceremonial dancing; has a loose tongue which rattles when instrument is shaken. (Ferguson collection.)

Bronze range with utensils, of Han Dynasty; supported on wooden frame. (Ferguson collection.)

Bronze incense burner, known as Po Shan Lu, of Han Dynasty.

### Color and Pattern.

Specimens of a dark reddish or black lacquer color that have been in the soil or in water for a short time may become superficially beautiful, but the beauty is not deep and they are never glossy. Such specimens are of secondary value. I have noticed that Han dynasty seals and coins which are fifteen hundred or sixteen hundred years old are rarely glossy even when they are quite green; neither do they have red scales raised upon

them. Ancient specimens of bronze in which the patina has penetrated deeply are glossy like jade and have red scales, thus showing that they belong to the three dynasties (Hsia, Shang, Chow). To determine their age, attention must be paid to the gloss of specimens and then to their pattern.

**Determination of Inscriptions.**

Inscriptions are of two different kinds, k'uan and chi. What is called chuan (seal characters or ornamental writing) is for the commemoration of merit. This writing is on bells and tripods. K'uan is in intaglio, and such writing during the three dynasties was considered stylish. The characters were sunk into the metal. From the time of the Han dynasty, the "chi" in relief was used, with occasional use, also, of sunken characters incised by the use of tools in the same manner as if on stone tablets. Sunken chi were difficult to cast, but relief chi were easy, and thus it can be easily detected that they did not long belong to the period of the three dynasties. The "k'uan" of ancient vessels were on the inside and sunken. The chi were on the outside and were in relief. Vessels of the Hsia and Chow dynasties had either chi or k'uan, while those of the Shang dynasty usually had chi, but no k'uan. The ancients showed great care in the work. Artisans were classed by them as among the four estates of the people, and were not looked down upon as in later degenerate days.

In casting vessels the ancients used wax for their models or patterns, and the lines were thin like hairs, even, regular, and distinct. The characters of chi were rounding like the surface of inverted tiles. They were not deep or bold, and both large and small characters had the same depth. They were clear and distinct without any blurs. Such castings of carefully chosen bronze were excellent. They had three characteristics: First, they had no marks of sand granules; second, the workmanship was wonderful, and third, there was no sparing of labor. They were not made overnight. If ancient vessels are now found with the k'uan and chi blurred and distorted and cast in an irregular mold, these are the work of amateurs or imitators. The quality of the metal, its color and odor, are not the same as of good vessels.

The ancients used sacrificial vessels, such as bells and tripods, for the praise of meritorious and worthy deeds, and hence made inscriptions on them. Inscriptions were put on platters and bowls when they were used in preparation for sacrifices, but when used for domestic purposes inscriptions were often lacking, and such fact can not be used as proof of their being counterfeits. In such case the style of inscription, the quality, color, and odor of the metal must decide.

**Vessels of the Three Dynasties.**

The Hsia dynasty was noted for reliability, the Shang for quality, and the Chow for display; and the bronze vessels of these dynasties have the same respective differences. Vessels of the Shang dynasty are plain and without adornment, those of the Chow dynasty are finely engraved, while those of the Hsia are different from either of these. I have often seen vessels of the Hsia dynasty on which gold was inlaid thin as hairs. In course of time the gold fell out, leaving sunken places, so that the ornamentation became depressions. Such inlaying is now often wrongly attributed to the Shang dynasty by those whose knowledge is limited. They should remember the poetical quotation:

> "Engraved and chiseled are the ornaments.
> "Of metal and of jade is their substance."
> Shi King III, 1,4,5.

and thus know that these were of the three dynasties period.

New bronze vessels are those cast during the T'ang, Sung, and Yuan dynasties. From the time of the Emperor Yuan Pao (742-756 A.D.) of the T'ang dynasty, down through the Sung dynasties such vessels were made at Kuyung. Many were also made at T'ai-chow, but these were chiefly of the small lui-wen pattern. During the Yuan dynasty, Chiang Lang-tzu, of Hangchow, and Lu Wang-chi, of Ping Chiang, were noted artisans, but the figures on their work were without delicacy. However, Chiang was a better workman than Lu.

The method of determining ancient bronze vessels adopted by the Household Department of the Ching Dynasty was that vessels of the Shang dynasty were unadorned, those of the Chow dynasty were richly engraved with fine lines, while those of the Hsia dynasty were inlaid with gold which had the appearance of fine hairs. These fundamental facts can not be overlooked.

The inscriptions in "chung," "ting," "tsun," and "i" during the Hsia, Shang and early part of the Chow dynasty had only one or two characters, and at the most 20 or 30. Long inscriptions of two or three hundred characters belong to the later part of the Chow dynasty or to the early Ts'in. There were also genuine vessels of the three dynasties which bore no inscription, for the reason that they were the property of families which had no special merit to commemorate. Such vessels cannot be discarded as spurious. The characters used in inscriptions of the Hsia dynasty were niao chi (bird tracks), those of Shang were ch'ung-yu (insects and fish) while those of Chow were ch'ung-yu and the large "seal" characters. Ts'in dynasty used the large and small seal characters, but from the Han dynasty onward small "seal" characters were used. The three dynasties used sunken inscriptions, while the Ts'in and Han used inscriptions in relief, and occasionally sunken ones, which were incised with tools in the same manner as stone tablets for the reason that this was easier than casting inscriptions in intaglio.

Ts'ao Chung-ming says that the bronze vessels buried in the earth for a thousand years became pure blue like the kingfisher, while those subject to the influence of water for a thousand years became clear green as the rind of a melon. My opinion is that where the soil is warm and moist vessels become blue and where the water is brackish they become green. It is also said that before a thousand years vessels may become blue or green, but not glossy; but I fear that this is not true. How can it be that vessels of a thousand years of age which are glossy, but on which the blue and green colors are not pure, are not properly classed as belonging to the three dynasties? Kao Shen-fu considered that where the metal was comparatively pure and without much alloy the vessels became blue, and that when the alloy was in large proportion they became green. But the ancients were not niggardly in their expenditures, and how can it be thought that they preferred alloyed metals? Such statements are those of a blind man at a theater, and should be discounted. There are those also who maintain that vessels of a dark-brown color have not been preserved in open places, but have come from graves on hillsides or stone vaults where there is no dampness to cause the decaying corpses to influence the color of the metal, and this opinion is probably correct.

The sound given out by ancient bronzes is clear, while that of modern pieces is confused and noisy. Ancient bronzes have no rank odor, except those which have been recently taken from the soil and still retain its smell. Other kinds are spurious. If rubbed briskly with the palm of the hand, a rank odor is given off.

The ancients were not sparing of labor like the artisans of later degenerate times. For this reason the k'uan and chi of ancient bronzes were fine like hairs and were even, regular, and distinct without a trace of being blurred. The characters of the chi were rounding like the surface of inverted tiles and uniform in depth, both when written large or small. The specimens preserved by me all have these characteristics, but I have seen those preserved by others which are different. If the inscriptions are somewhat blurred, such specimens are spurious, and the quality and color of the metal would also be incorrect.

The best color of ancient bronzes, according to some persons, is dark brown, and in my opinion the worst is a leaden color. Those which have red scales are better than the lead-colored ones, but the dark-brown color is still better. The dark-brown color is not so good as the green, nor the green as the blue, nor the blue as those which are iridescent (mercurial), or the iridescent as the black lacquered ones, which, however, have the fault of being easy to counterfeit. Such counterfeits can be readily detected.

## BOOK REVIEW

### Chinese Encyclopedic Dictionary

Three years ago the Commercial Press put out its New Dictionary, which has become an indispensable reference book. This firm recently published another greater and more complete work known as the Encyclopedic Dictionary to be for the Chinese language what the Century and other similar dictionaries are to English. The work meets a long-felt need. The Chinese language is many centuries old, and its literature has been especially enriched during recent years with the new learning. It still is in process of evolution and many new expressions relating to the sciences, law, medicine, history, etc., have found their Chinese equivalents. New words and phrases are being coined daily to meet new conditions of modern civilization. Therefore, it was necessary to have a dictionary of the new language of modern China, besides that of Confucius.

The work under review is the product of a large staff of scholars, under the editorship of Mr. Lu Erh-kwei, after years of labour. It deals with language and literature, philosophy and religion, astronomy and geology, physics and chemistry, physiology and hygiene, disease and medicine, economics and political science. It contains phrases, terms, idioms and other expressions not found in an ordinary dictionary. Experts and specialists were consulted about the terms used. The definitions are clear and to the point, and the workmanship is excellent. The work is most valuable to students of modern and classical learning, be they foreign or Chinese. It should be in the study of every student of the Chinese language, and no library is complete without it.

Bound in five forms, ranging from Mexican \$20 to \$5 per set. All bound in two volumes, except the first form, which is in twelve Chinese volumes. The middle form contains 3,094 pages. Publishers, the Commercial Press, Limited, Shanghai.

## THE WESTERN ELECTRIC COMPANY

One of the largest manufactories of electrical machinery in the United States and which has a number of successful installations in China to its credit, the Western Electric Company of Chicago, is preparing for the large extension of its business that is already in sight. To enter more strongly into the China trade the company has established a branch office in Shanghai and has taken new and commodious quarters in the Union Building, No. 4 The Bund, Shanghai. Here the company will maintain a show room in which samples of products will be displayed in such a way that the special advantages of Western Electric apparatus can be readily looked into by those interested in any line of electrical machinery that the company manufactures. The branch in Shanghai will be under the direct supervision of Mr. F. F. Fairman and it will hold the sole agency in China while Messrs. Arnold Karberg who formerly held this agency will have no further connection with the Western Electric Company.

# SHANGHAI MUNICIPAL ELECTRIC PLANT

FROM ANNUAL REPORT OF ELECTRICAL ENGINEER FOR 1915.

The principal outstanding and satisfactory feature of the past year is the vindication of the Department's policy, financial stability and technical soundness, as agreed upon by Mr. A. H. Preece, and the satisfactory financial position reported upon by the Treasurer. It may be hoped the Department will now be allowed to continue its activities along the path of progress, cleared of the obstacle doubt and paved with confidence for the future.

The other feature, unsatisfactory indeed, is the serious breakdown of the German built turbo-alternators at Riverside. It is not generally known that at one critical period 60 per cent. of the turbine plant was unavailable for service owing to serious defects the development of which had made themselves manifest. But for the incident of the Chinese New Year holidays, when the demand for electricity falls owing to the mills closing, the full supply to the public could not have been maintained. Into the technical causes of these breakdowns it is unnecessary to enter in detail, but enough has been discovered to prove that unsuitable material used in the manufacture was responsible for the trouble. Evidence collected in the United States and England goes to show that the use of the particular metals employed in the construction of the turbine blading was likely to end in disaster. Chemical analysis of the metal conclusively proves that a wrong selection was made in its choice. Two of the machines which developed blade trouble had been in commission only one year and nine months. Other mechanical defects have also since shown up. A serious electrical breakdown also occurred necessitating re-winding part of one of the alternators. This occurred almost simultaneously with the blade troubles and so threw an additional strain upon the Department in maintaining an uninterrupted supply to the public during that period. The best of machines may give some trouble at times, were it otherwise the calling of the engineer would be less obvious, but trouble such as was experienced with the German built machines at Riverside is directly traceable to faulty construction and selection of metals. It may not unnaturally be asked why were these machines selected. The reply is that tenders were, in accordance with the Council's custom, publicly invited. The selected ones were, theoretically, taking price, steam consumption and guaranteed efficiency into full consideration, the best offered for the purpose required, and it would, at the time, have been difficult to have passed them over.

The figures below show the yearly cost in repairs and maintenance of British built machines at Fearon Road Station, in comparison with the German machines at Riverside. The number of years the various machines have been in commission is also given.

| Make | Capacity in Kilowatts. | Years in Commission. | Yearly cost in Repairs and Maintenance. |
|---|---|---|---|
| — | — | — | — |
| | | | Taels |
| Parsons | 1,000 | 9 | 380 |
| Willans and Robinson | 1,000 | 8 | 396 |
| Belliss and Morcom | 600 | 8 | 141 |
| do. | 600 | 8 | 183 |
| Howdens | 500 | 5 | 343 |
| do. | 500 | 5 | 423 |
| Allgemeine Electricitats Gesellschaft | 2,000 | 1 year 9 months | 2,550 |
| do. do. | 2,000 | 1 year 9 months | 2,140 |

The above figures do not take into account the further losses in the shape of lost revenue resulting in the stoppage of the A.E.G. machines during the time they were under repair. These machines would normally be generating more electricity than the others owing to their greater capacity, thus the loss of revenue was proportionately greater.

Since these turbines were installed trouble with machines of similar make have come to light in connexion with machines in Australia and England. Not only have the German turbines proved defective in Shanghai, but several transformers have also shown marked inferiority to either British or American ones in service. This is not a mere generalisation, the truth of the statement is beyond dispute.

It is hoped these remarks, for which from the purely commercial aspect it would have been preferred there had been no cause, may be carefully studied by prospective buyers and users of electrical plant throughout China. It is not perhaps unfair to claim that on account of the relative magnitude of the Shanghai electricity undertaking and its large foreign staff of engineers, machinery may receive better treatment and more careful supervision than can be given in smaller undertakings either in the outports or interior cities of China. This then leads to the conclusion that nothing but the most reliable machinery should ever be considered for such undertakings.

Notwithstanding the laying up of the Riverside turbines for a considerable time for repairs, by the exercise of care on the part of the acting chief mechanical assistant engineer in charge of the two power stations, and his assistant engineers, the year's working shows a further reduction in the costs of production from last year's figure of tael cents 2.28 to 1.78 or 22%. The greatest reduction is in coal which is the result partly of a cheaper price paid, partly to supervision and again to the lower steam consumption of one of the new 5,000 Kilowatt turbines. The sales of electricity for all purposes increased by 52 per cent.

### Analysis of Works Costs

UNITS SOLD AND ACCOUNTED FOR

| Account. | 1912. 12,130,537 Tls. | Per Unit Cand., | 1913. 21,888,230 Tls. | Per Unit Cand. | 1914. 32,885,822 Tls. | Per Unit Cand. | 1915 49,827,555 Tls. | Per Unit Cand. | Decrease over previous year Cand. |
|---|---|---|---|---|---|---|---|---|---|
| Coal - - - | 137,367 | 1.13 | 231,985 | 1.06 | 336,186 | 1.02 | 420,408 | .85 | —.17 |
| Oil, Waste, Water and Stores - - | 15,208 | .13 | 22,283 | .10 | 26,128 | .08 | 37,159 | .07 | —.01 |
| Wages - - | 34,903 | .28 | 52,964 | .24 | 59,072 | .18 | 69,487 | .14 | —.04 |
| Repairs and Maintenance | 97,095 | .80 | 151,902 | .69 | 168,538 | .51 | 190,204 | .38 | —.13 |
| Rent, Rates and Taxes - | 11,262 | .09 | 14,277 | .07 | 20,780 | .07 | 24,807 | .05 | —.02 |
| Management Expenses - | 86,198 | .71 | 107,604 | .49 | 137,999 | .42 | 144,404 | .29 | —.13 |
| Total | 381,313 | 3.14 | 581,015 | 2.65 | 749,603 | 2.28 | 886,649 | 1.78 | —.50 |

Had both 5,000 K.W. turbines been in order (one, it will be recalled, stripped the blading of one wheel and is still running with one wheel short, and taking about 20 lbs. of steam per kilowatt hour as against a guaranteed consumption of 13 lbs.) a still further reduction in the generating costs would have been remarked. These yearly reductions in Works Costs are indicative of what may be looked for when the new extensions now in hand are completed; they bring nearer to realisation the hoped for reduction in the prices charged for lighting, heating and cooking.

### Plant Capacity

The generating plant capacity of the two stations may be taken at 19,600 kilowatts. The storage battery, used in connexion with the traction supply, was scrapped as it was no longer in a serviceable condition. The sale of this battery, consisting principally of lead plates and sheets was most satisfactory, realising a net sum of Taels 14,456. Its book value was Tls. 10,461.

### Maximum Load

The maximum load on the two stations was 14,400 kilowatts, and the load delivered to the feeders for light, heat, power and traction 13,909 kilowatts. This fell short of the 15,500 kilowatts estimated at the beginning of the year. It is explained largely by the fact that shortly before the close of the year some of the large mills shut down temporarily, one mill alone accounting for 500 kilowatts, while quite a number of small power users had also stopped operations due to trade depression. It is reckoned that 800 kilowatts can be accounted for from this cause. The traction load remained practically the same as last year.

### Load Factor

A remarkable improvement of the Load Factor can be recorded. From the generally accepted good figure of 33.6 per cent of 1914 it has now reached 40.8 per cent. It is but fair to add, however, that the temporary reduction of the maximum load by some 800 K.W. towards the close of the year helped the load factor improvement, but only to a small extent. Had no shrinkage of load occurred more units would have been sold and it may quite safely be said that a 39 per cent. load factor would still have been reached.

Perhaps a better appreciation of the importance of a high load factor may be gathered from the following figures,* which show the units sold per kilowatt by the five largest British municipal electricity supply undertakings and also at Shanghai. They clearly indicate the number of units sold per year for each kilowatt of maximum demand.

### Distribution

The actual quantity of underground cable and overhead mains erected was less than during the previous year, but this in no wise reflects lesser activities in the mains department nor a falling off in electricity demand. During the past few years a great extension

* See Table on next Page.

**Comparison of Load Factors of Cities**

| Year Ending | Undertaking | Units Sold per annum | Maximum Demand in K. W. | Load Factor. | Units sold per kilowatt of Maximum Demand. |
|---|---|---|---|---|---|
| 1914 | Manchester | 117,982,802 | 49,897 | 26.98% | 2,303 |
| 1915 | Glasgow | 88,834,270 | 39,750 | 25.51% | 2,240 |
| 1914 | Birmingham | 73,767,178 | 33,177 | 25.38% | 2,225 |
| 1915 | Shanghai | 49,600,824 | 13,909 | 40.8% | 3,560 |
| 1914 | Liverpool | 48,122,198 | 22,186 | 24.76% | 2,100 |
| 1915 | Sheffield | 44,873,342 | 23,618 | 21.69% | 1,900 |

and enlargement of the distributing system has been carried out, so that in many areas extensions or enlargements should not be necessary for some time. Nevertheless, there are always new areas where distributing mains are required, and from time to time extra high pressure underground feeder cables have to be laid for supplying them, also for meeting the industrial loads which now form such a large proportion of the output.

During the year 119.20 miles of cable have been erected for enlarging and extendi ng the overhead mains and 0.65 miles of E.H.T., 2.13 miles of L.T. and 0.50 miles of pilot cable laid.

New poles numbering 1,414 were erected and 822 renewed.

### Transformer Sub-stations

43 additional transformers were put into service totalling 11,606 K. W. Of these 4 were of the oil-cooled pole type=60 K.W. and 39 indoor type=11,546 K.W. while 39 transformers were disconnected totalling 6,212 K.W. of which 3 were oil-cooled pole type=60 K.W. and 36 indoor type=6,152 K.W. The nett increase in transformer capacity is therefore 5,394 K.W. Total capacity of all transformers in service=18,284 K.W.

The new sub-station at Tonquin Road was completed, partly equipped with switchgear and transformer, and put into commission. This sub-station has been designed to supply the surrounding district, which is becoming very largely industrial in character. It is now supplied through four underground 6,300 volt cables, but in the near future additional aid will be effected by means of three 22,000 volt underground trunk feeders. The pressure will then be stepped down from these cables to 6,300 volts for distribution to local feeders, and also to 350 volts for general supply in the immediate vicinity. This sub-station has been designed for dealing with an ultimate capacity of 15,000 kilowatts.

Arrangements were concluded with the French Tramway and Lighting Company for a bulk supply up to 400 K.W. This supply was connected during the year, but up to the present the maximum demand called for by the Company has not exceeded, on the average, more than 228 K.W., but this is likely to be further increased during the current year.

The sub-station work in progress and completed during the year was as follows: Thirteen 3-phase sub-stations erected and commissioned, 3 single phase sub-stations erected and commissioned, 3 3-phase sub-stations dismantled and disconnected, 10 single phase sub-stations dismantled and disconnected, 7 3-phase sub-stations in course of erection. The ultimate capacity of these seven sub-stations at present in course of erection is 10,000 kilowatts.

### Public Lighting

Street lamps at the end of the year were:—44 arc and 1,422 metal lamps, made up as follows: 32 enclosed arcs, 12 flame arcs, 801 sixty candle power, metal filament nitrogen lamps, 184 of 100 candle power, 167 of 200 and 270 of 400 candle power.

Practically all the incandescent street lamps are now of the so-called half-watt or nitrogen type. The current consumption of these lamps is approximately .75 watts per candle as compared with 1.2 watts per candle consumed by the ordinary metal lamp formerly in use. The quality of the light emitted from these nitrogen lamps is whiter than from the metal lamps.

During the typhoon last summer serious interruption to the street lighting occurred in those districts where there are many trees alongside the roads. In almost all cases where the lighting was interrupted the cause was traceable to branches of trees having fallen upon or amongst the wires forming the street lighting circuits. In the Central and Northern districts, where there are practically no trees which can come in contact with the wires, very little trouble or inconvenience was experienced as a result of the typhoon.

The partial failure of the street lighting during the typhoon period called forth much criticism, some of which was not altogether fair. In the first place the typhoon was of exceptional severity, and did damage to various other property, etc., which had successfully withstood previous typhoons. It is also to be borne in mind that the prices charged for street lighting are low, and for the price paid, and considering the really rare occasions when failures occur, it has not by any means been proved that the system deserves the strictures passed upon it. The importance of reliable street lighting is indisputable; if a more perfect system is demanded it can be provided by electricity better than by any other known agent. By serving those street lamps, in roads where experience has shown trouble may be caused by trees, by underground cables, a more reliable system would be obtained. It would mean a somewhat increased cost per lamp; the question is whether the existing arrangement does not give—on the whole—a sufficiently good service for the outlying areas, which are the principal ones which have been affected?

4,000 meters were issued for measuring the consumption of electrical energy on consumers premises. This figure represents the nett increase in meters issued during the year after allowing for meters returned for cleaning, repair and from premises disconnected. There were 16,992 meters in use at the end of the year, and 1,092 current limiters. The nett increase in service connexions was 3,149. The total connexions to the mains is 18,104.

### Increase in Equivalent 30-watt Lamps

The recorded number of additional 30-watt (equivalent) lamps connected during the year is 92,331 which brings the total connected up to 621,078. These include fans, radiators and cookers, but neither street lamps nor motors, which are usually included in the 30-watt equivalents of most supply undertakings.

### Motors

The motors connected and disconnected during the period under review were as under:—

| | | Aggregating | |
|---|---|---|---|
| Connected | 299 | 4,972 | Horse Power |
| Disconnected | 162 | ,, 2,607 | ,, |
| Nett Increase | 137 | ,, 2,365 | ,, |

The total horse power on the mains is now 14,547.

The nett increase of small motor consumers is, under existing conditions, satisfactory, but it is to be noted that many of the smaller businesses failed, or shut down temporarily during the year. With a revival of trade a return to normal conditions may be looked for. The large proportion of disconnections is accounted for by the arrangements made to effect the temporary drive of the Yangtszepoo Cotton Mill during the course of the year. The motors in question totalled some 650 H.P. and were disconnected during August. The work of substituting 3-phase motors for the single-phase type in those districts where change of system of supply has been effected has also been responsible for a large number of apparent disconnections. The prospects for the present year cannot be gauged with any degree of accuracy, but indications justify a belief that there will be a large increase in small motors. With regard to larger power installations, such as the electrification of mills, negotiations have been concluded with the following:—

Dah Yue Oil Mill, 350 horse power; Lih Teh Oil Mill, 230; Poh Yih Cotton Mill 750; Naigai Wata Kaisha No. 3 Mill, 1,500; Foo Foong Flour Mill, 600; Hung Foong Flour Mill, 280; Hung Yue Cotton Mill, 650; Hsen Shing Cotton Mill, 650; Foh Shing (No. 3) Flour Mill, 400; San Sing Cotton Mill, 800; a prospective Total of 6,210 horse power.

The annual totals over the past 5 years were:—

1911, 1,775 horse power; 1912, 3,029 h.p.; 1913, 5,263 h.p.; 1914, 12,181 h.p.; 1915, 14,547 h.p.

### Heating and Cooking

Electric heating has now become thoroughly established. The number of additional radiators connected during the year—practically all of which were hired out by the Department—increased by 345. This brings the total number of radiators to 1,216, representing a heating load—if all were in use at the same time—of 2,432 kilowatts.

This form of heating has become popular amongst Foreigners and Chinese alike. The absence of dirt, smell and fumes, and also the portability of the electric radiator are all in its favour; moreover, no flues or chimneys are required, there being no products of combustion to be carried away. Then again, the cheap heating rate of 2.5 candareens per unit still further attracts consumers. Electric cooking has not had an opportunity of expanding because the cooking ranges ordered to meet the demand could not be procured. These ranges, on order for over a year, were not delivered in Shanghai till January this year.

Electricity for heating and cooking is gaining so increasingly in favour, not only in Shanghai but in other countries, that it is no extravagant claim to make that it will supersede other forms wherever the price charged for current is sufficiently low. In discussing the commercial possibilities of electric cooking and heating with Mr. Lackie, the Engineer-in-Chief of the Glasgow Municipal Electricity Department, the writer was given conclusive evidence that in the large area served by the department the progress already made was very considerable and satisfactory. Particulars were given of new building estates whereon electricity is solely employed in domestic use for lighting and cooking.

In the earlier stages of development much disappointment was caused by the unreliability of the heating elements, but these initial difficulties, common to many innovations, have been steadily overcome, and at the present time the appliances, obtainable from the manufacturers who have specialised in this class of work, are very great improvements over the early products.

That such firms as the Carron Co., and the Falkirk Iron Works, firms which have been engaged upon the manufacture of domestic and other cooking ranges for over a century, have laid out sections of their works for the manufacture of electric heating and cooking appliances, it will be the more readily appreciated that the new industry has become a firmly established one.

These remarks are offered in the hope of dispelling the doubts which may still linger in the minds of some that electricity for heating and cooking is merely a fad and a dream of the idealist.

### Electrical Units Sold

The total sales of electricity amounted to 49,787,397 which is an increase of 52% over the 1914 sales. The sales for various purposes are here shown together with the increased and decreased percentages over the period 1914.

Private lighting consumption shows a steady increase, whilst public lighting consumption

has remained steady; this although over one hundred additional street lamps were connected, by the extended general use of the new half-watt nitrogen metal lamp. The large percentage of heating units furnishes ample proof that electric heating has come to stay. The power sales gain of 101% is noteworthy. It will not be many years before the power units exceed 100,000,000 per annum. Traction units show a small falling off, due to the more effective measures taken by the Tramway Co. to reduce waste of energy on the cars.

| | 1914. | 1915. | percent. |
|---|---|---|---|
| Private Lighting | 12,325,247 | 14,073,166 | + 14.2 |
| Public Lighting | 1,055,272 | 1,005,259 | − 4.7 |
| Heating and Cooking | 395,675 | 679,704 | − 71.5 |
| Power | 15,230,639 | 30,633,455 | + 101 |
| Traction | 3,626,838 | 3,395,813 | + 6.4 |
| Total | 32,633,671 | 49,787,397 | + 52.6 |

5,337,824 units were used at the Power Station and otherwise accounted for. This quantity is nearly as great as the total units sold and accounted for in 1909. Of the total number of 62,291,443 units generated Riverside provided 54,845,415. The units used at both power stations directly in the generation of electricity were 5,150,922 or 8.27% of the total. The percentage in 1914 was 9.92%.

### Staff

The European staff at the end of the year totalled 76, of whom 18 per cent. are serving with the Colors. In fairness to those remaining in Shanghai it should be known that the majority of eligible men were anxious to follow the example of their confreres, but had they insisted in following their natural inclinations it would have been difficult to have maintained the public service. The Chinese staff at the end of the year was 885.

### Financial Returns

The estimated nett profit on the year's working was Tls. 252,051 and that actually made is Tls. 258,909.42. Contributory causes to this excess profit are, the realisation of a better price per unit of electricity sold than estimated, a certain reduction of the salaries owing to engineers, clerks and others being absent on war service, premia on issue of debentures, interest charges less than expected, and depreciation allowance also less. In this latter connexion it should be explained that no reduction in the fixed rate of depreciation has been made, but the amount reserved for special depreciation of Fearon Road Station was corrected to its proper figure, too much having been reserved during the past three years. On the other side, however, the sum of Tls. 9,483 was written off on re-valuation of stores and a further Tls. 7,000 reserved for the same purpose.

The estimated sales of energy and the actual sales are set out below:—

| | Units. Estimated. | Actual. |
|---|---|---|
| Private Lighting ... ... | 16,980,000 | 14,073,166 |
| Heating ... ... ... ... | 554,000 | 679,704 |
| Power ... ... ... ... | 33,612,600 | 30,633,455 |
| Public Lighting ... ... | 1,000,000 | 1,005,259 |
| Traction ... ... ... ... | 4,000,000 | 3,395,813 |

On sales of energy the actual units are 6,358,603 short of the estimate but the actual revenue is less only by Tls. 61,067. As, however, the units sold are less than anticipated so the costs of generation, as represented by the saving in coal used for the smaller output, are also necessarily lower, which has helped improve the nett profit.

### Riverside Extensions

A better description of the Riverside extensions can be made after the extension scheme is completed but a few general remarks at the present time will indicate the lines upon which the extensions are to be carried out. The turbine and boiler houses will be of similar construction to the existing buildings, *i.e.* steel frame building with galvanised corrugated iron walls. The turbine room will be 90 feet long by 60 feet wide, and the boiler house 130 feet long by 90 feet wide. Accommodation is being provided for the storage of about 1,000 tons of coal in overhead coal bunkers above the firing floor. Coal will be delivered to these bunkers by means of coal handling plant capable of dealing with 60 tons per hour. The coal can be conveyed direct from the coal store, 11,000 tons capacity, situated between the river and the power station, or direct from the barges by the use of a travelling transporter and belt conveyor. Between the boiler house and turbine room, running the whole length of the building, space is provided in a bay 20 feet wide for the boiler feed pumps, forced draught fans and hot wells on the ground floor level, whilst on the floor above this accommodation is being provided for a mess room and offices for the European staff, and also a mess room and other conveniences for the native staff.

The switch and transformer house will be built entirely of reinforced concrete as a separate annex to the turbine room, the length of this building being 85 feet by 30 feet wide. For the circulating water pumps four additional pump chambers will be sunk in the river adjacent to the existing pump houses. At the present time it is only intended to instal two pumps, but it is considered advisable to sink the pump chambers for future extensions at the same time.

### Generating Plant

Two turbine driven generators each of 10,000 kilowatts capacity and one of 5,000 kilowatts capacity are to be installed, thus increasing the plant capacity of the station by 25,000 kilowatts, making the total at Riverside 39,000 kilowatts. The turbines are designed to operate with steam at a pressure of 180 lbs. (boiler pressure 200 lbs. per square inch), superheat up to 200° Fahr. The alternators are designed to generate at a pressure of 6,600 volts, and by means of step-up transformers, connected directly to the generators, the pressure will be transformed up to 22,000 volts. The transformers are designed with an internal reactance of 5 per cent., so that by their use the employment of external reactances, now usually regarded as necessary in big power stations, will not be necessary. It is interesting to note that whilst one of the 10,000 kilowatt turbines will be of the impulse type, such as those already installed, the other 10,000 kilowatt set will be of the Parsons reaction type. These two machines will have to operate under exactly identical conditions, thus there will be excellent opportunities for observing the peculiar merits of the two machines, and enable a first hand experience to be gained with the examples of the two schools of thought on turbine design.

### Switchgear

The 22,000 volt switchgear is of special design and arranged with a view to securing the greatest reliability and safety in operation. It is arranged as far as possible so that a breakdown to one part should not seriously affect the other sections. It occupies three separate floors and the lay-out is designed to ensure ease and reliability of operation, and to reduce the risk of fire to a minimum. The switchgear chosen is of an expensive type, but it is fully recognised that switchgear is the most vital part of a station and that it is false economy to cut down the cost of that particular section. The general lay-out of the switchgear is the result of the Department's own ideas, together with improvements which have been suggested from observations made in some of the newest and most up-to-date power stations in Great Britain and the United States, and through the courtesy of prominent engineers who have kindly allowed an examination of the switchgear, plans and designs of projected large power stations with which they are connected. The writer's particular thanks are due to Mr. W. Lackie, Engineer-in Chief of the Glasgow Corporation Electricity Department and Mr. P. V. Hunter of Newcastle-on-Tyne.

### Boilers

There will be eight new boilers installed, all of the Babcock and Wilcox water tube marine type, fitted with self-contained superheaters and feed water heaters. Each boiler is designed to evaporate 40,000 lbs. of water per hour at a pressure of 200 lbs. per square inch and at a temperature of 575° Fahr. under normal conditions, but to be capable of giving an evaporation up to 50,000 lbs. with increased draught. For each pair of boilers one steel chimney is being provided, together with an induced draught fan driven either by electric motor or steam engine as may be desired. In addition to this an electrically driven fan will provide forced draught to supplement the induced draught. The method to be adopted is known as the balanced draught system, which is coming into common use in modern stations. Six of the boilers will be fitted with Babcock and Wilcox chain grate stokers, and the two remaining boilers with the Taylor underfeed stoker.

### Pumping Plant

Two vertical electrically driven centrifugal pumps, each capable of delivering 20,000 gallons of water per minute against a head of 45 feet, will be installed for the provision of circulating water for the condensers.

### Underground Cables

To connect Riverside Power Station with Fearon Road distributing station, four underground cables, each of .15 square inch sectional area, constructed for a working pressure of 22,000 volts, will be laid. These cables will be of split conductor type which type will be adopted for all future extra high pressure cable work in Shanghai, where the importance of the feeders merits the higher cost of these cables over the ordinary 3-core ones. The split conductor system has been decided upon after very careful investigation, the conclusions arrived at being that it offers the best cable protection at present available. The adoption of this system makes it necessary for the switchgear at both Riverside and Fearon Road to be of a rather more expensive type, since the splitting of the conductors necessitates extra switches at both ends of the line.

At Fearon Road Station the current will be transformed down from 22,000 to 6,300 volts by means of step-down transformers similar to the ones to be installed at Riverside but with a smaller internal reactance. Connexion will be made between the existing 6,300 volt switchgear and the transformed current conveyed by the new 22,000 volt underground feeders, which will increase the available output of electricity, at the 6,300 volt distributing pressure, to the various sub-stations in the Central, Eastern and Northern districts. Arrangements are also being made whereby current may be supplied to the Western district at Tonquin Road substation direct from Riverside at 22,000 volts pressure, using Fearon Road as a looping-in and sectionalising point.

22,000 volt switchgear is also being provided for the Fearon Road Station to control that end of the 22,000 volt underground cables and also the step-down transformers interconnecting the two stations. Before this plant can be installed it will be necessary to remove the separately fired superheater and four of the boilers at Fearon Road. This work cannot be proceeded with until one of the 10,000 kilowatt turbines is commissioned at Riverside.

With regard to the choice of 22,000 volts as a transmission pressure for trunk cables, this pressure was selected as the result of much investigation and the collected experience of the working of extra high pressure underground cables. It was selected as being preferable to 33,000 volts suggested in the last Annual Report. Although 33,000 volt cable has been made, it did not appear to offer advantages over the 22,000 volt cable in economy, whereas its adoption would have increased the cost of all attendant switchgear. The conclusion formed was that whereas 22,000 volts is an economical pressure to adopt

33,000 would offer less advantage. After more experience has been gained in the manufacture and use of extra high pressure cables, it is probable that a pressure of 40,000 volts will under certain conditions become standard in the future, where the distance of transmission would make it more economical to use such voltage. So far, the distance over which energy has to be transmitted in Shanghai would not justify the higher voltage, and it may be safely concluded that the adoption of 22,000 volts is the best selection for the local conditions.

Appended is a Report of the various tenders received. The actual contracts placed do not in all cases correspond with the prices shown in the list of tenders. This is explained by the increased cost of raw materials since the tenders were submitted and before the contracts were placed. Other modifications were also necessitated by reason of the additional 5,000 kilowatt turbo-generator, which it was finally decided to provide, but for which no provision was made in the original switchgear or transformer specifications, these having been drawn up for a 20,000 and not a 25,000 kilowatt extension. Therefore additional switchgear and transformer capacity and larger circulating water pumps have to be provided which, together with increased costs, have made the contract prices come up to the figures shown in the list of actual contracts placed.

### Extensions

Joint Report by Mr. A. H. Preece and Mr. T. H. U. Aldridge on Recommendations relating to the placing of orders for New Plant. The following tenders were received on Steelwork for Buildings:—

Two sets each of 10,000 kilowatts output would be the best selection, but in view of the longer time machines of this size would be in building, the greater difficulties of handling and longer period for erecting them on site, as compared with a 5,000 K.W. set, it is deemed advisable to recommend that one machine of 5,000 K.W. should be ordered. It being recognised that additional plant is urgently needed, and whilst the introduction of a 5,000 K.W. unit may not represent the best engineering or commercial practice, the times are such that in order to more certainly ensure continuity of supply to consumers, it is safer in the general interests to secure a set of this size in order to meet the increasing demands on the power station. All things considered there is more likelihood of getting a machine of this size built, shipped and put into commission quicker than a 10,000 K.W. set. Assuming that this machine can be ready for service in August next year it would then be possible to meet the 1916 winter load, although the station would not have a full margin of reserve plant installed unless one of the larger sets, which should also be ordered, is also ready. Nevertheless the purchase of a 5,000 K.W. set would undoubtedly place the Department in a safer position in so far as it would enable the 1916 demands to be met. With regard to the permanent economical value of the set no apprehension need be felt since the guaranteed steam consumption is satisfactory, and the cost per kilowatt is £3.2 as compared with £3.17 and £3.26 for 10,000 K.W. machines. Summarising the position it may be stated that whereas in normal times, or, if there was no great hurry for additional plant, we should advise the installation of two

### Steel Work Tenders

| | Price. £ | Delivery. Weeks. |
|---|---|---|
| United States Steel Products Co. ... ... ... ... ... | 8,026 (@ G. $4.7 = £1) | 12 |
| Lysaght, Ld. ... ... ... ... ... ... ... ... | 12,939 8. 0. | 26 |
| Head Wrightson & Co. ... ... ... ... ... ... ... | 14,198 11. 1. | 36 |
| P. & W. McLellan ... ... ... ... ... ... ... | Schedule only | 48 |

The tender of the United States Steel Products Co., is recommended for acceptance.

### Turbo-Alternators Tenders Received

| Firm | Alternator | K.W. | Speed R P.M. | Price £ | Delivery Weeks | Full Load Steam lbs. | £ per K.W. |
|---|---|---|---|---|---|---|---|
| — | — | — | — | — | — | — | — |
| Fraser and Chalmers | Vickers | 5,000 | 3,000 | 16,009 | 27 | 13.0 | 3.2 |
| Escher Wyss | Brown Boveri | 5,000 | 3,000 | 16,448 | 26 | 12.62 | 3.36 |
| Wilians & Robinson | Siemens | do. | do. | 16,730 | 52 | 12.85 | 3.34 |
| Oerlikon | Oerlikon | do. | do. | 16,950 | 30 | 12.78 | 3.38 |
| Dick Kerr | Dick Kerr | do. | do. | 18,036 | — | 13.2 | 3.6 |
| D. Adamson | Siemens | do. | do. | 18,394 | 52 | 13.8 | 3.67 |
| C. A. Parsons | Parsons | do. | do. | 18,555 | 44 | 12.25 | 3.7 |
| Richardsons-Westgarth | Siemens | do. | do. | 18,860 | 52 | 12.52 | 3.76 |
| Howden & Co. | Siemens | do. | do. | 18,900 | 38 | 13.6 | 3.70 |
| Willans | Siemens | 6,000 | 1,500 | 19,927 | 36 | 12.75 | 3.34 |
| Westinghouse | Westinghouse | 5,000 | 3,000 | 21,136 | 33 | 15.0 | 4.23 |
| Oerlikon | Oerlikon | 7,000 | do. | 21,440 | 30 | 12.71 | 3.06 |
| Belliss | Vickers | do. | 1,500 | 23,610 | 35 | 13.05 | 3.37 |
| Brush Co. | Brush | 6,000 | do. | 24,010 | 47 | 12.9 | 4.0 |
| Howden & Co. | Vickers | 7,500 | do. | 34,605 | 48 | 13.05 | 3.3 |
| General Electric Co. (U.S.A.) | G. E. Co. | do. | do. | 25,750 | 30 | 12.55 | 3.43 |
| Dick Kerr | Dick Kerr | 8,000 | do. | 27,406 | — | 13.1 | 3.42 |
| Fraser & Chalmers | Vickers | 10,000 | do. | 27,427 | 50 | 12.75 | 2.74 |
| B. T. Houston Co. | B. T. H. | do. | do. | 27,554 | 30 | 12.5 | 2.75 |
| Willans | Siemens | do. | do. | 28,362 | 52 | 12.55 | 2.83 |
| Escher Wyss | Brown Boveri | do. | do. | 30,550 | 40 | 12.65 | 3.05 |
| Howden & Co. | Siemens | do. | do. | 31,690 | 52 | 12.95 | 3.16 |
| General Electric Co. (U.S.A.) | G. E. Co. | do. | do. | 31,720 | 32 | 12.85 | 3.17 |
| Oerlikon | Oerlikon | do. | do. | 31,913 | 37 | 12.61 | 3.19 |
| C. A. Parsons | Parsons | do. | do. | 32,605 | 52 | 11.9 | 3.26 |
| Westinghouse (U.S.A.) | Westinghouse | do. | do. | 33,780 | 25 | 13.5 | 3.37 |
| Richardsons-Westgarth | Siemens | do. | do. | 33,984 | 52 | 12.5 | 3.39 |
| Adamson | Siemens | do. | do. | 35,654 | 60 | 12.8 | 3.56 |
| Brush Co. | Brush | do. | do. | 39,710 | 72 | 12.65 | 3.9 |

The conclusions arrived at as to the most suitable sized units of plant, having regard to cost, efficiency, space occupied as affecting buildings, foundations, pipework, etc., are these:

10,000 K.W. machines only, existing circumstances justify a departure in order to meet the exigencies of the situation.

To provide for the balance to make up the station capacity to 20,000 K.W. the following suggestions are made: That inasmuch as the buildings can accommodate two 10,000 K.W. units in addition to the proposed 5,000 K.W. set, and in order to further postpone another large extension of the power station buildings in a few years' time, we consider that the installation of two 10,000 K.W. sets would best meet the case. This will give an increase of 5,000 K.W. above the original 20,000 K.W. proposal, but with the adequate boiler plant which it is proposed to install, together with existing boilers, full use of this additional capacity can be made. Should our proposals be agreed to we recommend ordering one 10,000 K.W. machine for delivery next year, and the second one for delivery in the spring or early summer of 1917.

The following tenders are selected for the Committee's approval:—

Messrs. Fraser & Chalmers, London, one 5,000 K.W. turbo-alternator turbine by Fraser & Chalmers. Alternator by Messrs. Vickers, Ld., Price, £16,009—delivery 27 weeks—Steam consumption 13 lbs. per K.W. hour.

Messrs. Parsons & Co., Newcastle-on-Tyne, one 10,000 K. W. turbo-alternator. Price £32,605—Delivery 52 weeks—Steam consumption 11.9 lbs. per K.W. hour. The General Electric Co. of New York one 10,000 K.W. turbo-alternator. Price £31,720—Delivery 32 weeks—Steam consumption 12.85 lbs. per K.W. hour.

The selection of Messrs. Parsons' tender, although not by any means the lowest, is due to the fact that this firm has already built machines of this size and over—one of 25,000 K.W. for the Chicago Edison Co., and that the very low steam consumption guaranteed more than compensates for the higher price of the plant. It is estimated that under ordinary conditions of working, such as pertain at Riverside, a saving of some £6,000 per annum on the coal bill would be effected when compared with the performances of other machines offered. In other words, the low steam consumption represents a saving of £6,000 per annum which more than wipes off the higher first cost of the machine. If time were of no importance we should advise placing the order for both 10,000 K.W. sets with Messrs. Parsons, by so doing a large annual saving on the coal bill would be obtained.

Instead of calling for tenders for the boiler plant Messrs. Babcock & Wilcox were asked to submit a complete tender for 8 boilers, chain-grate mechanical stokers, feed water heaters, artificial draught plant and steel chimneys. All the existing boiler plant at both Fearon Road and Riverside, with the exception of two old boilers, is of Babcock & Wilcox make. It has given satisfaction and we are of opinion that for power station purposes there is no better boiler than this firm's marine type. The prices have been carefully checked against those charged for similar boiler plant in other power stations and allowing for the increased costs due to the war, the tender submitted is a fair one and the prices are not higher than might be expected.

All the existing boilers in the Council's power stations are fitted with the Babcock & Wilcox chain-grate mechanical stoker. The tender includes such stokers for the eight new boilers. Evidence collected in the United States and in England shows that for certain classes of coal and for certain operating conditions, a stoker of the underfeed type presents what appears to be advantages over the chain-grate stoker in that it enables a larger overload capacity to be obtained from the boiler than is possible with the chain-grate type. If the claims made for this stoker can be fully substantiated its slightly higher cost would justify its adoption for the whole of the new boiler plant. Investigations made by Mr. Aldridge in New York, Boston, Pittsburgh and Glasgow show that this stoker finds much favour. We do not, however, recommend its adoption for all the boilers and consider it would be advisable to equip only two of the eight boilers. If its claims are fully borne out by experience, and if it is as satisfactory

with local as with certain British and American coals, then in future extensions this type may be adopted, or some of the existing chain-grate stokers at Riverside may later on be changed. The recommendations with regard to the boiler house plant are:—

Messrs. Babcock & Wilcox, Ld., London. 8 Marine type water tube boilers complete with feed water heaters, Chain-grate mechanical stokers for 6 boilers, Induced and forced draught fans, etc., for 6 boilers. Three steel chimneys, Pipework, etc., etc. Price £65,217—Delivery Glasgow—26 weeks 1st portion, 39 weeks 2nd portion. Messrs. Scholey & Co., Ld., London, Taylor underfeed stokers for 2 boilers, Induced and forced draught fans, etc., for 2 boilers, One steel chimney for one pair of 2 boilers. Price £5,370—Delivery New York—26 weeks.

### Coal Handling Plant

The following tenders were received:—Bennis & Co. £7,340; Fraser & Chalmers £9,817; Strachan & Henshaw £11,395; Babcock & Wilcox £18,238; Spencer & Co. £27,885:

It will be observed that there is a very large discrepancy between the lowest and the highest tender. The lowest tender submitted by Messrs. Bennis & Co. does not provide for the carrying of the transporter bridge. As under their scheme it would be necessary to construct high concrete walls for supporting the transporter bridge, the cost of these would bring the price of the complete coal handling plant up above the second tender, moreover, the general lay-out as regards coal handling facilities is not, in our opinion, as good as the next lowest tender. We recommend the tender of Messrs. Fraser & Chalmers for acceptance. Some slight additional cost may be necessary as Messrs. Fraser & Chalmers have not adequately provided for coal weighing apparatus but a sum of £200 should be sufficient to cover this.

### For Extra High Pressure Switchgear for Riverside (22,000 Volts)

The following tenders were received:—Westinghouse Co. Pittsburgh £5,600; Ferguson Pailin & Co., Ld. £6,380; General Electric Co. (New York) £7,116; British Thomson-Houston Co., Ld. £7,233; Bertram Thomas £8,950; Switchgear & Cowans, Ld. £9,515:

The tender of the British Thomson-Houston Co., Ld., at £7,233 is recommended for acceptance. In connexion with this recommendation a few remarks in explanation of the reasons for advocating the acceptance of this tender are given. It is of the utmost importance that the switchgear of the main generating station and also at the important Fearon Road sub-station should be of the highest quality, as the successful operation of electricity supply depends very largely upon the switchgear.

The tender of the Westinghouse Co. of Pittsburgh is considerably lower in price, and the lay-out, although not in our opinion as good as the British Thomson-Houston Co.'s, which adheres in almost every detail to the design prepared in the Specification, is nevertheless a good one, but from experience we know that in placing orders for large and important switchgear such as this, modifications are often necessary from time to time during construction, and we feel that it is better to place the order with a firm who are in direct touch with the London office.

There is also another reason for preferring the British Thomson-Houston Co.'s offer, inasmuch as this Company has carried out a considerable amount of work in England in connexion with cable control designed on what is known as the split conductor system (which will be referred to later in this report when dealing with the underground cable contracts). This system, as far as we know, has only been applied in Great Britain, and on schemes designed by British engineers, and is not used in America. We consider it advisable to place the order for this important work with a firm which has already manufactured similar types of split conductor apparatus.

For the above reasons, having carefully considered the various tenders, we recommend accepting that of the British Thomson-Houston Co. of Rugby, at a total cost of £7,575, this figure it will be observed is higher than shown in the above list of tenders, viz. £7,233, this additional cost is entailed by our adoption of the split conductor cable system. If all the other tenderers re-quoted for split conductor switchgear their prices would be proportionately increased.

### High Pressure Switchgear for Fearon Road (6,600 Volts)

The following tenders for this apparatus were received:—British Thomson-Houston Co., Ld. £1,565; Ferguson, Pailin & Co., Ld. £1,685; Westinghouse Co., Pittsburgh, £2,015; We again recommend acceptance of the British Thomson-Houston Co.'s tender.

### Extra High Pressure Switchgear for Fearon Road (22,000 Volts)

Under the original scheme no provision was made for 22,000 volt switchgear at Fearon Road, because it was intended to connect the trunk feeders direct to the step-down transformers and control the switching operations on the cables from the 6,600 volt side only. Saving in cost was the prime motive for adopting this arrangement, but after the specifications for cable were issued it was found that similar protective apparatus to that which is already employed on four of the existing trunk feeders between Riverside and Fearon Road, which it was intended to again adopt in this case, could not satisfactorily perform similar functions when used with step-down transformers interposed. It, therefore, became necessary to amplify the switching arrangements at Fearon Road by the introduction of 22,000 volt switchgear in addition to 6,600 volt switchgear. As this apparatus has to work on the split conductor system, and in view of our recommendations that the Riverside switchgear should be given to the British Thomson-Houston Co., we consider it advisable to place the order with the same firm. It is not of such expensive design as the main switchgear at Riverside, but for technical reasons this is not necessary. The final arrangements for this apparatus had not been concluded when Mr. Aldridge left London, and prices are not yet to hand because the final arrangement has only just been decided upon here. It is estimated that the cost of this switchgear will be about £3,000.

### Circulating Water Pumps for Condensers

The following tenders were received:—

| | Price. | Maker of Motor. |
|---|---|---|
| | — | — |
| | £ | |
| Drysdales, Ltd. | 5,407 | |
| Worthington Pump Co. | 5,417 | E. C. C. |
| Rees Roturbo Co. | 5,537 | E. C. C. |
| Rees Roturbo Co. | 5,743 | Crompton. |
| Mather & Platt, Ltd. | 5,976 | Mather & Platt. |
| Gwynnes | *3,404 | Westinghouse. |

*Does not include steel pipes.

With regard to the above tenders which include the steel pipe between the pump house on the river and the turbine room, the price for the steel pipework in the different tenders varies considerably, and we therefore consider that it would be better to eliminate this item from these tenders and obtain new tenders for the pipework direct from the manufacturers of pipes. Eliminating this pipework the tenders come out in the following order:—

| | | |
|---|---|---|
| Drysdales | £3,157 | |
| Gwynnes | 3,404 | |
| Worthington (H.P. each 290) | 3,474 | £6 per H.P. |
| Mather & Platt (H.P. each 400) | 3,697 | £4.6 per H.P. |
| Rees Roturbo | 3,862 | |
| Rees Roturbo (alternative) | 4,113 | |

In these specifications details of the amount of water to be pumped and frictional head, etc., were given, but *no* two tenderers have put in offers to exactly the same conditions. The two lowest tenders, viz. those of Messrs. Drysdales and Gwynnes, do not provide sufficiently large pumps and motors for driving them as in our opinion would fulfil the requirements called for in the specification. With regard to the two next tenders, viz. those of the Worthington Pump Co. and Messrs. Mather & Platt, the former provide only 290 H.P. for driving each pump whereas the latter provide 400 H.P., therefore, the bigger plant would in practice be preferable because it would allow a bigger margin of safety at very low tide, also when the condensers are dirty and more power is required to force the water through them. If the two tenders are regarded in cost per H.P. provided, then the Worthington Pump Co.'s works out at £6 per H.P. and Mather & Platt's at £4.6. This being so, the latter is really the cheaper plant. As to the design and workmanship of the two firms, there is practically nothing to choose, we recommend the acceptance of Messrs. Mather & Platt's tender at £3,697; as this, without paying appreciably more for it, would give a bigger margin of safety and pump a greater quantity of water under the worst conditions that may obtain at Riverside.

### Static Transformers

The following tenders were received to the specification for transformers:—

| | Price. |
|---|---|
| | — |
| | £ |
| Westinghouse Co.—G. $59,276 | 12,300 |
| General Electric Co. of New York | 18,874 |
| British Electric Transformer Co. | 22,031 |
| Oerlikon Company | *23,050 |
| Brush Electric Engineering Co. | 26,304 |
| Ferranti Ltd. | †12,546 |

*Does not include oil.

†Quotation is for a portion only of the Transformers.

The inclusion of a 5,000 K.W. set has necessarily increased the number of transformers required at Riverside, furthermore the necessity of having 22,000 volt switchgear at Fearon Road makes advisable a different grouping of transformers and an alteration in the size of some of them. The total transformer capacity to be provided is 76,000 K.V.A. and the estimated cost is approximately £15,890.

The tender of the Westinghouse Co. of Pittsburgh is recommended for acceptance, the price being very considerably lower than the next tender, viz. that of the General Electric Co. of New York. The efficiencies and guarantees given are equally as good as those given in any of the other tenders and we consider that this firm's tender should be accepted. Modifications brought about by the addition of the 5,000 K.W. set and the re-grouping of the transformers differently to the scheme at first drawn up, means getting some 3,000 K.V.A. transformers which were not called for in the specification. The price of these has been estimated as closely as possible. With the exception of five transformers required for raising the pressure of the two existing cables connecting Fearon Road and Tonquin Road sub-stations, which are urgently required, the others are not really necessary until the end of the year, as until some of the boilers can be removed from Fearon Road there will not be room for installing the transformers in the space set free.

### Extra High Pressure Underground Cables 22,000 Volts

The following tenders were received to the specification calling for 40,000 yards of cable together with jointing boxes, etc.

| | Schedule A | Schedule B |
|---|---|---|
| | — | — |
| | Actual Tender | Adjusted |
| | £ | £ |
| Standard Underground Cable Co. | 33,004. 0.5 | 34,727. 5.0 |
| Siemens Brothers | 37,227.15.0 | 36,666.15.0 |

| | | |
|---|---|---|
| British Insulated & Helsby Cables Co. | 38,272. 6.0 | 38,251.10.0 |
| Johnson & Phillips | 38,818. 0.0 | 38,980. 7.8 |
| W. T. Henley's Telegraph Co. | 40,355.10.0 | 39,838. 5.0 |
| Pirelli, Ld. | 37,845. 2.0 | 39,893. 5.4 |
| Western Electric Co. | 41,449.12.4 | 41,395.11.6 |
| Callenders Cable Co. (Joint boxes split horizontally) | 43,944.12.0 | 43,456.12.0 |
| Callenders Cable Co. | 44,303.14.0 | 43,815.14.0 |
| Union Cable Co. | 47,400. 0.0 | 46,864. 0.0 |
| W. T. Glover & Co. | 47,835. 6.6 | 47,533.12.6 |

Schedule A shows the prices as received. Schedule B shows the prices adjusted, to a common price of copper and lead, which is really a truer comparison of the relative tenders. In the section of this report dealing with extra high tension switchgear, mention was made of the adoption of the split conductor system of cable protection. In this connexion it should be explained that the original specification for underground cable was drawn up for 3-core cable, which was to have been protected by apparatus similar to that already installed on some of the existing underground cables. Only after these tenders had been received it was found that owing to the interposition of step-down transformers at Fearon Road, the system would not be satisfactory. Very careful investigation leads us to the conclusion that the best system at present in use is that known as the split conductor system, which, from the experience so far known, gives greater reliability in service than other systems in use. Whilst many electricity supply undertakings have more or less satisfactorily carried on with protective gear as in use in Shanghai, it has been found that when such undertakings become very large phenomena occur which in the smaller systems are not met with. The efficient protection of cables and their attendant switchgear is a matter which has received a great deal of attention during the past few years. Great damage may be caused, not only to the cables themselves, but to other parts of the plant, by cables breaking down. A system, which instantaneously cuts off the current from such cables when they are damaged, may save thousands of pounds of damage to other apparatus and plant. In view of this, therefore, we consider it advisable to incur the additional cost of split conductor cables, regarding such expenditure as an additional insurance against interruption to the supply and loss of money consequent upon damage.

The manufacture of split cables is at the present time more special than ordinary 3-core cables, and as far as we know has not been made by more than a few of the firms who quoted to the original specification for 3-core cable. It having been decided to recommend the Council to use split conductor cables, the three following firms were asked to submit tenders for the supply of such cable, viz:—Messrs. Siemens Brothers, Henleys and the British Insulated & Helsby Cables Co., Ltd.

| | |
|---|---|
| Siemens Bros. | £ 41,058 |
| British Insulated & Helsby Cables Co. | 43,490 |
| Henleys, Ltd. | 43,900 |

We recommend acceptance of the British Insulated & Helsby Cables Co.'s tender.

### Pipework

There is still a certain amount of pipework for which tenders should be called, but specifications for this cannot be issued until the final drawings of the boilers and steam turbines are received from the builders. As soon as these drawings are received the final lay-out of the plant can be completed, the pipework can then be ordered to fit in with these arrangements.

T. H. U. ALDRIDGE,
A. H. PREECE.

# GENERAL CONDITION OF FINANCE AND ECONOMY IN JAPAN IN 1914-15

The General Budget for the Financial Year 1914-15 which was presented at the thirty-first session of the Diet failed to pass owing to differences between the two Chambers respecting the Warships Construction Vote, and the Government was compelled by the provisions of Art LXXI of the Imperial Constitution to carry into effect in the new year the Budget of the preceding year. And accordingly the Government, following precedents, framed within the limits of that budget a sort of self-denying working budget, which put the total revenue at yen 654,282,173 (£ 67,016,509) and the total expenditure at yen 559,759,598 (£ 57,334,794), thus giving a surplus of yen 94,522,575 (£ 9,681,661). At its thirty-second, thirty-third, and thirty-fourth sessions, the Diet passed the votes of yen 1,230,000 (£ 125,986) for the funeral expenses of the Empress Shoken and yen 6,520,000 (£ 667,828) for warships construction expenses and assented to the transfer of yen 51,000,000 (£ 5,223,804) to the extraordinary military expenses special account in consequence of the opening of hostilities with Germany and of yen 2,000,000 (£ 204,855) to the war reserve fund for 1914, making a total of yen 60,750,000 (£ 6,222,473). Moreover, yen 2,490,000 (£ 255,045) was added to the working budget for transfers to the sinking fund and for various repayments and other purposes, and at the same time, in order to carry out the policy of financial retrenchment in regard to the war, the general expenditure was curtailed and undertakings to be executed with continuing expenditures were postponed. By these means the annual expenditure was reduced by yen 2,160,000 (£ 221,243) and the revenue augmented by yen 32,000 (£ 3,278), with the result that the total revenue stood at yen 654,310,000 (£ 67,019,359) and the total expenditure at yen 623,850,000 (£ 63,899,419), thus yielding a surplus of yen 33,550,000 (£ 3,436,444).

Upon comparing the actual results of the revenue for the Financial Year 1913-14 with the Budget estimates, we find that in the ordinary section there was an increase of yen 32,530,000 (£ 3,331,968) in taxes and duties, mainly owing to increased revenue from Customs duties, sugar excise, and *sake*, income, and business taxes, and an increase of yen 1,750,000 (£ 179,248) in stamp duties, and in regard to Government undertakings and State property, although there was more or less decrease in the revenue from posts, telegraphs, and telephones, there was an increase principally in the profits of the Monopoly Bureau, Steel Foundry, and Tokyo and Osaka Arsenals, which gave a net increase of yen 8,970,000 (£918,775), making the total increase in the ordinary section yen 42,200,000 (£4,322,442). In the extraordinary section, there was a decrease of yen 4,870,000 (£ 498,822) in the transfer to the waterways improvement fund and of yen 2,530,000 (£ 259,142) in the public loan proceeds and other items; but on the other hand, there was an increase of yen 87,170,000 (£ 8,928,608) in the surplus brought over from the preceding year and yen 5,500,000 (£ 563,351) in miscellaneous receipts, showing a net increase in the extraordinary section of yen 85,350,000 (£ 8,742,190). Thus, the total ordinary and extraordinary revenue came up to yen 721,970,000 (£ 73,949,606), being an increase of yen 127,550,000 (£ 13,064,632) on the estimated total revenue, which had been put at yen 594,410,000 (£ 60,883,950). It should be added that the increase of yen 42,200,000 (£ 4,322,442) in the ordinary section takes into account the increase of yen 2,290,000 (£ 234,559) in the ordinary revenue in consequence of administrative adjustment and the decrease of yen 9,140,000 (£ 936,188) in the revenue as a result of the adjustment of the tax system, so that the natural increase in the ordinary section really amounted to yen 49,050,000 (£ 5,024,070).

Next, although the time has not yet arrived for ascertaining the actual results of the revenue for 1914-15, it is anticipated that in the ordinary section, when compared with the figures of the working budget, there will be a decrease of about yen 13,630,000 (£ 1,396,087) in the Customs receipts in consequence of the great war, and while there will be a decrease in the receipts from the textiles consumption and bourse taxes, there will be an increase in the receipts from sugar excise, and income, *sake*, and business taxes, so that there will be a net increase of yen 2,350,000 (£ 240,705) in the revenue from taxes and duties; and as regards the Government undertakings and State property, while there will be a decrease in the receipts from posts, telegraphs, and telephones, and from forests, an increase is anticipated in the profits of the Steel-Foundry, Government Printing Office, Tokyo and Osaka Arsenals, Senju Woollen Manufactory, and Monopoly Bureau, dividends, &c., so that there will be a net increase of yen 1,970,000 (£ 201,782); but as there will be a decrease of about yen 1,750,000 (£ 179,248) in stamp receipts, besides decreases in some other items the total net increase will be yen 2,030,000 (£ 207,928). In the extraordinary section, there will principally be an increase of yen 71,420,000 (£ 7,315,374) in the surplus brought over from the preceding year, and there will also be an increase in the proceeds of sale of State property, so that the total increase will be about yen 78,160,000 (£ 8,005,736). Accordingly, the total ordinary and extraordinary revenue will come up to yen 734,510,000 (£ 75,234,047), being an increase of about yen 80,200,000 (£ 8,214,688) on the total revenue given in the working budget which amounts to yen 654,310,101 (£ 67,019,369).

In the Financial Year 1914-15, while, on the one hand, there was, in consequence of the great war in Europe, a considerable reduction in revenue and also in the annual expenditure, a large amount of extraordinary expenses was required in the same connection, efforts were made on the other hand to strengthen the financial basis by strenuous adjustment of finance and administration, curtailment of expenditures, and postponement of undertakings. A change was made in the financial year for deferred payments for monopoly goods and the relations between the receipts and disbursements of the National Treasury were improved. And as through these measures there was always a large surplus in the National Treasury, no need was felt at all during the financial year under review for the issue of Treasury bills.

### A Brief Account of the Economic Condition

The following are the principal events in the Japanese economic world in 1914:—

The economic world in 1913 required a large amount of capital, as has been explained in the Financial and Economic Annual for 1914, on account of the progress of already-planned undertakings and for the settlement of the balance of foreign trade, with the result that the money market was on the whole in a tight condition. In the first half of 1914 the money market continued to be in the same condition: especially in February and March, as a result of many political dissensions in the Diet, the financial world took up a cautious attitude, and there was from January onward, a decrease, as compared with the same period of the preceding year, in the amount of new undertakings planned, amount of increase in nominal and paid-up capitals, amount of

debentures issued, and volume of foreign imports: the issue of convertible notes by the Bank of Japan was also continually lower than in the same period of the preceding year, and prices continued to fall.

At the end of March the General Budget for the Financial Year 1914-15 failed to pass the Diet and the Cabinet resigned in a body. In the middle of April the present Cabinet was formed. Soon after its formation the new Cabinet recognised the necessity of changing the financial policy which had up to that time been followed, especially in regard to public loans, and decided not to raise new loans either at home or abroad. In consequence, it was resolved, in regard to that portion of the fund for the construction and improvement of State railways which required to be borrowed, to reduce the amount annually set apart for redemption of loans from yen 50,000,000 (£ 5,121,377) to yen 30,000,000 (£ 3,072,826), and to loan the difference, that is, yen 20,000,000 (£ 2,048,551) from the general account to the railway account, and to pay in future out of the general revenue the money which had till then been obtained by means of public or temporary loans for the construction of railways in Chosen and repairing of rivers in Japan Proper; and at the same time plans were formed to use a large portion of the general account surplus (amounting at the time to yen 120,000,000 (£ 12,291,304)) which had accumulated from the preceding year as a result of financial and administrative adjustment and had not yet been specified for definite use, as a fund for a change of the terms for the payment of taxes and duties and suspension and transfer of already-fixed temporary loans; in this manner the receipts and disbursements of the National Treasury were to be harmonised, the issue of Treasury bills to be reduced, and appropriate reduction of taxes to be effected. While the above plans were to be carried out, the question of specie reserve was to be left to natural economic agency and to the sense of self-preservation on the part of the Bank of Japan, and thus the Government made clear its intention not to import foreign capital itself.

This financial programme won general admiration as one suited to the times; but as it was deemed that its effect would be great upon our economic world which had always been comparatively easily affected by financial movements and upon the financial world which had for many years been annually importing large amounts of foreign capital, the Bank of Japan raised its discount rate on the 6th July from 6.57 per cent. to 7.3 per cent. per annum and thus kept step with the new policy of the Government.

At the end of July, however, the sudden outbreak of war on an unprecedented scale among the great European Powers caused such a shock to the financial and economic circles of the whole world that they fell into a panic; and it was only natural that our country should also be seriously affected by it. The principal effects in Japan were the danger to navigation, rise of marine insurance rates, reduction and difficulty of importation and exportation, changes in foreign exchange rates and difficulty in drawing exchange bills, sudden fall in price of raw silk and cotton yarns, our most important articles of export, and rise in price of dyestuffs, chemicals, and many other articles of import. These effects were most marked in the early days of August.

Our financial and economic condition at the outbreak of war may be summarised as follows:—

1. There was a large surplus in the National Treasury;
2. There was no need for raising a public loan in order to carry the Budget into effect;
3. There was no intention to rely upon foreign capital for future financial operations;
4. The general economic world was already in a cautious attitude on account of the raising of the discount rate by the Bank of Japan on the 6th July;
5. The circulation of currency having gradually contracted since the preceding year, the issue by the Bank of Japan of its convertible notes beyond the prescribed limit as had for a long while been the case, ceased altogether and its resources comparatively large;
6. The balance of foreign trade improved considerably, and the excess of imports was rapidly being reduced as compared with the preceding year.

As the country was thus in a condition as if it had purposely prepared itself for an emergency, the general economic world was strong enough to oppose the effects of the situation. Accordingly there was no need in our country to adopt such extraordinary economic measures as were taken by many countries of the world, like suspension of conversion of notes by the central bank, prohibition of exportation of gold coin and bullion, moratorium, issue of emergency paper money, and various restrictions upon bourses. The only steps taken in this connection were the Government guarantee of war marine insurance and accommodation by the National Treasury of a capital of yen 8,000,000 (£819,420) for the relief of producers of raw silk and other important articles of export who were suffering from a heavy fall in market prices and sudden diminution of sale. Even the discount rate of the Bank of Japan was not raised at all after the outbreak of war.

Although upon the rupture of diplomatic relations with Germany on the 23rd August, our army proceeded to seize Tsingtau and our navy took hostile actions in various parts of the Pacific Ocean, our financial condition being as above stated, we were able to defray our war expenses entirely out of the surplus revenue and therefore we did not need not only to raise a loan or increase taxes to meet the expenses of our war with Germany, but even to issue Treasury bills. Although it had for many years been usual to have large amount of Treasury Bills outstanding, such amount altogether disappeared from the middle of February, 1914, to the end of the year. Only, as the surplus was, in consequence of the war with Germany and the European war, applied to purposes other than those planned for, it was eventually found impossible to use it for the reduction of taxes, change of the terms for the payment of taxes, and other purposes as had been originally planned.

Navigation, foreign exchange, foreign trade, and production of articles of export were seriously affected by the outbreak of war in Europe; its effects were also more or less felt in the general economic world, and the financial world maintained in the latter half of the year the attitude of caution which it had assumed in the former half.

The statistics showing the activities of the economic world under the influences above referred to reveal a decrease in every respect in 1914 as compared with the preceding year, thus:

1. The average issue for the whole year of the convertible notes of the Bank of Japan was yen 315,000,000 (£ 32,264,673), a decrease of yen 10,000,000 (£ 1,946,123) on the preceding year;
2. The amount of newly-planned undertakings was yen 250,000,000 (£ 25,606,883), a decrease of yen 130,000,000 (£ 13,315,579) on the preceding year;
3. The increase of the nominal capital of companies was yen 162,000,000 (£ 16,593,260), which was less than that in the preceding year by yen 109,000,000 (£ 11,164,601);
4. The increase of the paid-up capital of companies was yen 165,000,000 (£ 16,900,543), which was less than that in the preceding year by yen 13,000,000 (£ 1,331,558);
5. The issue of debentures amounted to yen 52,000,000 (£ 5,326,232), which was less than that in the preceding year by yen 12,000,000 (£ 1,229,130);
6. The average index number of prices of commodities in Tokyo was 4½ less than in the preceding year.

Further, a special phenomenon of the year was the unprecedented crop of rice, the product of our most important industry, and principal foodstuff of our people. Its production amounted to 57,000,000 *koku*, which was 7,000,000 *koku* in excess of the crop of a normal year. In consequence, its price which had been yen 22.80 (£ 2. 6*s.* 9*d*) in the early part of January, 1913 and yen 20.10 (£ 2. 1*s.* 2*d*) in the corresponding period of the succeeding year in the rice market of Tokyo fell by the end of the latter year to yen 11.60 (£ 1. 3*s.* 9*d*), which was such a heavy blow to the agricultural classes that an agitation arose in the Diet for their relief, the measure proposed being that the National Treasury should buy up a large quantity of rice in order to prevent the fall of its price.

Foreign trade also was affected by the influences above mentioned. The volume of imports was less than in the preceding year by yen 134,000,000 (£ 13,725,289) and stood at yen 595,000,000 (£ 60,944,382), and the exports were also less by yen 41,000,000 (£ 4,199,529) and stood at yen 591,000,000 (£ 60,534,672); thus the total trade amounted to yen 1,186,000,000 (£ 121,470,054) and showed a decrease of yen 175,000,000 (£ 17,924,818). The excess of imports over exports which was yen 97,000,000 (£ 9,935,471) in 1913 fell in the following year to yen 4,000,000 (£ 409,710), a decrease of yen 93,000,000 (£ 9,525,761).

Such a decrease of both imports and exports in one year is an anomaly that has not happened in the last quarter of a century, with the sole exception of that which occurred in 1908 after a panic in America. It is attributable partly to the European war and partly to the condition of the economic world at home: and this great decrease in the excess of imports was of material assistance in the solution of the specie question.

## JAPANESE LIME FOR PHILIPPINES

The establishment of sugar centrals in the Philippines has stimulated interest in the industry of supplying hydrated lime for use in the refining processes. Inquiries have been received concerning the feasibility of importing hydrated lime from the United States, and requests made for data as to the sources from which the lime is now obtained.

The local lime industry is still in embryo, although there are abundant deposits of limestone, as well as excellent marble deposits such as those of the Romblon fields. Up to a few years ago all the lime produced here was made by Chinese burners, who gathered sea shells heavily loaded with sand, from deposits along the shore, and burned them in crude kilns, producing a lime about 30 per cent pure. This was used for building purposes and was not very valuable.

The lime used for refining sugar has been and now is imported largely from Japan. This Japanese lime is shipped to the Visayan sugar regions in kerosene cans, and sells for about $27 per short ton. In some places an attempt has been made, by sugar men themselves, to produce lime locally. At the Roxas hacienda in Batangas, a few years ago, an attempt was made to produce refining lime from limestone deposits in the neighborhood, but the burning process was crude and the product mixed with ashes.

The Bureau of Science undertook to demonstrate that good lime could be produced from local limestone deposits, and to that end built a modern kiln, burning lime from pure stone. Local sugar men were induced to try the lime in refining sugar, and it was found to work very satisfactorily. From these experiments of the Bureau of Science considerable interest has been created, and several projects have been started for the production of lime locally.

# SHIPPING, NAVIGATION, AND HARBOUR-WORKS IN JAPAN

As a country like Japan, which is surrounded on all sides by sea, must depend for the development of its domestic industries and advance of its foreign trade solely upon the development of its navigation, the Government had long made efforts to protect and encourage navigation, and at length in March, 1896, issued the Navigation Encouragement Law (Law No. 15, 1896), according to which Japanese subjects, or trading companies whose partners or shareholders are all Japanese subjects, engaging in traffic between Japan and a foreign country or between foreign ports, subject to certain conditions were granted a navigation subsidy. But this law was, by Law No. 15 entitled the Ocean Service Subvention Law, promulgated in March, 1909, abolished after the last day of December of the same year. Under the new law, Japanese subjects, or trading companies whose partners or shareholders are all Japanese subjects engaging in transportation business receive navigation subsidies according to mileage, tonnage, speed, and age in respect of steel steamships with a gross tonnage of not less than three thousand tons, a speed of not less than twelve knots, and not more than fifteen years old, which have been registered in the shipping register of the Empire. Such vessels may be made to run regularly, for a period of not more than five years, on the four ocean lines, namely, to Europe, North America, South America and Australia.

The principal steamship companies which at present enjoy Government protection under the law above-mentioned and otherwise are the Nippon Yusen Kaisha (Japan Mail Steamship Company), the Osaka Shosen Kaisha (Osaka Mercantile Steamship Company), the Toyo Kisen Kaisha (Oriental Steamship Company), the Nisshin Kisen Kaisha (Japan-China Steamship Company), and the Nanyo Yusen Kaisha (South Sea Mail Steamship Company), and these five companies run steamers on the following lines:—

Nippon Yusen Kaisha. Besides engaging in the domestic coasting-trade (including Taiwan and Karafuto services), it runs regular services on the European, North American, Australian, Bombay, Calcutta, Shanghai, Vladivostok, North China, and Tsingtau lines.

Osaka Shosen Kaisha. Besides engaging in the domestic coasting-trade, it runs regular services on the North American, Tsuruga-Vladivostok, Otaru-Vladivostok, Dairen, Tientsin, South China, Bombay, Chemulpo, Hongkong-Haifong, Tsingtau, and Antung lines.

Toyo Kisen Kaisha. It runs steamers on the South American, North American, and Hongkong lines.

Nisshin Kisen Kaisha. It is engaged in the navigation of the Shanghai-Hankow, Hankow-Ichang, Hankow - Hsiangt'an, Hankow-Changta, Lake-P'oyang, Shanghai-Soochow, Shanghai-Hangchow, Soochow-Hangchow, Chinking-Tsingkiangpu, and Chinkiang-Yangchow lines.

Nanyo Yusen Kaisha. It runs regular services on the Java line.

Japan's shipping has since 1893 shown a steady increase in the number of vessels; and at the close of 1903 the country possessed 657,000 tons of steamers and 322,000 tons of sailing vessels, making a total of 979,000 tons for both descriptions; the tonnage of the steamer fleet was then about four times what it was nine years previously at the outbreak of the war with China. Nevertheless, her stupendous struggle with Russia necessitated a still further increase; accordingly, foreign vessels were bought, chartered, or given special permission to engage in the coastwise trade. In the course of the year 1904, the losses connected with the blockade of Port Arthur and those due to other causes came up to 71,000 tons; but on the other hand, 27,000 tons of steamers were built in Japan and 117,000 tons were purchased from abroad, making a total of 204,000 tons. Thus, the net increase was 133,000 tons, and the steamer fleet rose from 657,000 tons at the close of 1903 to 790,000 tons twelve months later. At the end of 1914 the registered gross tonnage of steamers was increased to 1,577,025 tons and that of sailing vessels to 513,244 tons, making a total of 2,090,269 tons.

Turning next to the shipbuilding industry of Japan, we find that it had already made steady progress when the Shipbuilding Encouragement Law and the Shipbuilding Regulations came into operation in 1896; and the industry has since advanced with remarkable energy. Prior to the operation of that law, vessels exceeding a thousand tons were usually purchased from abroad. But since this time, under the law referred to, bounties have been granted for the construction of iron or steel vessels of not less than 700 gross tons by any Japanese subject or any commercial company whose partners or shareholders are all Japanese subjects, that is engaged in shipbuilding. In consideration of the necessity of the then circumstances and in view of the increase of Japan's naval strength and the progress of her shipbuilding art, the law was revised in March, 1909 so as to grant bounties only for the construction of steel vessels of not less than 1,000 gross tons and put in force on January 1st, 1910. The encouragement given by the Government in the matter has been so great that by the end of 1914 there were altogether 131 vessels of 700 gross tons and upward built in Japan, aggregating 428,832 tons. Under such circumstances Japan's shipbuilders have been successful in building big warships and large ocean liners which are fully qualified to run on many important foreign service lines, and they have, moreover, built vessels to foreign orders. By the end of 1914 there were altogether 244 private shipyards and 63 private dry docks in Japan.

With respect to harbour-works in Japan, after Yokohama and several other localities had been selected as open ports in the Ansei era (1854-59), they were fitted for use as commercial ports merely by taking advantage of their natural features in making suitable accommodation for the purpose; but with the progress of the nation its foreign trade annually increased to such a large volume that the existing accommodation became inadequate; and so its extension and improvement came to be planned after a careful consideration of the actual condition of the harbour.

At present Japan possesses thirty-seven open ports, but the bulk of its trade is carried on through the two harbours of Yokohama and Kobe. Yokohama celebrated in July, 1909 the jubilee of its opening to foreign trade, while Kobe is 48 years old. Their progress is an index of the striking development of the whole country. The principal harbour-works are the following:—

Yokohama Harbour.—The harbour is enclosed by two breakwaters, one in front of the harbour extending south-east to the length of over 5,380 ft. and the other extending north-east to the length of over 6,700 ft., leaving a harbour entrance 800 ft. wide and 33 ft. deep below the lowest spring tide. The breakwaters, together with training wall of 6,090 ft. built for the purpose of regulating the river streams, encompass within the harbour a safe anchorage of about 1,230 acres. The iron landing pier is 62½ ft. wide and over 1,800 ft. long, projecting in front of the Custom House. Coupled with these engineering works, various schemes for improvements were started both on land and sea, such as the construction of private docks, sheds, and warehouses.

The equipments in the old Customs compound were also improved, and the compound covers an area of 11 acres with 12 sheds covering an area of over 11,337 sq. yds. and 9 bonded warehouses of over 7,229 sq. yds. Along the shore, a number of cranes of 1 to 10 tons and rails extending over 5 miles are provided.

The foregoing accommodation having been judged inadequate to meet the requirements of the rapidly-developing trade of this harbour, the Government again started in 1899 reclamation work and proceeded to provide quay accommodation for the mooring of a larger number of vessels, and to build more sheds and warehouses and make direct connections with the main railway lines of the Empire. In 1912, improvement work on the present pier has been entered upon.

The reclaimed ground covers an area of about 56 acres, surrounded with quay-walls and landing-stages. The effective length of the quay-walls is 5,673 ft., and the depth is from 20 ft. to 32 ft. below the lowest spring tide. The sheds in the reclaimed ground are 14 in number, covering an area of 50,308 sq. yds., and the warehouses are three-storied and 2 in number, covering 7,621 sq. yds. The rails laid are 9 miles long. 18 sets of 1.5—5 ton electric travelling cranes, and 1 set of 50 ton electric stationary crane, equipping the quay-walls, are operated through the generating-house built on the reclaimed ground. By improving the present pier, its width will be increased to 138 ft., and the water-depth of 35 ft. at the lowest spring tide will be made along either side; two two-storied sheds each covering 2,174 sq. yds. are to be constructed on the pier, the upper story being furnished for passengers' use, and the lower floor for cargoes; and the pier will be able to have two large steamers moored on each of its sides.

The whole of the reclamation work was completed in 1910. The equipments on the reclaimed ground were finished in 1914, and the improvement of the pier will be completed in March 1917, the total amount of expenditures being estimated at yen 10,484,000 (£1,073,850).

The dredging work was begun in 1890 and already about 800 acres, or nearly two-thirds of the water-area, have been dredged to the depth of from 20 to 35 feet below the lowest spring tide. It is continually being carried on to increase the dredged area and the water depth from 24 to 35 feet.

All these works are, however, judged still inadequate to cope with the steady expansion of foreign trade in this harbour, and both the Government and the general public agree in urging the necessity of starting further improvements. The railway lines on the western and northern shores of the port have already been greatly extended, with more freight terminus accommodations, and the construction of quay-walls for coast-trading vessels, the extension of the shore-lines of the Yokohama Railway Company and the Yokohama Warehouses Company, the reclamation of the foreshore outside the harbour which will be used for the sites of various factories, and the opening of a canal between Tokyo and Yokohama will be undertaken in course of time.

Kobe Harbour. The harbour is really an ideal one with many topographical advantages; but provided only with lighters' wharves, it absolutely lacked the modern equipments of a trade port in keeping with its commercial development. The Custom-house equipment in 1901 consisted of only 8 warehouses with an area of 2,911 square yards, 14 sheds with an area of 18,197 square yards, and 9 cranes ranging from 5 to 30 tons. In 1902, the Government constructed two small breakwaters in front of Onohama and the Imperial Government Railways built a branch line to connect with the harbour; but these were chiefly for the cenvenience of the lighters. It was not until 1906 that plans were made for

the construction of jetties and piers in the same harbour as a six-years' continued undertaking for the convenience of ocean steamers. and as accessory undertakings, several sheds and small piers were built at the Kawasaki wharf.

But as these works were mere makeshifts and inadequate for coping with the development of the trade of the port, new plans were made and works were commenced as undertakings to be completed in eleven years from 1907 for foreshore reclamation and land accommodation.

The new reclamation area will be 67.8 acres and there will be four moles whose quay walls will have a total effective length of 8,351 feet and a depth of from 30 to 36 feet at low tide. There will be also lighters' wharves, 1,787 feet long. Along the quays and wharves there will be 17 steel and two wooden sheds with a total area of 63,332 square yards. On the reclaimed land railway lines about twelve miles long will be built; and the quay will be fitted with 21 electric travelling cranes of from one to five tons and the wharves with five stationary hand cranes.

These works, which will cost yen 13,075,409 (£1,339,282), are expected to be completed in March, 1918.

The breakwaters which have been planned for the harbour by the Government will have a harbour-entrance 895 feet wide and 42 feet deep at low water and two side entrances; the total length of the breakwaters will be 15,211 feet, enclosing a water-area of 1,716 acres; and in 1910 the Government commenced the construction of a breakwater running 3,770 feet eastward from the side entrance above referred to in front of the Kawasaki Wharf, for the protection of the quay walls above mentioned; this breakwater will, it is believed, be completed in March, 1919 and cost yen 2,670,000 (£273,482).

About the same time as these equipments made by the Government, the Tokyo Warehouses Company began the construction of similar works at Wada and Takahama: at Wada the works begun in 1908 were an iron pier 600 feet long, 62 feet wide, and standing in water 26 feet deep at low tide, sea-walls on both sides of it with a total length of 1,842 feet, and sheds with a capacity of 26,722 square yards and warehouses with a capacity of 1,932 square yards, and 16 1½-ton cranes, and a railway of more than four miles; and at Takahama 13 acres were reclaimed, quay walls 1,704 feet long and with 27 feet of water, sheds of 17,491 square yards capacity and warehouses of 17,664 square yards and railway lines four and a half miles long, were constructed.

The private equipments in connection with the foreign trade of the port are, in addition to the above, the warehouses and sheds, aggregating 27,816 square yards, of the Kobe Pier Company at Onohama, and the warehouses and sheds of 13,248 square yards capacity of the Toshin Warehouses Company at Onohama and Higashide-machi. The latter Company has undertaken to reclaim about 8 acres in front of Onohama to construct a quay wall 1,020 ft. long and 30 ft. deep and to make necessary accommodations thereon.

# TIN MINING AND SMELTING IN THE ORIENT

In reviewing the tin production of the world for the past few years, a report of the United States Department of Commerce gives the following particulars regarding the tin deposits of Federated Malay States and China, the latter country being the third in point of production.

The greatest tin-producing region in the world is in the Federated Malay States, a colony of the British Empire, which comprises the four Federated States of Perak, Selangor, Negri Sembilan, and Pahang, and the three native States of Kedah, Kelantan, and Trengganu, in the Malay Peninsula. These States have a total area of nearly 43,000 square miles. The Department of Commerce monograph by D. C. Alexander, Jr., on Mining in the Federated Malay States, contains some facts concerning the tin mining which may here be set down.

The tin is usually found in the form of cassiterite, an impure stannic oxide ($SnO_2$), and was undoubtedly originally deposited in the metamorphic granite of the mountains and hills of this region. Lodes of the ore are found in many places in the granite in the form of an onyx quartz, and the working of this quartz has been frequently undertaken. However, the quartz workings have seldom been successful, since the profit derived from them compares very unfavorably with what can be earned from even the low-grade alluvial deposits. It is generally held by mining engineers of this district that quartz workings will not become numerous or profitable until all but the very lowest grades of alluvial deposits have been exhausted, which will probably not be for another 25 or 30 years. Moreover, should large alluvial deposits of tin ore be found in the recently acquired Provinces of Kedah, Kelantan, and Trengganu, where prospectors are at work, the day of the quartz working will be further postponed.

On the other hand, there are a few quartz deposits so rich that thoroughly experienced miners have not hesitated to erect the expensive mills necessary for working them. One such plant is that of the Menglembu Lode Syndicate, near Ipoh. Another mill was erected recently near Bentong, Pahang. Moreover, the Government of the Federated Malay States agreed several years ago to a proposal of the Mine Owners' Association that reductions of not more than 50 per cent of the export duty on tin and tin ore should be granted to miners able to show that the properties which they are working are of so low a grade that a reasonable profit can not be earned if the full duty is exacted. This measure was expected to have the effect of encouraging quartz mining.

The alluvial deposits of tin ore are very widely scattered, but the richest are usually found lying close to the slopes of hills or mountains, narrow valleys being most productive. This is easily explained on the theory that the disintegrated granite which contains the tin was washed down the slopes by rains and streams, and the tin ore, because of its weight, remained in pockets close under the slopes, while the sand that accompanied it was carried to a greater distance. That the streams in the valleys carried away the granitic sand and continuously deposited silt is shown by the fact that the richest ore is found in beds of clay.

The famous and wonderfully rich Kinta Valley of Perak is an excellent example of the formation described. The valley is about 30 miles long, with an average width of 5 to 6 miles, and the hills on either side rise to an elevation of 300 to 400 feet. On the west side of the valley the granite of the hills slopes down until it meets the limestone floor, while on the east side of the valley the hills are flanked by cliffs of limestone outcrop. The Kinta, Sorakai, and several smaller streams flow through the valley. The richest ore deposits lie on the west side of the valley; but the east slope has what the west slope lacks—an abundant supply of water, by means of which the lower grades of ore can be profitably worked.

### Smelting Plants in Straits Settlements—The Export Duty

The two plants that smelt most of the tin ore produced in the Federated Malay States are situated in Straits Settlements. It is said that over 80 per cent of the tin ore exported is smelted either in the smelter of the Straits Trading Co., at Singapore, or that of the Eastern Smelting Co., at Penang; these smelters also receive a small amount of ore from Australia and South Africa. Such of the Federated Malay States ore as is not smelted in the Straits Settlements goes to England, the following provision of the customs tariff making it impossible to ship the ore to other countries for smelting:

Export duty, tin ore, 70 per cent of the duty on tin, with, in the case of tin ore exported otherwise than under such guaranties as the Resident may require, that it shall be smelted in the Straits Settlements or United Kingdom, an additional duty of Straits $30 per picul ($285 United States currency per long ton).

The export duty on block tin, provided by the same tariff, is Straits $10 per bhara (400 pounds) when the price of tin does not exceed Straits $41 per picul; but when the price exceeds $41 per picul the duty per bhara is increased by $0.50 for every $1 by which the price of tin exceeds $41 per picul.

### Exports During Recent Years

Accoring to a report submitted by American Vice Consul Caspar L. Dreier, at Singapore, the total export of tin from the Federated Malay States during 1914 amounted to 49,042 tons, as compared with 50,128 tons in the previous year and 48,250 tons in 1912. The war, this report states, had the effect of restricting somewhat the output of tin. The total decrease, compared with the preceding year, is given as 18,220 piculs (1 picul=133⅓ pounds), the decrease in value being $2,048,621 United States currency. Perak, as the largest producer, shows the largest decrease, this being 14,215 piculs, with a decrease in value of $1,225,820. The total output of tin during 1913 was 842,129 piculs, and during 1914, 823,-909 piculs.

### China is Third in Production.

Annual reports for 1914, give the exports of tin in slabs from the whole of China (excluding Hongkong, a British possession) during that year as 7,948 tons, of a value of $5,578,992, as compared with 9,245 tons, of a value of $8,094,886, during 1913. In 1914 there were no exports of tin to the United States from the ports of China other than Hongkong, and in 1913 such exports amounted to only $5,288.

China ranks next to the Federated Malay States and Bolivia in the production of tin. Nearly all the supply is brought from Yunnan to Hongkong, where it is refined and shipped to Europe and America or distributed to the Chinese market. The output of Yunnan is now hampered by limited water supply, difficulty of transport, and the high cost of fuel and food.

German interests have constructed a tin-refining plant at Ko-Chiu to turn out 50 tons of standard tin per day by coal-gas furnaces. It has never been fully worked, as all the coal has to be transported from Pi-Chi-Chai by mules, but as soon as the branch line is built coal will be plentiful, and if water can be had the output will probably exceed 50 tons per day, as at present (1913) without a refinery the output is over 30 tons per day from the native smelters, which turn out tin averaging 84 per cent pure, to be shipped to Hongkong for refining in native furnaces. Tin is found from the east side of the range, about 8 miles from Meng-tze, to the western bank of the Red River, an area 24 miles wide by about 50 miles long.

During 1913 the output of tin from the Yunnan mines was placed by the trade at about 14,000 tons, as compared with about 10,000 tons in 1912.

New tin mines in South China are to be developed in the new British territory, the Kowloon extension, according to Vice-Consul General A. E. Carleton, of Hongkong. Some 40 shafts have been sunk, and tin has been obtained from every one of them in quantities, it is claimed, that leaves no doubt of the remunerative nature of the enterprise; in fact, a Straits company is prepared to take any quantity of the unsmelted ore at about $735 per ton. It is proposed to operate the tin-bearing soil by dredges.

### Exports from Hongkong

In 1914 Hongkong exported to the United States tin slabs to the value of $769,538, as compared with $1,632,213 in the preceding year, according to a report submitted by Consul General Anderson. The values of the 1911 and 1912 tin exports to this country were $798,941 and $1,404,115, respectively. The exports previous to 1911 were too small to merit separate enumeration in the returns.

Consul General Anderson says that exports of tin from Hongkong to all parts of the world fell off about one-third during 1914, as compared with the preceding year. The figures of the Hongkong General Chamber of Commerce indicate that the shipments of tin in slabs of 112 pounds each during the three most recent years for which statistics are available have been as follows:

| Destination. | 1912 *Slabs.* | 1913 *Slabs.* | 1914 *Slabs.* |
|---|---|---|---|
| United | 27,551 | 36,790 | 24,699 |
| Great Britain | 24,752 | 8,047 | 5,644 |
| Continental Europe | 63,772 | 32,575 | 20,895 |
| Total exports | 116,075 | 77,412 | 51,238 |

It should be stated that these figures are to a certain extent misleading, in that a large portion of the tin consigned to Europe is consigned with the option of New York and is diverted to the United States while en route to Europe. These exports are credited to Europe but are really destined for the United States in the first place.

In China itself, Consul General Anderson reports, there is a decrease in the use of tin for ceremonial purposes that is reflected in the decreasing imports, while the increased sale of Chinese tin abroad, due to widening sales connections and increased demand, is more than taking up the large increase in production. The tin refined in Hongkong is almost entirely from the mines in Yunnan and Kwangsi Provinces in China. The refining business in Hongkong is controlled by a few firms who operate in connection with a combination of buyers working with Government interests in Yunnan in a way practically to control the output. The tin situation in Hongkong, Mr. Anderson says, can be controlled by these interests at any time, but export prices are fixed, of course, upon the basis of the world's markets.

### Dutch East Indies—Australia—Other Countries

In the Dutch East Indies there are important tin deposits, chiefly on the islands of Banca and Billiton. Consul B. S. Rairden, at Batavia, Java, reports that the production of the Banca tin mines in 1914 amounted to 225,284 piculs (about 15,319 short tons). During the preceding year there were sold at public tender in Batavia 66,000 slabs of tin, each weighing 74.8 pounds, totaling 4,938,800 pounds, at an average of $0.4261 per pound.

Australia in 1914 exported $1,334,939 worth of tin, as compared with $3,262,594 in 1913. Some of the chief tin mines are in Queensland and the production in that State in some representative years since 1881 has been as follows: 1881, 3,456 tons; 1891, 2,236 tons; 1901, 1,661 tons; 1906, 4,823 tons; 1907, 5,140 tons; 1908, 4,825 tons; 1909, 3,326 tons; 1910, 2,053 tons; 1911, 3,091 tons; 1912, 3,230 tons; 1913, 3,197 tons.

In addition to the countries previously discussed, tin is found in Japan, Korea, Siam and British Burma but the production is comparatively insignificant.

## CHINA'S LEATHER IMPORTS

The importation of leather and leather manufactures into China has steadily increased in recent years. Among the reasons for this were the purchases of new equipment for China's army, including boots, shoes, belts, etc.; the establishment of cotton, silk, and flour mills, which has created a demand for belting; and the adoption of the Western style of dress by many of the Chinese, with incidental purchases of shoes, trunks, bags, and other articles. Although a few tanneries have been established in the coast and principal cities, and, to some extent, in the interior (one of some importance in Szechwan Province), they have not been, thus far, very successfully operated. Various causes are responsible for this condition, poor business management and a lack of proper technical knowledge of the trade being predominant. There are indications that China will continue to have a great part of its leather needs supplied from abroad for some time.

The net imports of leather, and belting and leather manufactures into China for the years 1911-1914 were.

| Articles | 1911 $ | 1912 $ | 1913 $ | 1914 $ |
|---|---|---|---|---|
| Leather | 2,849,004 | 4,585,785 | 5,323,170 | 4,174,142 |
| Manufactures | 277,466 | 280,680 | 271,773 | 224,939 |
| Belting | 105,999 | 118,090 | 191,550 | 194,011 |
| Total | 3,232,469 | 4,984,561 | 5,786,493 | 4,593,092 |

The percentages of imports from various sources for 1913 and 1914 were:

| Articles and sources | 1913 *Per cent* | 1914 *Per cent* |
|---|---|---|
| Leather: | | |
| Hongkong | 83.07 | 84.07 |
| Japan | 8.83 | 9.03 |
| United States | 1.67 | 1.17 |
| Russia | 1.48 | 2.08 |
| Belgium | .88 | .46 |
| United Kingdom | .55 | .55 |
| Germany | .52 | .45 |
| Other countries | 3.00 | 2.19 |
| Leather manufactures: | | |
| Japan | 44.27 | 44.28 |
| Hongkong | 23.33 | 22.73 |
| United Kingdom | 12.50 | 12.23 |
| Russia | 11.73 | 15.34 |
| United States | 1.22 | .93 |
| Austria | 1.65 | 2.37 |
| Other countries | 5.30 | 2.12 |
| Machine belting: | | |
| United Kingdom | 51.93 | 50.51 |
| Japan | 21.62 | 19.91 |
| Germany | 11.62 | 10.70 |
| Hongkong | 4.41 | 5.60 |
| United States | 2.98 | 4.50 |
| Russia | 3.29 | 5.63 |
| France | 3.21 | .14 |
| Belgium | .34 | 2.63 |
| Other countries | .60 | .38 |

A large proportion of the leather imported into China is transshipped at Hongkong, and it is therefore impossible to ascertain its origin from the Chinese maritime customs statistics. Undoubtedly the greater part of it comes from Singapore, and the remainder from various European countries. Japan's share of the trade is also very large, particularly in leather manufactures. Its proximity to China, the low cost of production, and the opportunity for prompt deliveries are largely responsible for this condition.

The imports of leather and articles of leather manufacture into Shanghai, for 1914, were: Calf, kid and colored, $76,861; cow, American and European, $2,433; cow, Hongkong and Straits Settlements, $220,151; cow, Japanese, $53; enameled, japanned, and patent, $10,273; harness, $28,517; sole, $61,900; others, $13,390; chamois, $1,420; total value, $414,998.

There has been considerable trade in boots and shoes. China imported, in 1914, 227,174 pairs, valued at $392,810. Of this amount 65.8 per cent came from Russia, 11.21 per cent from Japan, 7.55 per cent from the United Kingdom, 7.46 per cent from the United States, and 4.2 per cent from Hongkong.

Three tanneries are established in Shanghai, operating with but moderate success. The principal one is controlled and operated under foreign supervision; the others are managed and capitalized by Chinese and Japanese, respectively. The manager of the foreign-controlled tannery frankly admits that it has not had a successful year, chiefly on account of the difficulty of obtaining tanning extracts, which heretofore had been mostly supplied from France and Italy.

There is little demand for harness leather. This was supplied before the war largely by Great Britain, at $0.48, United States currency, per pound. It is claimed that American harness leather is not suitable for use here, being too hard.

### Shipments from United States Curtailed

Some years ago American leather was largely shipped into China, but the Japanese gradually displaced it to a large extent, though it is claimed that a fair percentage of the leather which Japan sends here was originally exported from the United States. This particularly applies to leather of superior quality. It is understood that shipments of American leather to China have been curtailed through the following causes: (1) The lack of representatives in this market; (2) not sending samples, which the Chinese invariably demand; and (3) the high price of American leather.

There is at present an opportunity for American leather manufacturers to canvass this market, chiefly on account of the elimination of certain supplies from Europe. The lack of shipping facilities and advanced tonnage rates are troublesome obstacles to be overcome.

## THE NORTH CHINA DESK HONG LIST

The North China Desk Hong List for 1916 which has just been issued from the Press of the North China Daily News and Herald, Shanghai, has continued to improve in the 1916 edition as in former years, by a more comprehensive covering of its territory and the inclusion of many hundreds of names that might have been overlooked in less accurate canvasses. Beside the business lists of Shanghai, Hankow, Tientsin, Peking and all the outports of the coast and in the Yangtsze Valley, the Hong List has also gone over into Manchuria to compile lists from Antung, Changchun, Harbin and other cities. Aside from its service to the business man, a feature of the Shanghai section of the directory is a list of residences according to streets and the alphabetical residential directory instituted last year. The practice of listing Railroads in a separate section with names of their officers, has been followed again this year and is a great convenience.

The directory of missionaries has been further subdivided according to religious groups, Protestant missions and Roman Catholic missions being segregated, and the list has been much enlarged by the inclusion of the many small mission centres which had been overlooked in previous issues. Taken as a whole and in connection with its lists of residences in the out-ports, the 1916 Hong List furnishes a speedy method of locating any foreigner even though the address be so vague as merely China.

# ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

## RAILWAYS

**The Canton-Hankow Railway.**—Construction work on the Canton-Hankow railway has continued despite the war, though the great conflict will cause a suspension of activity before long owing to the exhaustion of finances. It will be impossible to push on to completion the section from Wuchang to the border of Kwangtung province, where it is to join with the section being constructed from Canton northwards, but connexion will at all events be made between Wuchang and Changsha, the capital of Hunan Province, a distance of some 225 miles. This link is expected to be forged by the end of this year at latest, with the exception of a few bridges where ferries will have to be used. Bridging is going to prove difficult even under most favourable conditions of finance and purchase of materials, the rise of water from navigable low water to flood height being some forty feet, and thus necessitating extremely high structures.

Already thirty-five miles of rails have been laid south from Wuchang (or Hsu-chia-pang, where the workshops are on the Yangtsze, five miles from Wuchang) and construction trains will shortly operate until a regular service can be introduced. By the end of March it is expected that 52 miles of line will be completed.

**Peking-Jehol Railway.**—As the Peking-Jehol line is important strategically to link up railway communication between the interior of China and Mongolia the Government according to Chinese press reports, has despatched engineers to make a complete survey of the line, whose estimated cost is approximately $12,000,000. The programme of construction is as follows:—The work to start not later than in June, 1916; the whole line to be completed in three years. The line is to be divided into three sections—(1) from Peking via Shunyi to Miyun, (2) from Miyun to Kupeikou, (3) from Kupeikou via Luanping to Jehol. The construction cost is to be defrayed from the surplus funds of the Peking-Mukden and the Peking-Hankow railways, in three yearly instalments, viz: $4,000,000 for the first, $3,000,000 for the second, and $5,000,000 for the third year.

Mr. Chang Pei-chun, of the Communications Ministry, Peking, accompanied by Mr. Ying-jui, of the Board for Mongolian and Thibetan Affairs, and a number of railway engineers, visited Mukden early in March. After consulting with the Mukden Government authorities, they started northward to survey the proposed route via Jehol and Chihfeng.

**Hangchow-Hweichow Project.**—Efforts are again being made to revive the project to build the extension from Hangchow to Kuangteh and Hweichow in Anhui Province which has already been surveyed. The Chekiang and Anhui promoters of the line, according to the *North-China Daily News*, have appointed a representative to talk the matter over with the Shanghai-Hangchow-Nanking Railway officials. When this railway is built, it will bring Mokanshan summer resort within a few hours of Shanghai and may pass near enough to the Shanghai Municipal Pingchiao quarry to transport the stone to Hangchow and Shanghai. Attempts will be made to induce the Government to hasten the building of this line.

**Chefoo-Weihsien Railway.**—Telegraphic advices from Tsinan say that arrangements have been made for raising the capital required for the construction of a railway between Chefoo and Weihsien and that work will be started in May, according to an announcement made by the Chinese. The cost of the line has been estimated at $10,000,000. Recently, the ministry has advised the Chefoo chamber of commerce that of the estimated cost, $1,000,000 shall be borne by the general chamber of commerce in Chefoo, $1,000,000 by the proposed railway, $2,000,000 by the province of Shantung, $2,800,000 by other provinces, totalling $6,000,000. The remainder of $3,200,000 will be financed by the ministry of communications.

**New Amur Railway Facilities.**—The Transbaikal railway authorities announce the running of one through train over the new Amur Railway through Blagovestchensk direct to Haborovsk from May 1. Passengers will be able to reach Vladivostok from towns in Russia without having to pass through Manchuria. The putting together of the new 30-ton American freight cars is progressing satisfactorily in Vladivostok so that the car famine soon will be over.

**Kaifeng-Honan Line.**—Railway construction westward is proceeding apace. Old bridges are replaced. In a short time trains will run both day and night between Hsuchow and Kuanint'ang west of Mienchi. This is a 35 stage run. Beyond Kuanint'ang are the long tunnels, and it will be two years before trains can go further. At present travellers stop at Kaifeng over night, but in a short time the train will go through direct. The limited supply of rolling stock now available is taxed to its utmost. The trains are so packed that often sitting room is out of the question, even the platforms between the carriages being thronged. The train passes by intermediate stations as there is no further room for the accommodation of travellers.

**Broad Gauge in Japan.**—A Japanese news agency states that the sum necessary to rebuild the railway as a broad gauge between Tokio and Shimonoseki is Yen 254,000,000 while the estimate for the repairs of the line is Yen 238,000,000. Therefore the Imperial Board of Railways of Japan has decided to effect the rebuilding of the line as a broad gauge railway and is waiting only the sanction of the government.

**Yokohama Elevated Progresses.**—Construction work on the elevated line of the government railway between Yokohama and Sakuragi-cho stations, which was started immediately after the new year, has been making rapid progress. The concrete foundation work for three bridges is nearly completed. The old Yokohama station will be reconstructed for the new line.

**S. M. R. Traffic Returns.**—The South Manchuria Railway Traffic Returns for February totalled Y1,915,304.89, a daily average of Y66,045, being a decrease of Y635,002.62 for the whole month and Y25,037.41 per day, as compared with February 1915. The total Traffic Receipts of the fiscal year to February 29th amounted to Y22,248,345.27, and the net increase over the corresponding term of the preceding fiscal year increased to Y532,409.07.

**Federated Malay States Railways.**—The extension of the Federated Malay States railway system towards Bangkok, has resulted in the opening of traffic from Prai to Alor Star a distance of 56 miles 18 chains. The position of the rail head now is the 84th mile and the earthwork is completed up to the 90th mile. A further extension of the railway it is expected will be open to traffic in January 1917 to Aro Station at the 80th mile. It is estimated that the F. M. S. section of the Bangkok extension will be completed about the middle of 1917, the distance to boundary station of Siam being 98 miles. The staking out of the Siamese section, Ootapao to Perlis boundary, was completed some months ago in continuation of the F.M.S. section, Alor Star to Perlis-Siamese boundary, and it is understood good progress has been made with the construction throughout. The junction station on the boundary is at Padang Besar, and it is anticipated that through communication between Prai and Bangkok will be established for passenger and goods traffic some time in the latter half of 1917. The passenger and goods traffic to and from Prai and Alor Star has come up to the Railway authorities' anticipations for the period during which the line has been open and the train service will have to be increased as soon as additional locomotives and carriages are obtainable from home. The new line is paying remarkably well, not only 3rd class carriages being fully taken advantage of, but the 1st class also often are full.

It has been decided that the extensions at Prai should be left to the F.M.S. Railways, as the government was unable to finance them sufficiently to make Prai a successful port. The remodelling of Prai passenger station is well in hand, and the doubling of the line from Bukit Mertajam to Prai completed. Plans for remodelling the goods yard and extending the wharfage accommodation have been submitted to the Consulting Engineers in London, and their report is now under consideration. It is hoped to provide wharfage for ocean-going traffic as the future of Penang is largely bound up in the proper development of Prai and the neighbouring foreshore, which should eventually become to Penang in a smaller way what Kowloon has become to Hongkong. Prai cannot help becoming an important centre of trade as the Peninsula develops, and the more facilities provided for the economical handling of a large trade the greater the gain of the port will be.

**Philippine Railroad Project.**—The Philippine Legislature has conferred a franchise for the construction of a railroad in the island of Negros, to do a general transportation business, but more particularly to improve the facilities for handling the sugar output of this the most important cane-growing district in the islands; and incorporation papers have now been taken out for a company to undertake the construction of the road. The incorporators are all Filipinos, the first project of the kind in which this has been the case.

The name of the company is the "Ferrocarril Agricola Pulupangdan-Isabela;" that is, the Pulupangdan & Isabela Agricultural Railway Co. The line is to run between these two places, the former of which is on the seacoast and is a somewhat important point for shipping sugar to Iloilo, while the latter is the center of one of the richest sugar-producing

districts of the Province of Occidental Negros. They are about 40 miles apart.

The road is to pass through the towns of La Carlota, La Rama, Zaragoza, La Granja, Danao, and Castellana, all of which, and especially La Carlota and La Granja, are of importance for their sugar product; and authority has been secured to construct such feeder lines as may be necessary. The district thus tapped has an estimated population of 110,000, and it is computed that it should at present yield 70,000 tons of freight a year, and probably more as the sugar acreage is extended.

The company is also authorized to operate boats for handling sugar shipments from any port in Negros to Iloilo, which, though not on the island of Negros, is a port of entry and the center of the Negros sugar trade.

The authorized capital of the new company is 500,000 pesos ($250,000), divided into 2,500 shares of 200 pesos, ($100 each). Of this amount 20 per cent has already been subscribed by the incorporators, and 25,000 pesos ($12,500), or 5 per cent, has been paid up. The head offices will be for the present in Iloilo.

## SHIPPING

**New U. S. Ship Line to Orient.**—A telegram from New York has been received at Shanghai to the effect that a new steamship company has been organized with a capital of $5,000,000, U.S. Currency. Fourteen ships have been purchased and it is the intention of the new company to operate on both the Atlantic and Pacific Oceans. These ships will fly the American flag.

**New Dollar Steamer Strathardle.**—Capt. Robert Dollar, Head of the Dollar Steamship Co., has just purchased the British steamer Strathardle from Messrs. Burrel and Sons, Glasgow, and will bring the vessel out to Shanghai shortly to operate a trans-Pacific service between Vancouver and the Orient. The Strathardle is of 2,829 tons net and was built in Dumbarton in 1910.

The above vessel will be successor to the Company's Robert Dollar, 5,356 tons gross, which, according to a report, has recently been sold, (the new Japanese owner says, for Y.280,000; actual sale price is stated in Shanghai shipping circles at Gold $1,000,000) for delivery in April next at Vladivostok.

**T. K. K. Plans Big Ships.**—Directors of the Toyo Kisen Kaisha have voted $18,550,000 for a shipbuilding yard and seven new transpacific steamers, of which two will be the largest and finest passenger ships on the Pacific, having a displacement of 25,000 tons each and a passenger capacity of 1,000. They will be of the *Manchuria* and *Mongolia* type, recently sold by the Pacific Mail Co., and will run from Japan via Hongkong to San Francisco. The company's new shipyard will build all of the steamers and will be located either at Yokohama or at Shimonoseki. The five smaller steamers will be of 10,000 tons each and will operate in the San Francisco, South American, Orient trade of the company. Bonds for the entire enterprise will be issued in Japan.

The difficulty that confronted this company for a long time was the payment of its debt. The amount of debt of the company was 7,630,000 yen in all last year, and of this 1,750,000 has been paid. It is quite possible that 2,000,000 yen or 2,500,000 yen of debt will be redeemed within the next six months and practically all of the debt will be cleared off at the end of this year. If these expectations are realized the company will have property valued at 40,000,000 yen, with a paid up capital of only 9,750,000 yen, the prospect of a fair profit and no debt.

**Refloating the P. & O. Nile.**—The Mitsu Bishi Dockyard is engaged in recovering Y.3,000,000 from the sea in the shape of the P. & O. S. Nile which sank off Iwaijima, Suho province, in the Inland Sea. The water at this spot is 30 fathoms. Mr. Yamashina Reizo bought the ship, as she lay, for Y.9,000. He succeeded in recovering about 800 bales of Shanghai cotton and sold the steamer to the Mitsu Bishi Dockyard for Y.13,000. The Dockyard is said to have expended Y.350,000 on preliminaries to the work, but expected to make Y.3,000,000 at the present high prices of steamers. Several ship owners and brokers are bidding for the vessel, offering up to 1,600,000 yen. The company is working hard day and night with twenty-five salvage vessels to refloat the sunken vessel.

**Japanese Tramp Steamers.**—The latest statistics give the number of Japanese tramp steamers as 238 with aggregate gross tonnage of 559,537, including 94 of 257,542 tons engaged in ocean-going services as follows:—

| | No. | Tons |
|---|---|---|
| Chartered to Japanese............ | 50 | 147,322 |
| „ „ Foreigners......... | 36 | 125,564 |
| Employed on Shipowners' account.............................. | 8 | 24,556 |

**Japan's New Shipbuilding Yard.**—It is reported that the shipbuilding yard promoted by Mr. Soichiro Asano and other business men is to be established in the compound of the Yokohama Dockyard Company as a joint undertaking between the dockyard company and Mr. Asano and others. Of the capital of the proposed undertaking which is fixed at 4,000,000 yen some 70 per cent will be taken by Mr. Asano and other business men and 30 per cent by the Yokohama Dockyard Company.

**Formosa South Sea Line.**—The Osaka Shosen Kaisha will open a new line to the South Sea Islands, starting from Keelung, Formosa. They will receive a subsidy of 100,000 yen from the Formosan government. Two vessels, the Kim Maru, 3,284 tons, and the Neshu Maru, 3,376 tons, are selected for service on the new line. The first vessel will leave Keelung April 1 and after calling at Amoy, Swatow, Hongkong, Singapore, Java, Celebes, Borneo and Manila will return to Keelung.

**Japan Sells Russia Warships.**—The Japanese papers now say that the three Japanese warships Tamba, Soya and Sagami, which were reported to have been sold to the Russian government, will be delivered to the Russian navy at Vladivostok some time toward the end of this month. These vessels were captured in the Russo-Japanese war and the sale price is said to be upwards of 10,000,000 yen.

**Philippine Owners Selling Ships.**—Although the attorney general has ruled, in a decision, that local shipowners are liable to a fine of not more than P25,000 for selling, leasing, or otherwise disposing of vessels owned by them and operated in the interisland trade, when such sale, lease, or disposal will deprive the people here of their services as common carriers, the government has no intention of initiating prosecutions. Six large steamers already have been taken from the Island runs.

**Dutch Liners to Philippines.**—Because of the great demand for freight space out of Manila, the Java Pacific Lyn has ordered another steamer to call at Manila. The Tjimanoek will arrive about the first of April and will be dispatched for San Francisco via Hongkong and Nagasaki about the fourth.

## TRADE AND COMMERCE

**India's Wheat Exports Decrease.**—Exports of wheat from India show a decided falling off for the second time in two years from the crop of 1913-14, and the probability is that the 1915-16 output for the overseas trade will be less than 700,000 tons. Last year the complete figures showed exports of 705,000 tons, a decrease of 500,000 tons from the year before. Up to January, exports of the present crop were only 650,000 tons and as the bulk of the crop already had been shipped at the end of September, the last few months have shown negligible quantities exported, indicating that the market has been swept bare. The banner year for Indian wheat was 1912-13 when 1,660,000 tons were shipped. The bulk of this year's crop went to Great Britain including 533,400 tons valued at R 68,900,000 bought by the Government.

**India's Crop Forecasts.**—The following is a summary of the various crop forecasts relating to the season 1915-16 issued by the Department of Statistics, India, and published in the *Indian Trade Journal* on the dates mentioned in the last column:—

| Crop. | Estimated Area. | Per cent of preceding year. | Estimated outturn. | Date of publication |
|---|---|---|---|---|
| | Acres | | | |
| Sugar-cane. | 2,375,000 | 103 | 2,636,000 tons. | March 3, 1916 |
| Sesamum. | 5,185,000 | 94 | 480,000 tons. | Jan 28, 1916 |
| Cotton. | 17,967,000 | 73 | 3,819,000 bales | March 3, 1916. |
| Indigo. | 314,300 | 212 | 39,900 cwts. | Dec. 31, 1915. |
| Rice. | 76,792,000 | 100 | 32,877,000 tons. | March 3, 1916. |
| Ground-nut. | 1,935,000 | 80 | 1,011,000 tons. | Feby. 25, 1916. |
| Wheat | 28,244,000 | 88 | ... | Jan. 7, 1916. |
| Rape and Mustard. | 3,560,400 | 55 | ... | Jan. 7, 1916. |
| Linseed. | 2,705,700 | 81 | ... | Jan. 7, 1916. |

**London Hemp Market.**—At the auctions held in London on January 26, Indian hemps received by far the most attention. Demand was brisk for these, and the market ruled strong with high prices realised, while in the case of Manila grades practically the whole of the offerings were withdrawn, but where business resulted steady prices were paid. Of 2,893 bales of East Indians offered 1,450 bales sold, and fine dressed changed hands on the basis of £48 to £49, while of 1,205 bales of Manila offered only eight bales were disposed of.

**France's Silk Production.**—The following figures, published in the *Journal Officiel*, show a notable decrease in the production of raw silk in France since the out-break of the war:—

| | 1913. | 1914. | 1915. |
|---|---|---|---|
| Total number of silkworm rearers | 90,517 | 83,825 | 43,327 |
| Quantity of "seed" (eggs) incubated, in ounces of 25 grams each. | 125,678 | 108,943 | 49,182 |
| Production of cocoons (unstoved) in kilogrammes ... ... ... | 4,423,046 | 5,067,392 | 1,727,326 |
| Value in francs | 15,655,016 | 19,908,930 | 4,243,027 |

It must be observed that the French silk harvest of 1914 was completed at least a month before war was declared.

**Calcutta's Hide Exports.**—The statement below shows the quantity (pieces) of raw cow-hides exported from Calcutta to the United Kingdom, the Continent, and America from 1912 to 1915:—

| | To United Kingdom. | To Continent. | To America. | Total Hides. |
|---|---|---|---|---|
| 1915 | 408,603 | 4,102,949 | 1,322,216 | 5,923,768 |
| 1914 | 154,211 | 5,676,395 | 343,096 | 6,173,702 |
| 1913 | 17,530 | 6,981,947 | 261,060 | 7,260,537 |
| 1912 | 39,583 | 7,812,626 | 801,221 | 8,653,430 |

The sales effected by public auction at London during 1915 have been 50,584 hides, against 1,075 in 1914 and *nil* in 1913.—*Indian Trade Journal.*

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**World's Rubber Yield.**—The following estimate of the world's production and distribution of rubber (in tons) during 1915, pending the receipt of further official figures, as published in the *World's Rubber Position*:—

Production:—Plantation, 106,136; Brazilian, 37,220; Rest (including Central American, African and Mexican), 16,625; a total of 159,981 tons.

Distribution:—America, 97,000; United Kingdom, 17,981; Russia, 13,000; France, 11,000; Italy etc., 7,000; Canada, 3,600; Japan and Australia, 2,000; Scandinavia, 2,400; Germany, Austria-Hungary, etc., 6,000. The world's production of rubber for 1916 is estimated at 194,000 tons—comprising of plantation 140,000, Brazil 37,000 and the rest (including Central American, African and Mexican) 17,000 tons—the percentage increase over last year being 21.2.

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**Siam's Trade for 1915.**—According to a report by Mr. H. Fitzmaurice, the British Vice-Consul of Bangkok in the Board of Trade Journal, the outlook for trade with Siam is promising.

Exports of rice were very heavy, and this, following on the record year 1913-14, should, under normal circumstances, have re-acted favourably on the import trade. Owing, however, to the war in Europe, all anticipations were upset.

At the outbreak of the war there was naturally great nervousness as to the financial effect it might have, especially as it followed so closely on the local financial troubles experienced at the end of 1913 and beginning of 1914. For a time all confidence in the bazaar was shattered, and not only were importers afraid to deliver goods and take fresh orders, but a great many native buyers were disinclined to give new orders. The importers quickly realised, however, that to avoid catastrophe it was necessary to continue credit business, and this was generally done, with the result that confidence was restored fairly rapidly.

As indicated, orders and shipments were greatly curtailed for a time and imports of bazaar goods, more particularly cotton goods, suffered accordingly. Despite these reduced imports, however, at no time since the war started has there been anything approaching a shortage in stock of cotton goods.

This was no doubt due to the large stocks held both by European importers and in the bazaar when the war broke out. Until recently, dealers have shown an increasing tendency to order liberally, especially in piece-goods, but unless new crop prospects improve before long a dull market is likely to be experienced, and the bazaar may suffer in consequence. The colour difficulty (due to the shortage of supplies of aniline dyes) is likely to be of great importance, and there is increasing difficulty in securing many lines of coloured goods.

One result of the war will be to create healthier trade conditions than have been the rule for some years past. Enemy countries will no doubt make great efforts to regain lost trade, but it seems likely that they will not be financially capable after the war of extending credits in their former liberal manner.

It may be mentioned that many lines of British goods are at present only obtainable at very high prices, while all European goods are considerably affected by the high rates of freight now ruling, and both imports and exports at Bangkok will be bound to be adversely affected in consequence. The high prices that now have to be paid for most metals may also influence seriously the volume of imports in 1915-16.

# FINANCE

**Philippine Agricultural Bank.**—As the recently enacted law which makes provision for establishment of a national bank contemplates absorption by that institution of the present agricultural bank, the affairs of the latter furnish a subject of more than passing interest. The following figures are of recent date and give a comprehensive idea in brief form of the status of the agricultural bank:—

| | |
|---|---|
| Loans outstanding to date... ... | P5,240,710.00 |
| Loans authorized to date and not yet paid ... ... ... ... ... | 346,650.00 |
| | P5,587,360.00 |
| Average for last five years P7,347,300.00—50% allowed ... | P3,673,650.00 |
| Capital ... ... ... ... ... ... | 1,000,000.00 |
| Net profit December 31, 1915 ... | 869,269.73 |
| 48/90 of profit last quarter, P83,218.66 ... ... ... ... ... | 44,383.28 |
| | P5,587,303.01 |

It is understood that applications for loans amounting to in the neighborhood of P1,000,000 have been passed on but not authorized, as there are no funds available to make them. The above figures show that on the date this statement was prepared loans amounting to P346,650 had been authorized but not actually made, for the reason, doubtless, that cash was not immediately available for the purpose. The average deposits are shown to amount to P7,347,000, of which 50% may be invested in real estate mortgages. In addition, the capital and profit accumulations are also available for the purpose. As the assets are to be taken over by the new institution, the regulations governing the national bank will naturally modify the provisions under which the agricultural bank has operated.

# MINING

**Japan's Foundry Enlarging.**—The Japanese Government plan to enlarge the scope of the Steel Foundry in Kyushu with a fund of Y.87,000,000, the work to be spread over five consecutive years, has been sanctioned by the Diet. Mr. Kataoka, chairman of the Budget Committee of the House, announced that the committee had adopted the bill in its original form. Mr. Chuzo Mizuchi, of the Seiyukai, asked about the proceeds from the iron foundry after the proposed expansion. Mr. Kono, Minister of Agriculture and Commerce, said it would be about 5,000,000 yen annually. Mr. Shoichiro Yoshiuye, of the same party, said he had no objection to any expansion of the government foundry. He was however dissatisfied with the proposed expansion which he feared would fail to meet the increasing demands for iron in this country. Although the government foundry, according to the government's plan, would be able to produce iron materials of 600,000 tons annually when the proposed scheme is completed six years hence, yet the demands for iron would increase to more than 2,000,000 tons annually by that time. He asked why the government did not encourage individual capitalists to undertake iron foundry business at this opportune moment. He charged the government with having no fixed policy for this purpose; it was simply thinking how to increase the income of the Imperial Government Iron Foundry, even at the expense of private concerns.

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**Plan New Steel Works.**—Another plan for the augmentation of steel supplies is reported to be afoot among the proprietors of the Kamaishi Iron Mine in Japan. The chief expert of the mine is collecting machinery for the extension of the old plant, in which the proprietors will place Y5,000,000 more. The addition will be built and in full operation by June.

The annual production of the mine when the whole plant is in operation is estimated at 120,000 tons of pig iron and 80,000 tons of steel.

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**F.M.S. Tin Exports.**—The following is a statement of block tin ore exported, approximate value in Singapore, during the year 1915 compared with corresponding period of previous year.

| | Block Tin. 1915 *piculs | Block Tin. 1914 *piculs | Tin Ore (70 per cent. of gross weight) 1915 piculs | Tin Ore (70 per cent. of gross weight) 1914 piculs |
|---|---|---|---|---|
| Total... | 73,404 | 61,179 | 711,097 | 762,730 |

| | Total Tin 1915 piculs | Total Tin 1914 piculs | Decrease piculs |
|---|---|---|---|
| Total ... | 784,502 | 823,909 | 39,406 |

| State | Singapore Value 1915 | Singapore Value 1914 | Increase |
|---|---|---|---|
| Total | $61,318,593.27 | $60,690,610.15 | $627,983.12 |

*Piculs of 133⅓ pounds. Straits Dollar=57 cents gold.

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**Manila May Reopen Quarry.**—In order to look into the proposed project of reopening the city quarries at Talim Island, members of the municipal board made an inspection trip to the quarries formerly operated by the city. Member de los Reyes stated that the present contractor has already collected P204,000 for stone and that 62,000 cubic meters of this material was now piled up so that the city would not have to purchase stone for some years. It is estimated that P12,000 to P13,000 will be required to put the machines at the quarry in working order again, apart from the money necessary to put the boats for transportation purposes into service.

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**Seoul Mining Co.'s Report.**—The following results were obtained by the Seoul Mining Co. from the Suan and Tul Mi Chung Mines operations for the month of February, 1916.—

| | |
|---|---|
| Tons Crushed ...................... | 14,420 tons. |
| Value Bullion Recovered........ | Yen 126,205.00 |
| Value Concentrates Recovered. | 115,963.00 |
| Total Receipts (approx.)... | Yen 242,168.00 |
| Operating Expenses (approx.) | 110,000.00 |
| Operating Earnings (approx.) | Yen 132,168.00 |

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**Many Mines in China.**—According to an estimate it is said that there are at present no fewer than 4,049 mines which are now being operated throughout the country, covering a total area of 11,310,052 mou of land. There are said to be 7,561 "officers and engineers" and 122,459 common labourers employed in these mines.—*Peking Gazette.*

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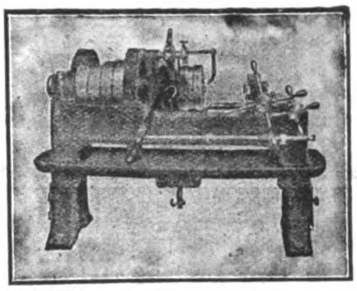

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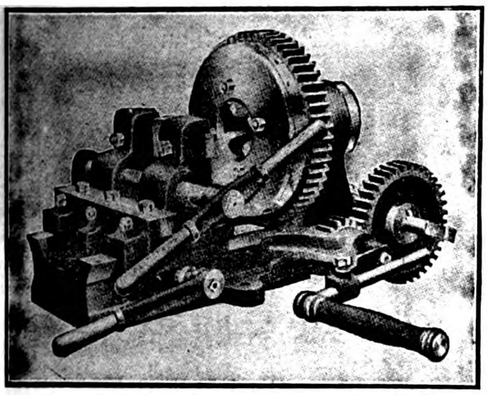

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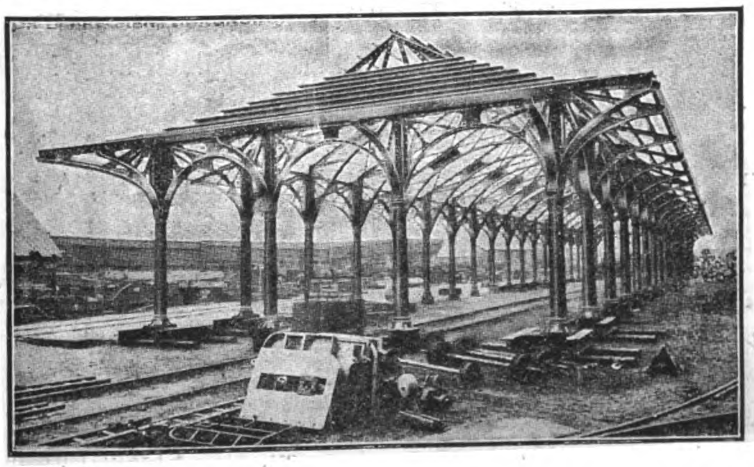

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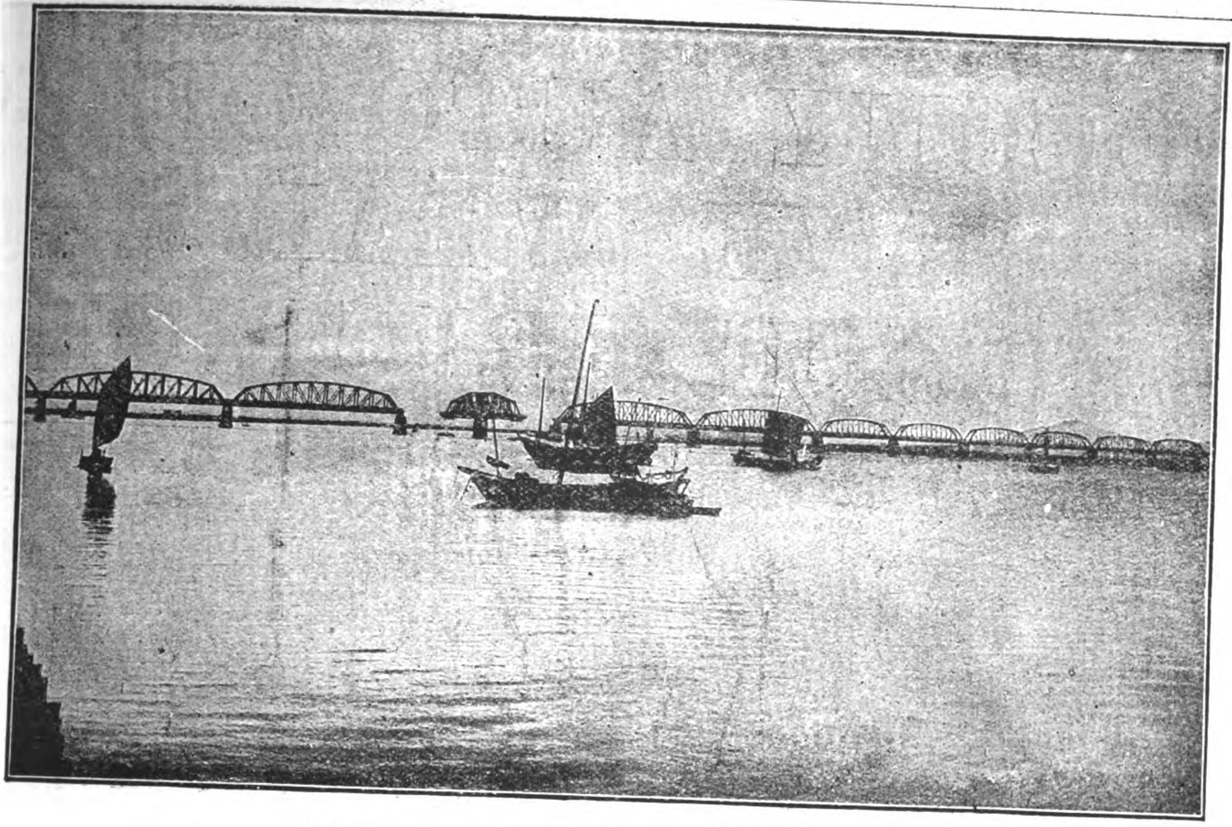

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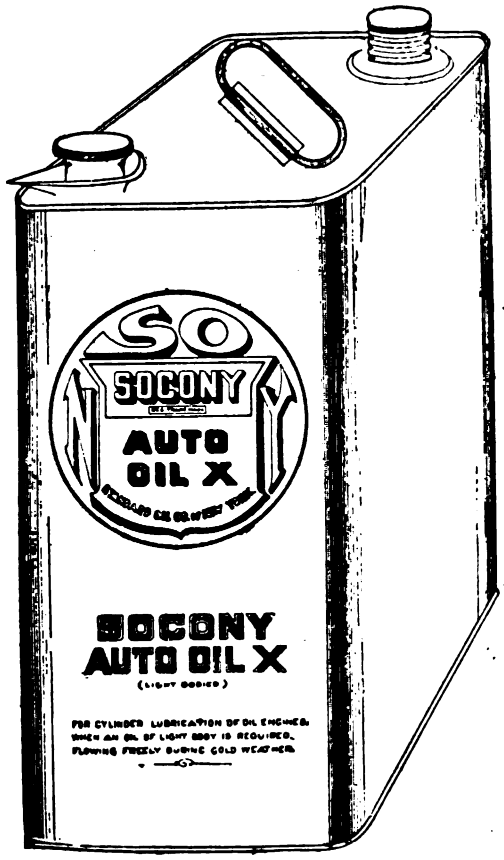


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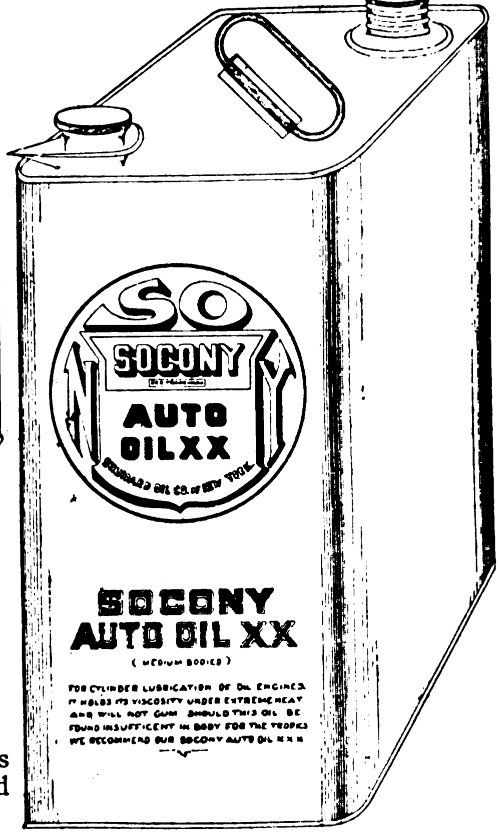


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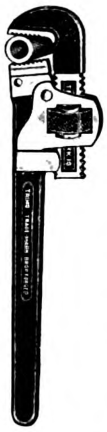

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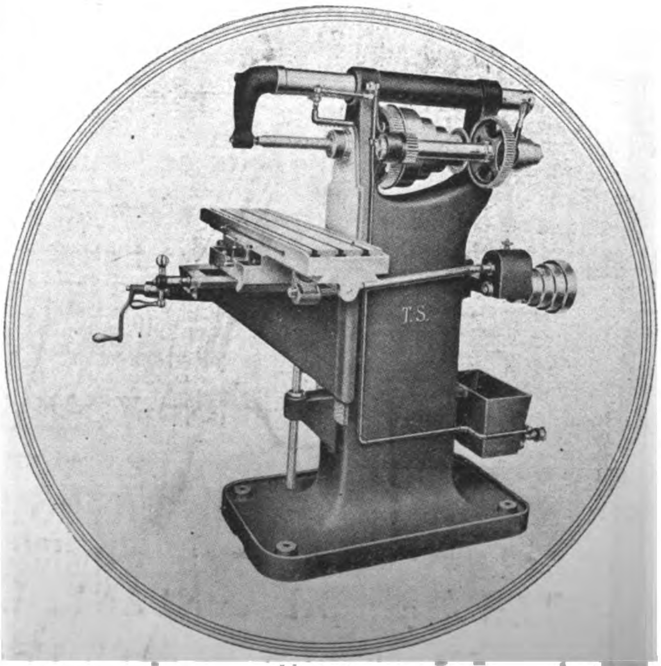


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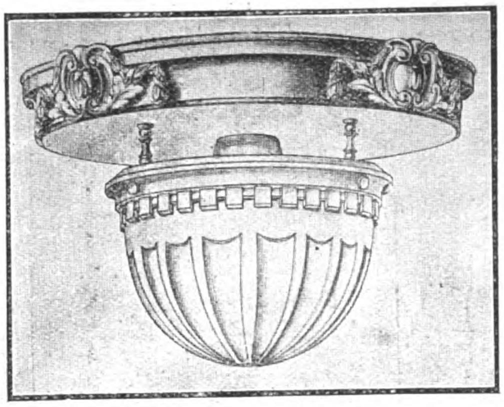

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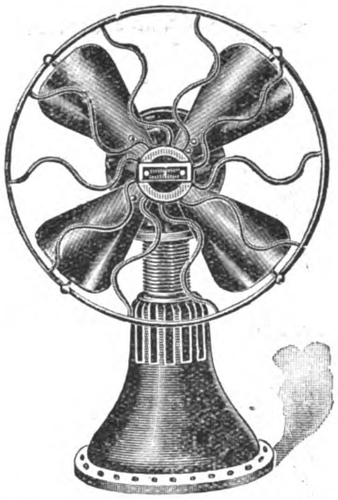

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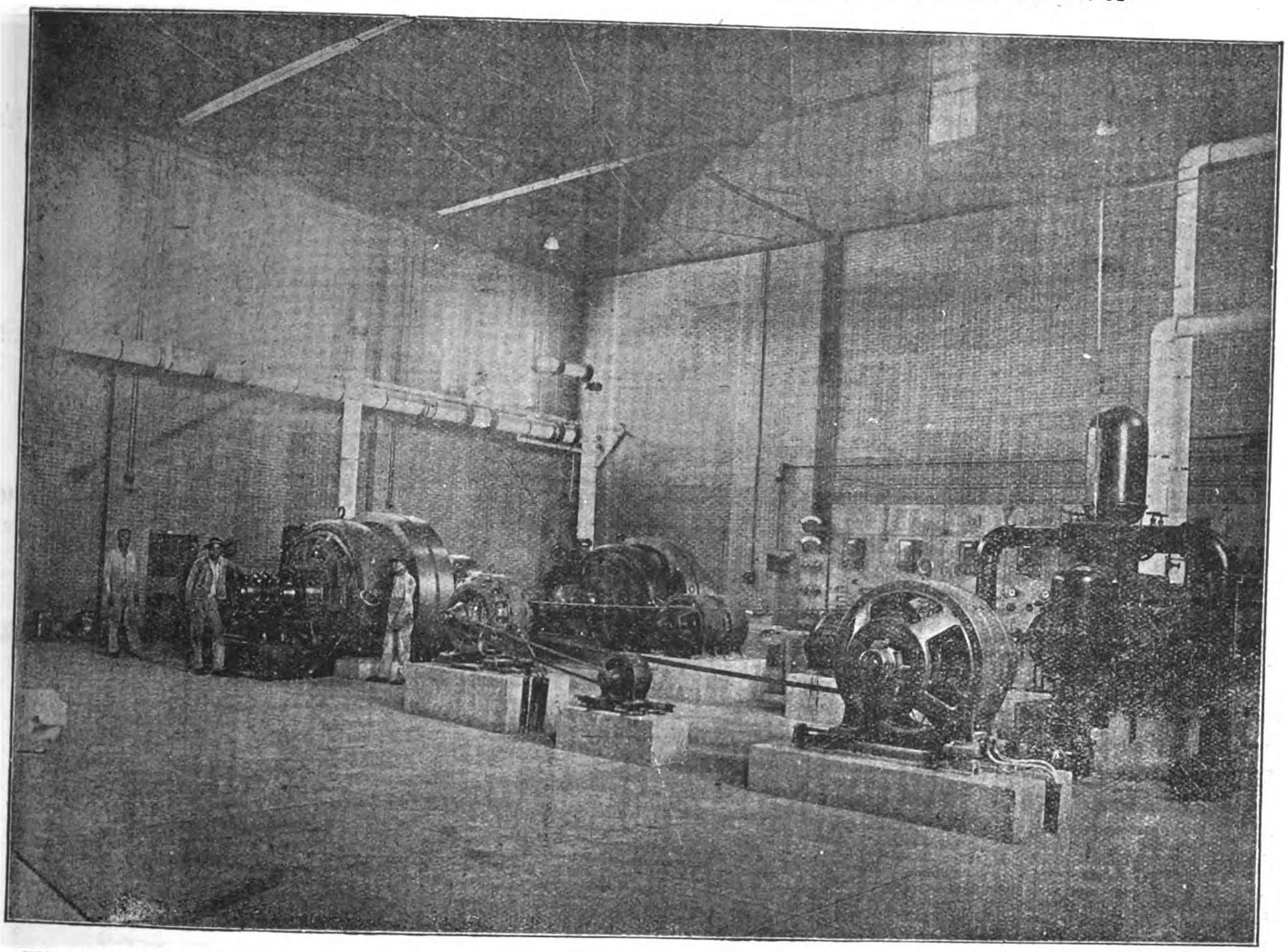

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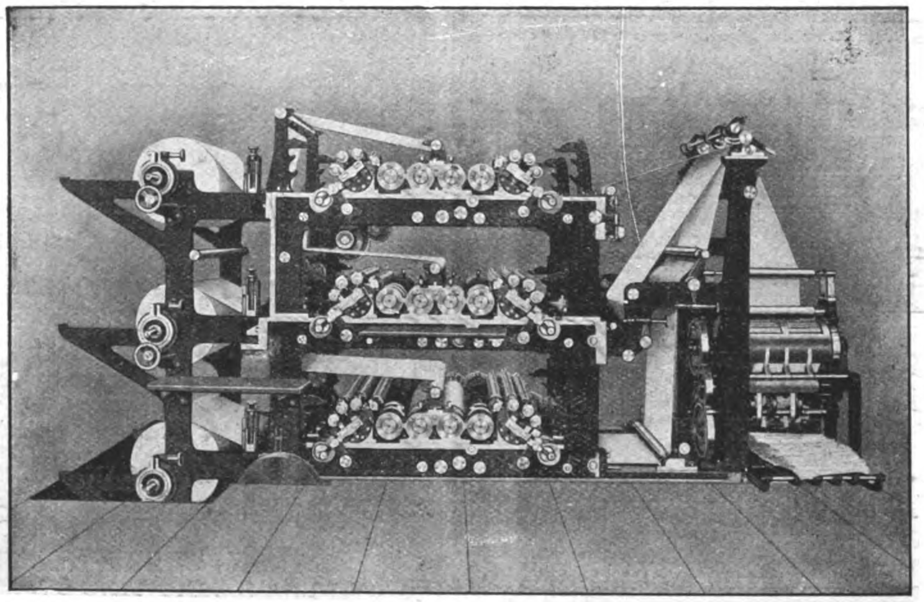

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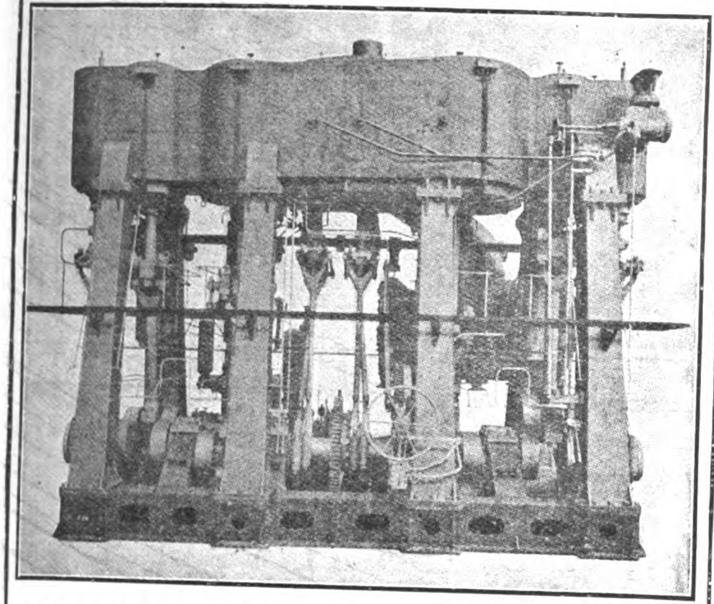

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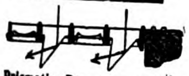

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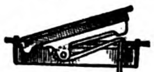

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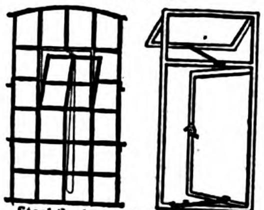

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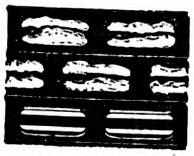

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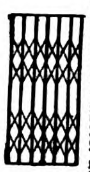

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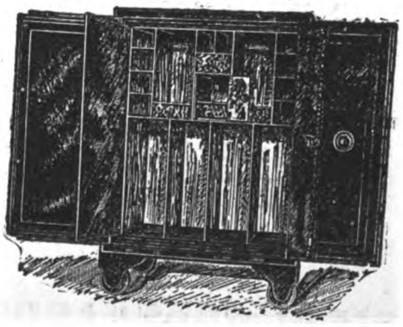

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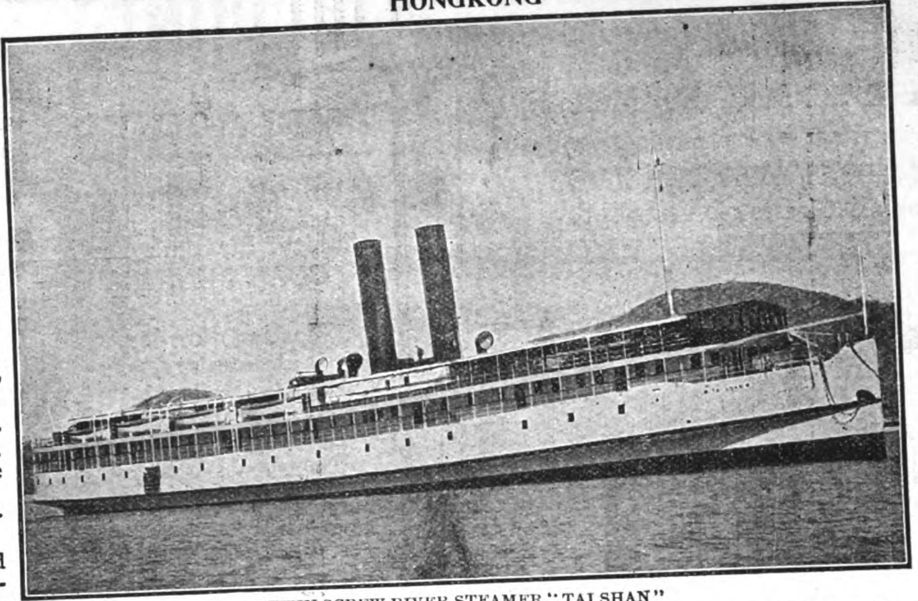

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|---|---|---|---|---|---|
| **KOWLOON** | *Feet* | *Feet* | *Feet* | *Feet* | *Feet* |
| No. 1 Dock, Kowloon | 700 | 86 ft. top / 70 ft. bottom | 30′ | 7′ 6″ | 3 |
| No. 2 Dock, Kowloon | 371 | 74′ | 18′ 6″ | 7′ 6″ | — |
| No. 3 Dock, Kowloon | 264 | 49′ 3″ | 14′ | 7′ 6″ | — |
| Patent Slip, No. 1, Kowloon | 240 | 60′ | 14′ | 7′ 6″ | — |
| Patent Slip, No. 2, Kowloon | 220 | 60′ | 12′ | 7′ 6″ | — |
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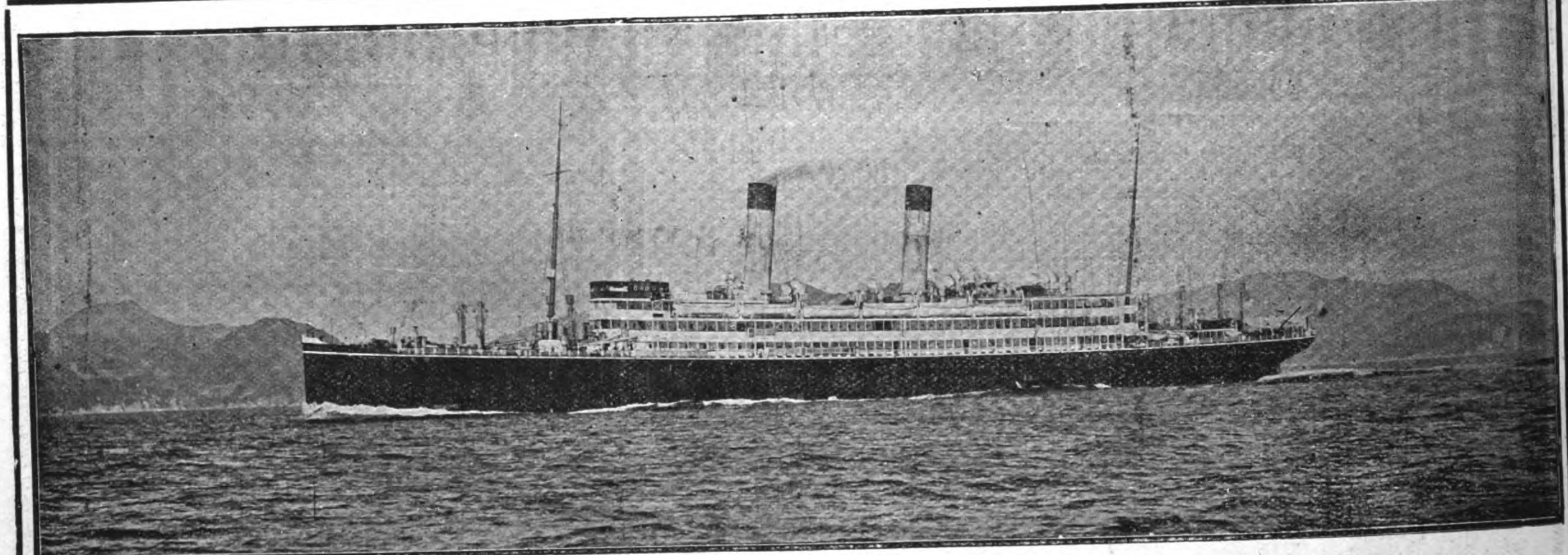

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|---|---|---|
| Extreme Length | 523 | Ft. |
| Length on Blocks | 513 | " |
| Width of Entrance on top | 88 | " |
| " " " Bottom | 77 | " |
| Water on Blocks at Spring Tide | 23½ | " |

DOCK No. 2.

| | | |
|---|---|---|
| Extreme Length | 371 | Ft. |
| Length on Blocks | 360 | " |
| Width of Entrance on top | 66 | " |
| " " " Bottom | 53 | " |
| Water on Blocks at Spring Tide | 22 | " |

DOCK No. 3.

| | | |
|---|---|---|
| Extreme Length | 722 | Ft. |
| Length on Blocks | 714 | " |
| Width of Entrance, top | 99¼ | " |
| " " " Bottom | 88¼ | " |
| Water on Blocks at Spring Tide | 34½ | " |

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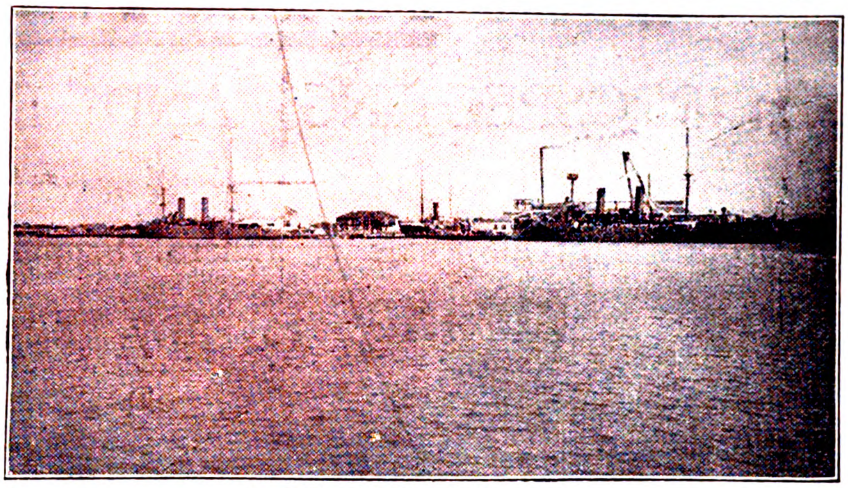

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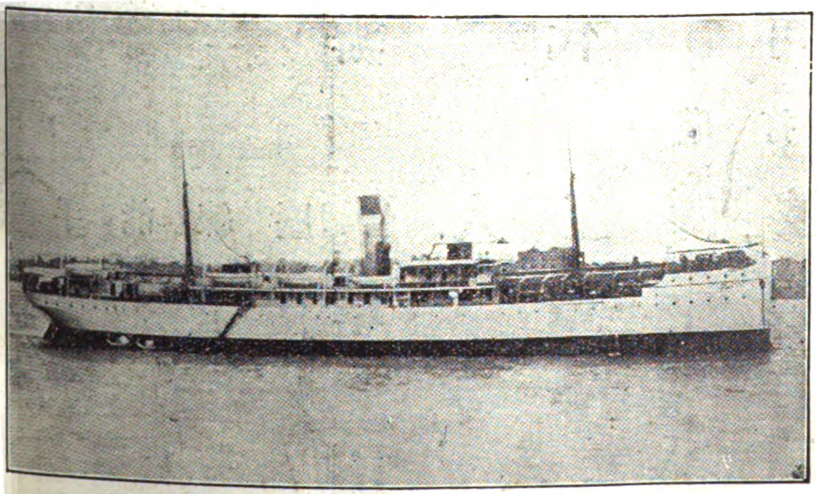

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| International Dock | 528 ,, | 77 ,, | 23 ,, |
| New Dock . . . | 450 ,, | 74 ,, | 21 ,, |
| Old Dock . . . | 399 ,, | 53 ,, | 16 ,, |
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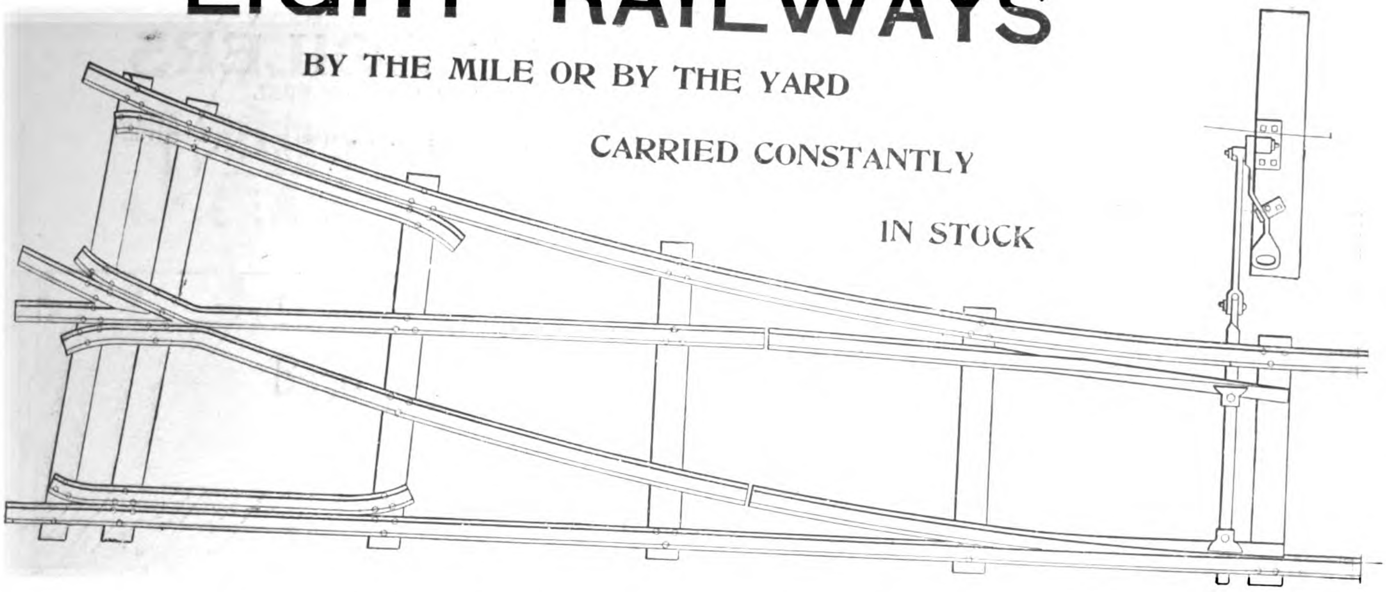

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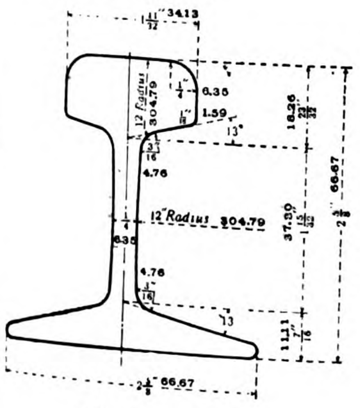

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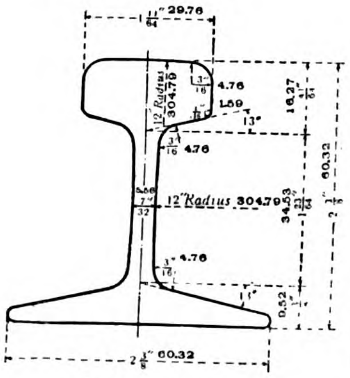

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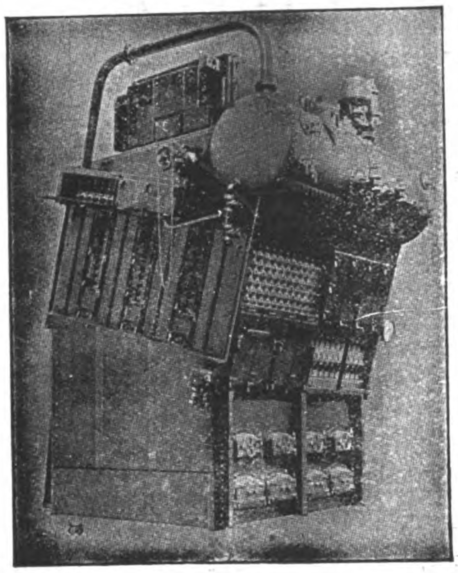

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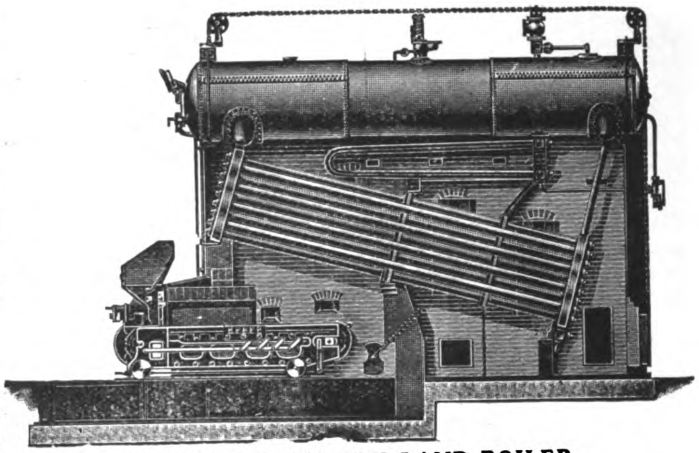

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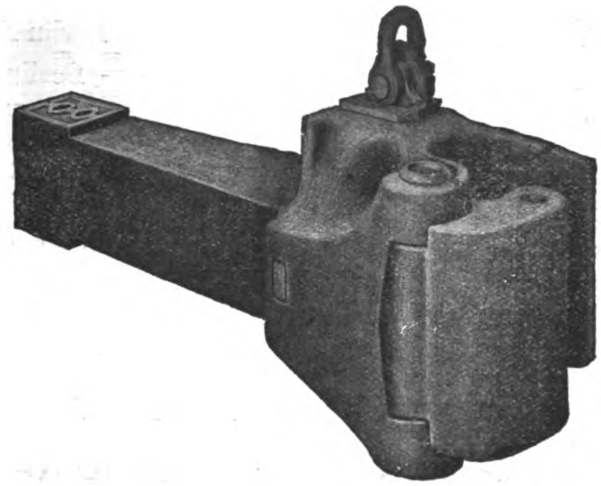

THE latest development of the Janney type of M. C. B. Coupling originally introduced and promoted by this company. This coupler has all the simplicity of the early type of the Janney coupler, and also has the up-to-date features of a "Lock-to-the-Lock," "Lock-Set," and a "Knuckle-Opener," and complies fully with all the requirements and recommendations of the M.C.B. Association of the U.S.A.

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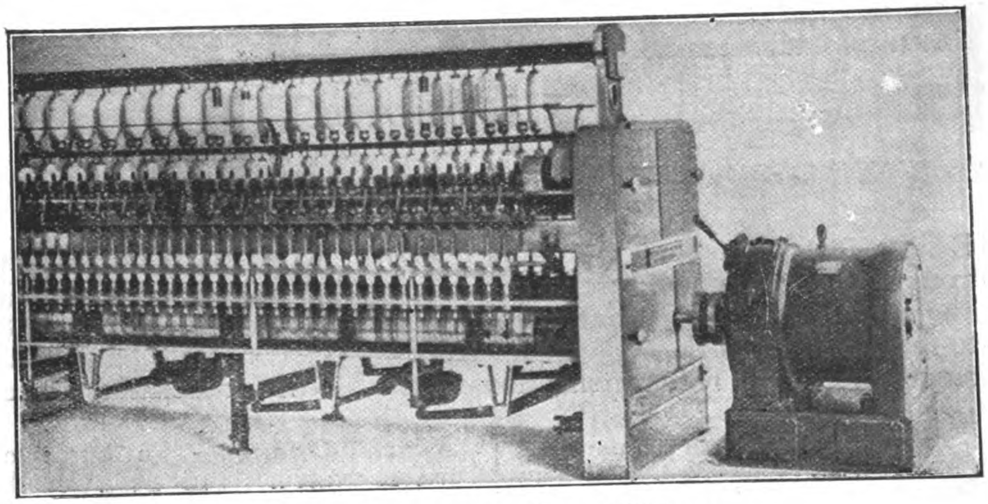

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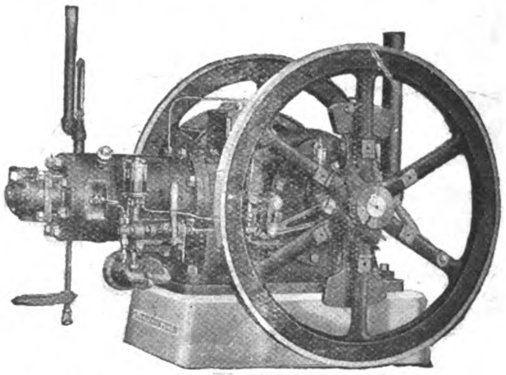

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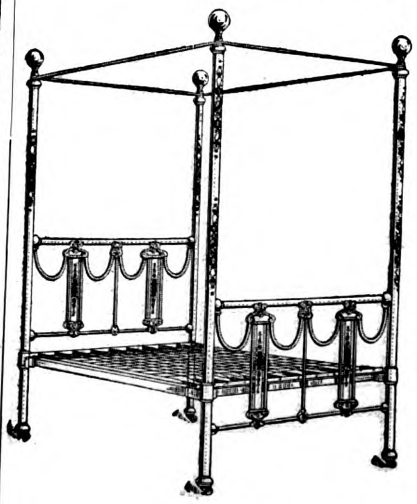

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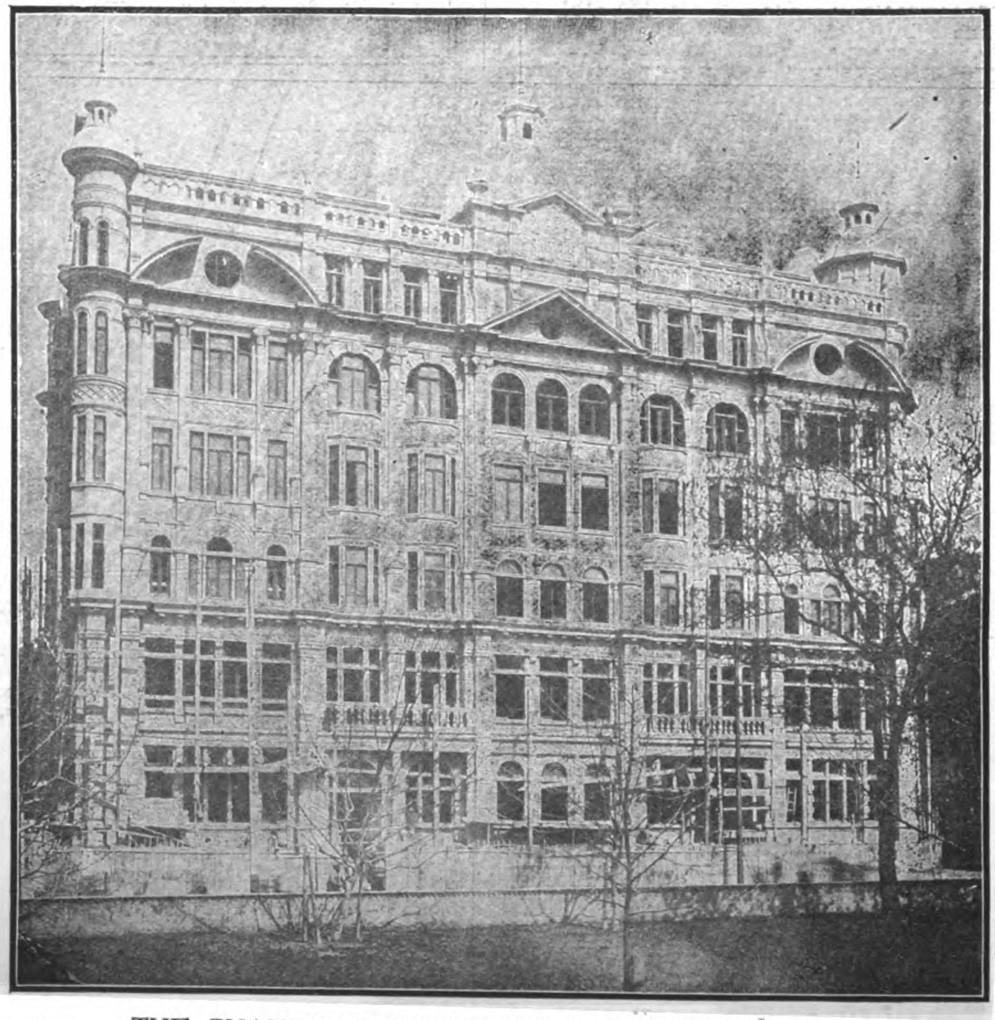

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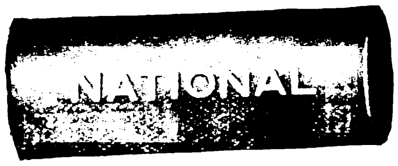


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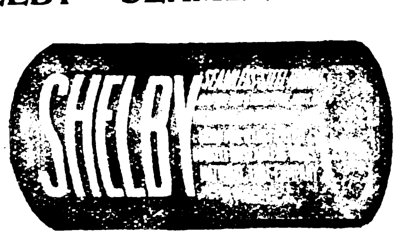


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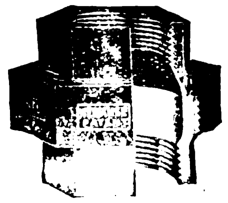

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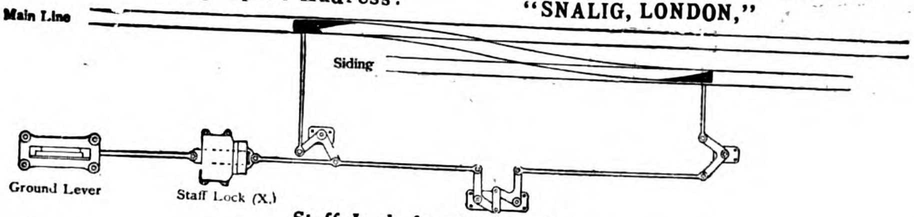


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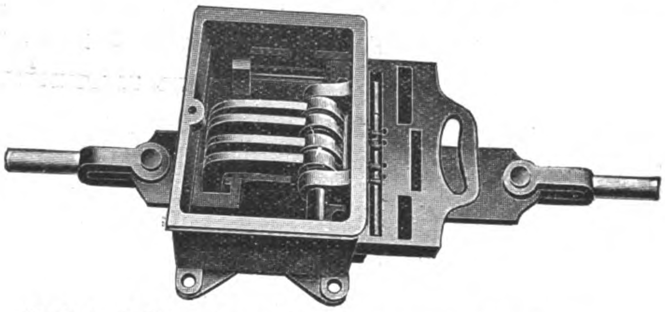

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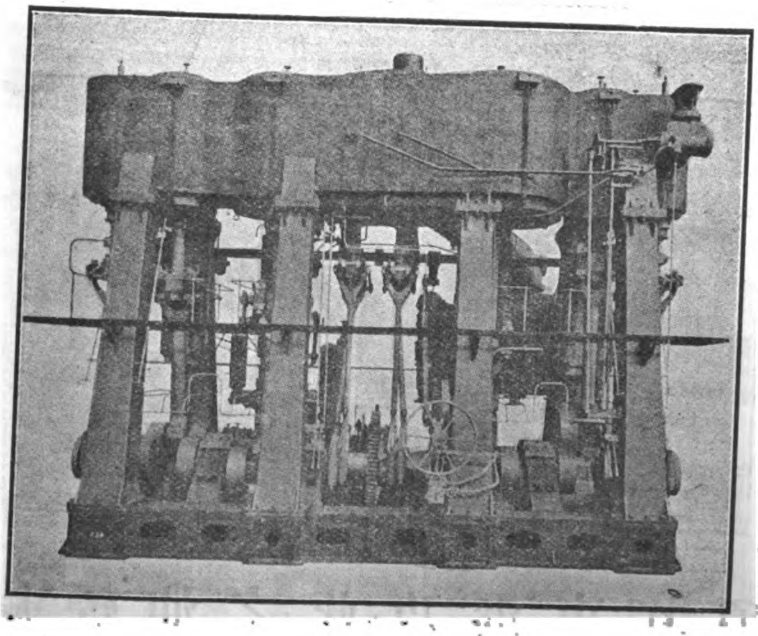

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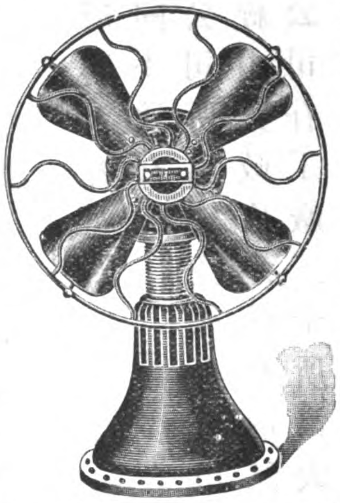

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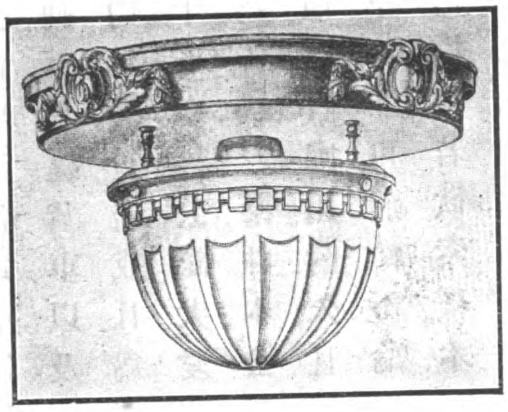

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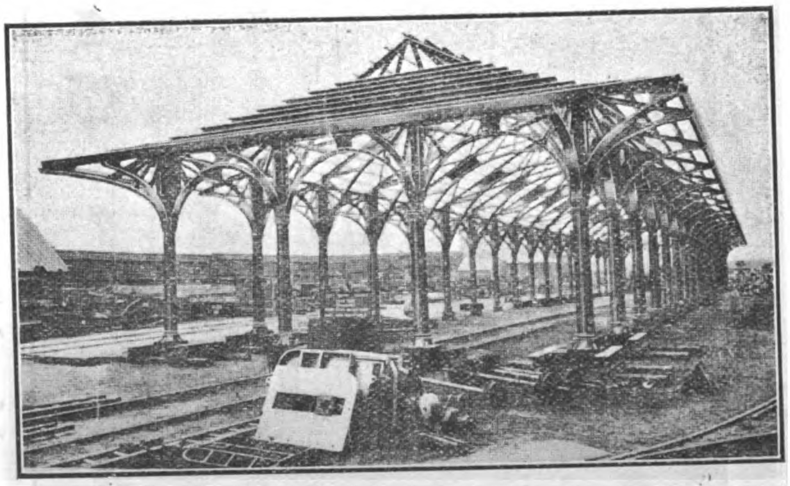
# 海特雷脫生公司廣告

Head, Wrightson & Co., Ltd.

本公司有大廠三所專造煤礦場及各礦場所用之物及裝煤船貨車起重機風箱冶汽爐船塢門等橋坑總齒輪鋼質貨車屋頂煙筒油池之類此圖乃香港之車站其屋頂爲本公司所建造本公司爲英國大廠之一每年出鑄件十萬噸出機器一萬七千噸且爲中國印度日本包辦各項工作



# 上海耶松機器船廠有限公司

The Shanghai Dock & Engineering Co., Ltd.

**電報行名** Telegraphic Address and Code

"FARNHAM"

A. B. C. 4th and 5th Editions

A.-1 Watkin's, Scott's

Western Union

and

Engineering.

密碼本用

**總公司**

在百老滙路廿六號

德律風第七號

Address.

**電話號碼** Telephone Number

大班處七五七號

書記處一八七七號

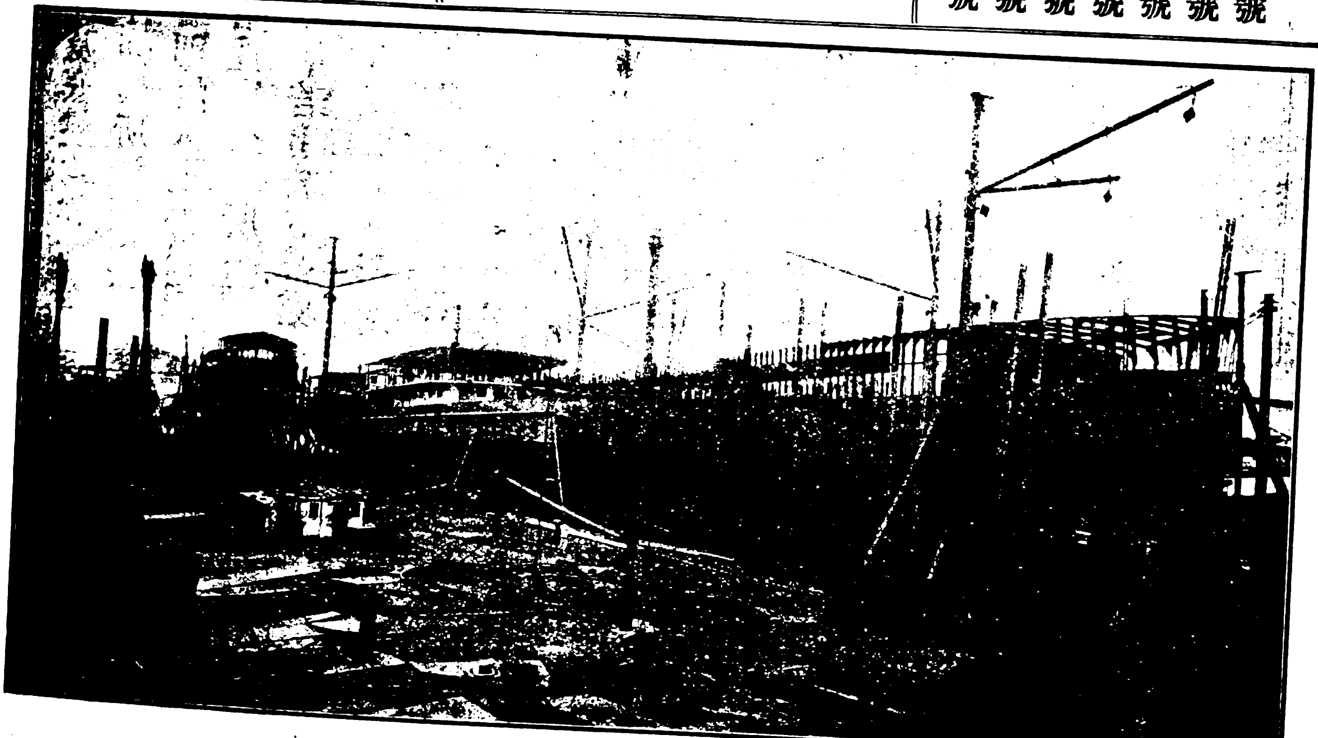
總辦處六七八八號

幫辦處一八八七號

總寫字間七號

浦東寫字間二三號

浦東機器間一一二七號



祥生機器廠造船所

本廠所造輪船模型英一千九百零四年在美國聖魯易賽會得賞金牌

The Model exhibited at St. Louis Exposition and awarded the Gold Medal in 1904.

熱水汽管卽司丁火爐各種式樣俱全

All Kind of Steam Heating Institutions.

本廠共有船塢五處長自三百五十五尺至五百三十二尺船塢口闊自五十三尺至七十七尺深十六尺至廿四尺　本廠價格可稱東方第一低廉　本廠船塢工場共有基地四百四十八畝佔有水面一英里半之長　碼頭方船均全以便各輪船修理時可以靠傍小輪修理並可拖至岸上各船塢均備有起重吊機可受六十五噸之重物　各造船處及工場均裝用電燈並有活動吊機可吊六十噸重之物並有最新式機器應用物件機器間及工場均裝輕便鐵道　本廠備有水鬼多名撈船器具及吊機浮船一遇招呼隨時應命無論海船江輪明輪暗輪拖駁小輪機器駁船挖泥船吊機浮船以及碼頭方船等如蒙詢問價目無不從速答覆　各種修理及拆舊換新等本廠均可承接並能迅速從事　本廠並有船上岸上所用機器爐子開礦機抽水機以及各種機件電氣自來火火油司丁各種機器俱全如蒙賜顧請卽駕臨或函件接洽均當歡迎也

# 西北展張鐵片公司廣告

North Western Expanded Metal Co.

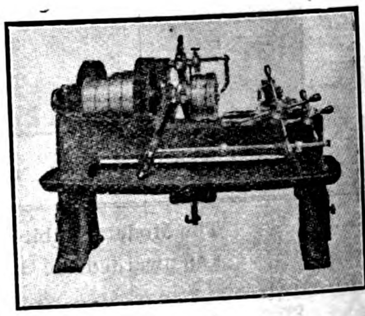
本公司製造哪白兒展張鉄片專爲近世築造之鋼屋內部所用以上之圖爲美國芝高哥城最大最新近之大廈其內部及底盤均爲本公司所製之哪白兒展張鐵片條板所造蓋以之作底盤其價甚廉以之作墻則耐久因哪白兒牌之條板爲惟一之建築品且爲全球所公認推爲內外建築特別品之標準若用於熱帶處所用以作墻及天花板底則更相宜蓋其性耐久而

不曲且不笨重易於運輸且避水患此項展張鉄片條板業經由五洲各大建築家實地試驗防熱避風火暴雨等危險實爲建築家所不可少之物

今敬告建築家若欲建造房屋無論何時何地何物先請察驗哪白兒牌之展張鉄片條板本公司備有說明書請來函索取可也

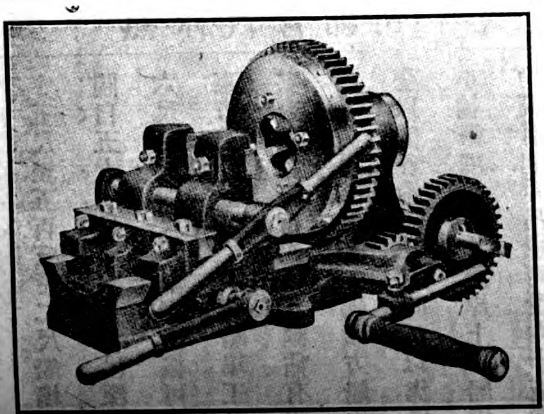
# 英國約書亞西潑有限公司

Joshua Heap & Co., Ltd.



本公司專造製螺絲機器此圖爲二吋單頭自動製螺絲機器爲多頭製螺絲機器之一曾註冊立案爲近世最省工力之機器備有柄頭及自動開機連於螺形頭上及自動關機并配製螺絲各俱無不靈動本公司所出之註冊鋼質螺絲模型爲市上所罕有蓋質地堅實螺絲板易於拆卸且全體皆爲良工所製並無發條或輕脆之料作摻雜其間

此圖爲改良通用之製螺絲機器可製螺絲管彎曲短小之件如對徑二吋大小之物或釘捎對徑二吋半等物均可製造近年來銷數已達二千五百架其大者如對徑八吋之物亦可製造此項機器電力與人力均適用若欲知詳細請來函索取目錄爲禱



# 美國展輣冶鐵工廠廣告

The American Rolling Mill Co.

新舊兩鐵釘之比較方形熟鐵釘可用三十八年鋼鐵釘可用十一年

本公廠爲國家所特許稟准立案爲萬國鐵廠所賞識因所鑄之**奧姆可**鉄耐用且爲新發明格致術可免生銹之患鐵性本易生銹而本廠獨得妙法使其免銹二十年前無人知其原性故有歐美著名之冶金學士研究其生銹之故及免生銹之法至今日大工已成查得首時所用之鐵爲純潔之質故耐用後因有雜質如鎂及硫礦等物故欲免其生銹必須將雜質治去而後可至免鋼生銹之法亦然當將雜質及炭質冶去

由研究試驗而得一定例如電池之例一律若電內放雜質則電流不順本廠之**奧姆可**鐵能免生銹因按格致之理而溶鑄者也其雜質均摒棄

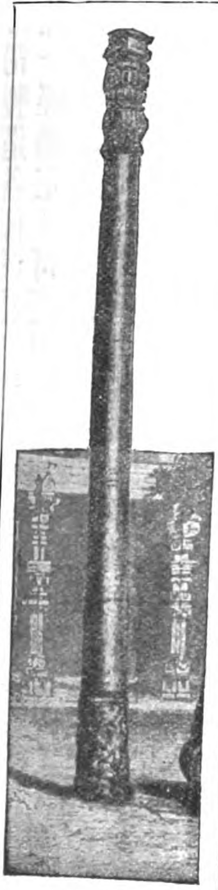
凡鉄質之面既有不同故生銹之處亦有多少故凡鑄鐵具務須厚薄均勻寬鬆合度

本廠開設美國哇哈哇省

密特兒登電報用奧姆可三字

欲索取詳細目錄可將英文告白之下面角紙裁下送來可也

英國經理倫敦馬銳公司　小呂宋經理非列賓　大西洋海灣太平洋公司



此圖乃印度國特而希之大鐵柱建於紀元前九百年爲純鐵所鑄之柱

屋頂及屋傍引傳電氣之奧姆可縐紋鐵件

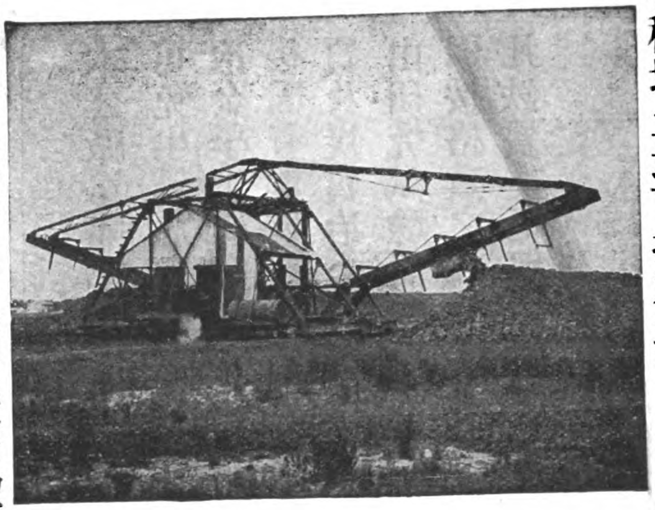
奧姆可縐紋鐵溝大道鐵路陰溝最適用貨眞耐用欲知目錄請來信索取可也

# 奧司丁挖渠機器公司露佈

F. C. Austin Drainage Excavator Co.

本公司製造各種機器如溉田機器鑿溝機器且一經購定即可速即裝運出口今本公司特登廣告以告諸包工家營造師以及政府中官吏因本公司已將各機器早經裝就定單一到即可運往印度緬甸錫蘭暹羅海峽殖民地埃及中國日本及遠東諸各處水脚保險均可包理

奧司丁鑿溝機器樣式及大小種類極多且各種地土均可挖鑿其兜能自傾外出其機器之料作均鋼所鑄奧司丁掘土機器能自由運動地之深淺闊狹斜側均適宜合用其兜能自傾外出



圖中之奧司丁連結挖掘機器為美國政府所用以開巴拿馬運河之用每一連機每點鐘可挖掘六十八立方碼奧司丁公司所出之機器通行於美國英國坎拿大奧司達利亞南亞非利加日本俄羅斯意大利巴西及埃其丁民主國且均由各該政府定購

若欲知詳細章程者可函達上海遠東報主筆先生可也

本公司開設美國芝加哥省

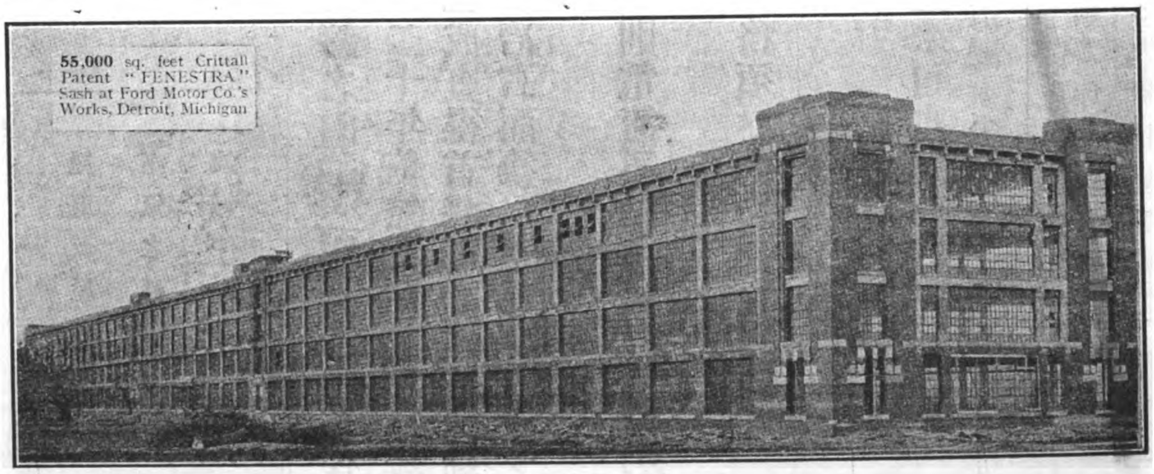
# 克立討耳公司廣告

CRITTALL

本公司包造各種房屋遐邇馳名工廠開設英國

日本經理東京麴町區有樂町十一町目

中國經理上海漢口天津上海南京路十三號盈生洋行




此圖為美國米西干省製造汽車之工廠為本公司所築之鐵窗計長五萬五千方尺

# 瑞生洋行

**設分行在漢口天津北京等處**

本行開設在華歷有年所承
蒙　官商訂購各種機器或
全廠或零售無不價廉物美
屢承　嘉許遐邇皆知凡
官商諸公購辦機器務祈惠
臨敝行估開價目繪呈圖說
格外克己上海漢口兩處另
設機器陳列所陳列各種最
新式樣機器及五金器具鋼
地軸皮帶輪掛脚等以備
諸公駕臨觀覽特此佈告
上海瑞生洋行謹白

Shanghai Machine Company

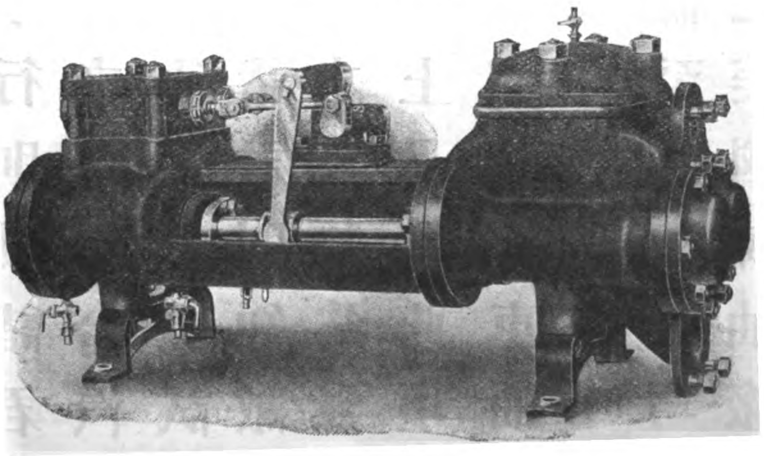
# 魏廷敦起水機器有限公司

Worthington Pump Company, Limited.

本公司起水機器亦在各國著名賽會得有金牌

本公司亦有製造廠在以下之國

英國　法國　美國　澳國
德國　印度國



本公司亦有辦事處在以下載明之各國

比利時　南亞斐利加　坎拿大
澳大利亞　中國　葡萄牙
墨西哥　巴西國　俄羅斯
阿珍甸　西班牙　義大利

中國總辦事處在上海九江路第三號

## 美孚油行廣告

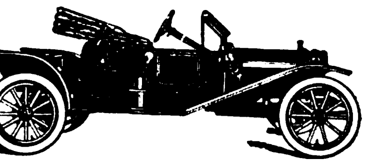
Standard Asphalt Block Filler. Standard Oil Company of New York.

本行製造地瀝清砧塞俱其效用能使所鋪之地不能因天時之更換而改易并使砧面上之黏性合度且棉軟而能減少噪聲本行之地瀝清砧塞俱其功效有如此之大故凡美國來往行人最多之處鋪以此物其功效則顯而易見故人多稱道之若承諸君不棄欲知詳細效用并價目者請來函詢問可也

## 美國紐約克美孚油行廣告

Pratt's Motor Spirit. Standard Oil Company of New York.

諸君費錢以購買⿰犭并司令汽車油之故必望其發生極速馬力並多走里數然欲達最美滿之目的本行則勸諸君購取敝行之⿰犭并司令汽車



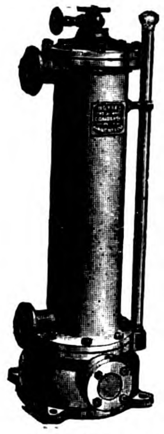
油若一經試用諸君則知敝行之貨物爲無上上品也此項⿰犭并司令汽車油裝於箱內每叮自二加侖至五加侖均由敝行之美國鍊油廠所鍊就直接由該處運來故毫無摻雜他種物質之弊

美孚油行⿰犭并司令汽車油部啓

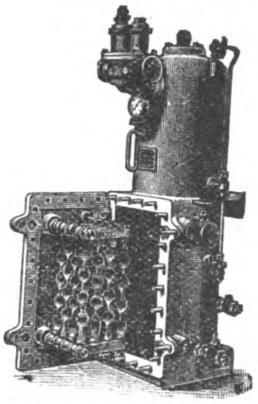
# 老來司有限公司
## ROYLES LIMITED

本公司所製煖水器俱色夫尼亞汽筴蒸汽俱汽弇壓機回焰爐鍋引熱機均供愛桂丹尼亞輪船所用幷爲宮庭中所賞識英國及外國之軍艦商船等無不購用各種之生熱機及消冷機無不用註册之老來司管故聲譽日隆其功效遠過於普通之管因物質堅固輕巧易舉迥非他公司所可覔得者也欲知詳細請來函索取樣本可也

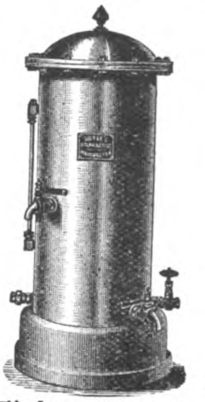
此管專適用於穢水且能除去管底之齷齪較普通式之管其功效不啻倍蓰.



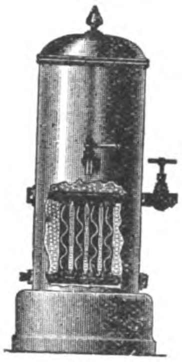
淡水壓機圖
此項壓機特爲商部所造以供其用



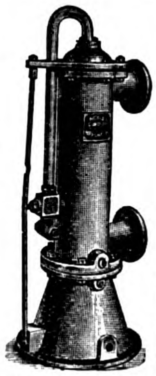
此圖即拆開修整之形
蒸機可任意拆去以便整理且各管不致損壞



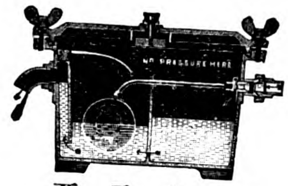
汽鍋關閉之形



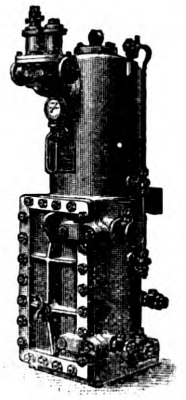
汽鍋圖



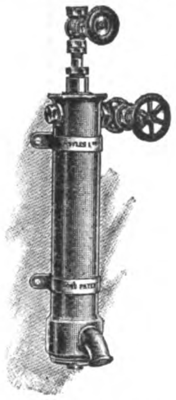
引熱機直形



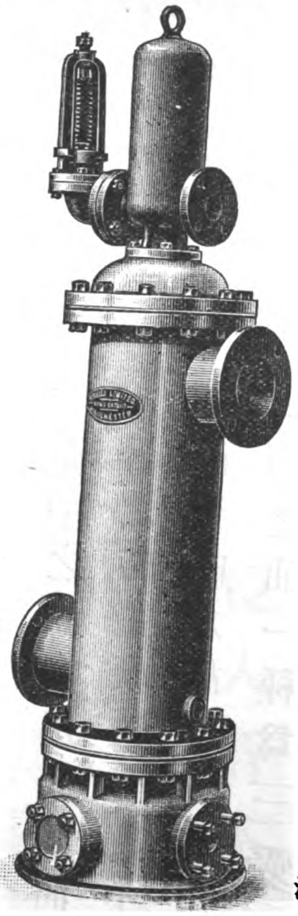

色夫尼亞
（註册商標）汽筴各處行
用者不下十三萬具



蒸機
以作添水之用

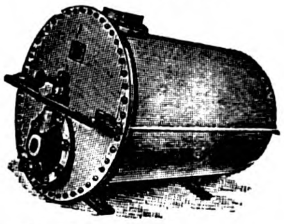


立時生熱之水機圖
專供船中浴沐之用



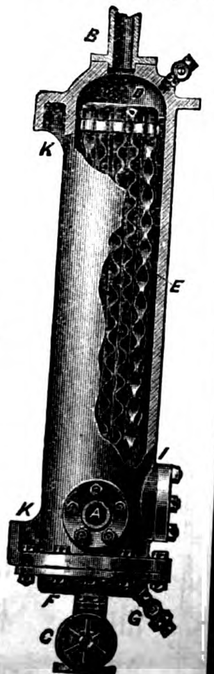
吸汽添水熱機圖

回焰爐鍋

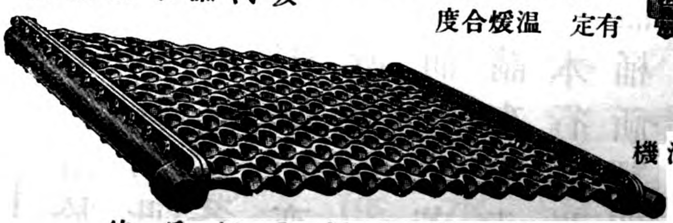


沐浴用之引熱機儲蓄形
（注意）此項引熱機藉水汽之力能自由運行且能出水
有定溫煖合度

連結之安全汽弇圖
壓力合度包管
便利汽或空氣或
水均合用




生熱添水汽機



沸板圖　較金類之繩爲佳

Telegrams: "ELYOR, CADISHEAD, ENGLAND."

# 美孚油行廣告

Socony Auto Oils.　Standard Oil Co. Lubricating Oil Department.

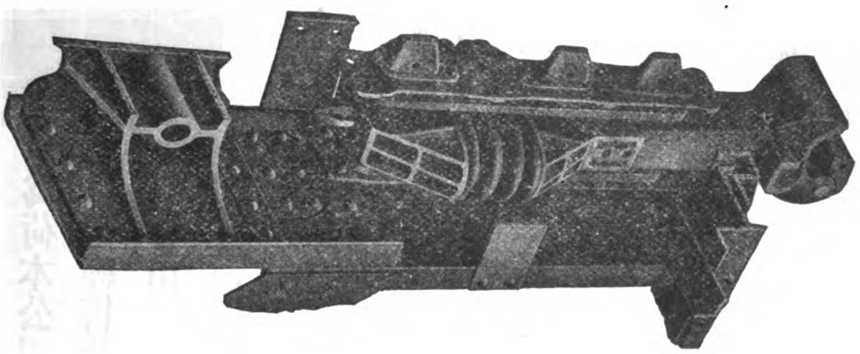
本行所出**鎖可聶**自轉油乃由格致考驗鍊成特供馬達家所需用且此油精緻能使馬達機器運動合度且可經久省用而免磨擦之弊蓋馬達機器若遭磨擦較用油爲費所謂機器之馬力者即毅力也不可荒廢本行之**鎖可聶**自轉油分三種一種爲**一愛克司**之油用於輕小之圓油機上於寒冷之天氣必能自由流行也一種爲**兩愛克司**之油亦用於圓油機上適用於盛暑之時蓋凝結合度不致污抹倘此油因天時之故不適於用可用**三愛克司**之油一種爲**三愛克司**之油亦用於圓油機上特備爲熱地所用即**兩愛克司**油不足即以此油代之若承各界諸君不棄欲知詳細請來函索取說明書即汽車油之指南本行專做光油遐邇聞名以上三種油桶祈認明庶不致誤

美國紐約克美孚油行光油部敬啓

# 新民頓鐵道材料出口公司廣告

The T. H. Symington Co. Railway Material Export Corporation.

本公司所製鐵道用具爲全世界之冠且樣式均特別新樣所製之旅行箱及運動機件無論內件外件無不齊備故爲美國鐵道奉爲圭臬且通行於世界



各處中國之京張鐵路及高麗鐵路均購用極有效力若承不棄請通函定購可也
開設美國紐約省百老會路一百四十九號

# 英國來大匯有限公司廣告

F. Reddaway & Co., Ltd.

本公司獨製駱駝牌皮件專製救火皮帶鐵甲皮帶及皮布等件且所製皮件爲水或汽或藥水所不能侵入者本公司又製造橡皮器俱以供鐵路幷工藝廠及開礦工作等處之用若承各界諸君光顧請向經商人詢問駱駝牌可也

總公司及工廠開設英國曼區司得

## 司帝反生公司廣告

W. F. Stevenson & Co., Ltd.

小呂宋　伊羅伊羅　塞步

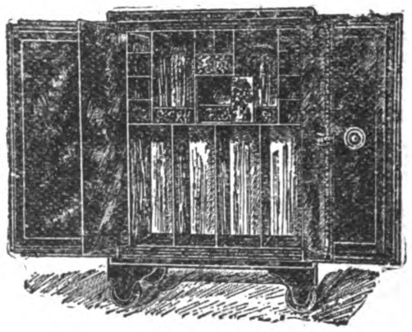
本公司駐小呂宋單獨經理白弗羅匹次公司之農業機器克老司來弟兄公司之煤汽機及油汽機奥司丁製廠之造路機器威廉滑脫公司之航海機器及水鍋等

合羣愛司倍司督司東方經理處



## 晉隆洋行廣告

Herring Hall Marvin Safes. Mustard & Co.



赫令好馬文保險箱爲上海所罕見目下陳列於本公司之售賣間若欲知詳細價目請來函索取目錄并價格表爲荷本公司在中國爲單獨經售此項保險箱之公司

公司開設上海圓明園路二十二號

電話第十五號



## 馬爾思公司

A. J. Morse & Son Diving Apparatus.

本公司創設於紀元一千八百三十七年專製下水應用之器俱若欲定製無不立辦

公司開設美國鮑思敦高街第二百二十一號

經理處小呂宋弗蘭克司決浪克



## 希米脫加熱機關車蒸機公司廣告

The Schmidt Superheater For Locomotives.

The Schmidt Superheating Co., Ltd.

本公司所製之加熱蒸機中有四百九十多條之鐵道用二萬八千五百架機關車之加熱蒸機均爲倫敦及西北鐵路公司所審定若承購買請向上海經理處瑞記洋行定購可也

公司開設英國韋司民司得維多利亞街二十八號

# 白老頓製銅公司廣告

The Broughton Copper Co., Ltd.

本公司冶銅製造紫
銅黃銅青銅管子滐
冶合度堅固異常特
供航海及機關車幷
種種用具又製造銅
塊銅條銅片及銅版
幷製電銅版及夾銅
等物

公司開設英
國曼區司得

# 安德生公司廣告

Wm. H. Anderson, & Co. Manila, P. I.

本公司專做出口進
口貨物幷代客買賣
且爲以下所列各公
司駐小呂宋之經理
革林島水門汀泥公
司　香港纜索製造
公司　立培麥克聶
立培公司　司活夫
公司勃老司活克
白耳克考蘭特公司
婑磨督公司大
愛地特保險箱光滑
油溝渠管火磚火泥
及羅勃老特避火之
瓦若承各界光顧祈
通函定購可也

本公司開設小呂
宋小打克羅橋

# 麥康韋討萊公司廣告

The McConway & Torley Co. Janney—Penn. Coupler.

邇來新發明之愛姆西皮近耐形連結俱爲本公司所輸入及研究所得者此連結俱卽近耐形之化身而變成目下最通用之對鎖鎖具及肘節開具爲美國愛姆西皮會所推許茲將各所製造者一一說明於後

對鎖者卽既爲輪制所鎖住則鎖條決不向上活動因下端凸出干連結之空處免致脫節也

鎖具者卽以鎖砧置於連頭之內端俟不連結之端向上轉動時卽按節而合若欲解脫此鎖具當於連結時拔去之

肘節開具卽由最相結連之處或略分開之處開放至最大開放處其運行處自由且肘節開放完備

其鎖面形極大約五方吋故能使肘節附合且鎖砧大小適合於連結端之下此連結俱備有各種之附屬品且易於修理此項連結俱爲本公司所專製

總公司開設美國本色萬尼亞省匹此勃

中國經理上海慎昌洋行天津協隆洋行

# 交通銀行廣告

## BANK OF COMMUNICATIONS

本銀行資本一千萬兩專辦銀行一切交易各項存款無論定期活期其利息均照議給付并滙劃中國各處以及押款等事總行開設北京分行東三省牛莊奉天長春吉林哈爾濱遼陽蓋平孫家台鐵嶺錦縣新民屯直隸北京天津張家口保定海甸順德唐山北通州豐鎮勝芳石家莊山西大同陽高陝西澠池山東濟南濟寧棗莊烟台德州河南開封焦作周家口溧河道口彰德鄭州信陽州洛陽郾陽江蘇上海蘇州無錫鎮江揚州浦口板浦徐州清江浦浙江杭州寧波安徽蕪湖蚌埠江西九江湖北漢口宜昌沙市湖南常沙益陽衡州湘潭常德寶慶廣東廣東特別處新列后熱河歸化香港新加坡大連等等地方

總經理　張思仁　史拉克

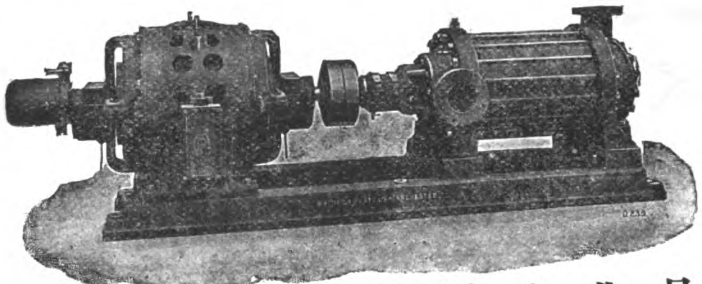
副經理　徐寶琪

仝啓

# 麥脫拍來脫輪盤抽機公司

Mather & Platt, Ltd. Turbine Pumps.

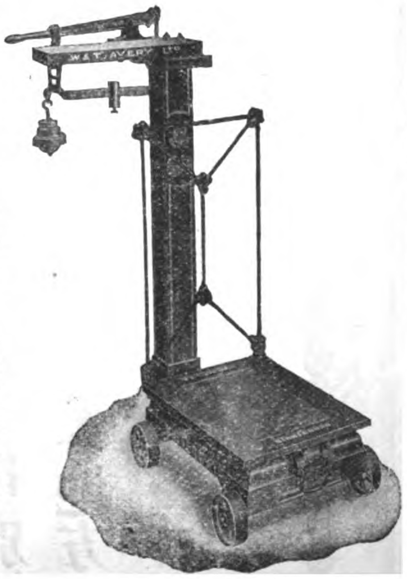
輪盤抽機爲本公司所發明且已有四十年之經驗故所出之抽機愈製愈精購用者無不樂用且無論高低均適於用此項抽機之動力或由馬達小輪汽輪速率之汽機或皮帶或繩索之力均可抽動



且一經試用則耐久非常不必再行查驗本公司所出之抽機通行於各處極多行試多年從未拆卸開視因本公司所製造之抽機美備洽意也此項抽機有自動壓勻之力裝製齊備且可增減機內之空穴價格便宜若欲購用而知詳細章程者請來函索取目錄上圖爲六筒之抽機　頭長六百十二尺每分鐘可吸六百五十加侖每分鐘可轉一千四百五十次則所動之力乃藉馬達也

# 愛物來磅秤工廠

W. & T. Avery, Ltd.　　Avery's Platform Scales



愛物來平面磅秤爲英國所製造各處通行用之以秤茶葉咖啡五穀橡皮以及種種物件無不合用今將其重量大小開列於下以便購者取擇也

平面長二十一吋半平面闊十五吋可秤四百磅

| | | |
|---|---|---|
| 二十五吋 | 十六吋 | 六百磅 |
| 二十六吋 | 十七吋 | 八百磅 |
| 二十六吋 | 十七吋 | 一千磅 |
| 二十八吋 | 二十吋 | 一千二百磅 |
| 二十八吋 | 二十一吋 | 一千五百磅 |
| 三十三吋 | 二十五吋 | 二千磅 |
| 三十四吋 | 二十六吋 | 二千五百磅 |

本廠爲世界最大之製造權衡試驗機器之廠遐邇聞名若光顧購買方知本廠之貨物也

本廠開設於英國百銘罕城

上海及橫濱經理怡和洋行

# 橫濱正金銀行廣告

Yokohama Specie Bank, Limited

本銀行創設於紀元一千八百八十年總行開設日本橫濱資本日洋四千八百萬元收足資本日洋三千萬元公積日洋一千八百五十萬元英京倫敦各銀行如倫敦及司密夫聯合銀行倫敦聯會股票銀行及派耳銀行均爲本行之經理今將分行及經理處開列如下

安東縣　孟買　加耳谷塔　長春　大連　檀香山　香港　漢口　神戶　倫敦　來因司　遼陽　奉天　紐約　牛莊　長崎　大坂　旅順　北京　舊金山　東京　鐵嶺　天津　青島　哈爾濱　勞山及耳司

上海亦設分行　活支及定期存款利息均有銀兩洋圓均聽尊便　匯票可通日本高麗臺灣及中國各重要地方并歐洲印度美洲各通商處所并辦理各種銀行所辦各事宜

經理科大麥啟

# 克耶鎖鍵工廠露佈

Joseph Kaye & Sons Ltd., Lock Works, Leeds.

本公廠專製車門鎖鍵滑門門門精巧門鐶門鎖及門門等以應各種用品且製造鋸齒形無縫之純鋼油管承經註冊專賣爲英國之出品供應於英國水軍者不下六萬只大西鐵路大北鐵路蘭克省及雅克省間之鐵路倫敦及西南鐵路南斐洲及印度國有之鐵路均用此純鋼油管盛油也倘承不棄請來信定購是幸

工廠開設於英國离池

# 中國銀行廣告

THE BANK OF CHINA

本銀行於民國元年奉　政府命令設立兩年以來信用昭著總行設於（北京）分設（直隸省）天津　保定　邢台　灤縣　唐山　滄縣　濮陽　邢縣　磁州（山東省）濟南　青島　煙台　藤縣　濟寧　周村　惠民　益都　臨清　臨沂（河南省）開封　周口　彰德　漯河　信陽　道口（山西省）太原　運城　歸化城（江蘇省）上海　南京　鎮江　無錫　蘇州　揚州　淸江浦（安徽省）安慶　蕪湖　大通　徐州　下關　蚌埠（江西省）南昌（福建省）福州　南台（浙江省）杭州　寧波　蘭谿　嘉興　湖州　溫州　紹興（湖北省）漢口　沙市　宜昌（廣東省）廣州　江門　汕頭　瓊州　韶州　潮州（東三省）奉天　營口　安東　錦縣　大連　鐵嶺　長春　吉林　哈爾濱　齊齊哈爾　等處享有發行鈔票代理國庫之特權並辦理匯兌買賣生金銀往來存款定期存款抵押放款貼現放款代各公司商號或個人收取本埠及他埠票據款項保存有價證劵及一切貴重物件至匯兌一項無論通商大埠蕞爾遐陬凡本行已經分設者均屬便利所收匯費無不格外克已以副光顧諸君之雅意再本行發行鈔票準備充足凡完糧納稅發俸放餉官款出納商民交易以及應付鐵路輪船郵電一律通用現爲便利商民行使本行鈔票起見特於北通縣（海甸鎭）設立兌換所並於本京內外城商店繁盛之區委託殷實商號代兌本行鈔票如有多數鈔票請逕向（西交民巷）本行兌換可也茲將代理兌換處所開列於下

▲▲注意▼▼（東四牌樓）寶源銀號（安定門）會源銀號（東珠市口）隆茂源銀號（騾馬市）恆裕金店（西河沿）仁昌金店（後門）永通誠布店（新街口）益泰成布店（西單牌樓）和順公布店（後門）平易銀號（西單牌樓）益大銀號（又珠寶市爐房十家）恆盛銀號　同元祥爐房　德順號　聚起號　祥瑞興記　源豐號　復聚號　萬興號　全聚厚記　聚盛源爐房　再本總行營業時間開列如下　陽曆四月一日起至九月底止每日上午九點鐘起至下午四點鐘止由陽曆十月一日起至三月底止每日上午十點鐘起至下午四點鐘止

# 法蘭克司屈郎機器公司

Frank L. Strong Machinery Co.

本公司開設斐列濱經理各種機器并顧聞工程建築營造等事下列各製造廠均爲本公司駐斐列濱祗此一家之經理公司

總電汽公司　專製電汽應用材料器俱
匹登水輪公司　專製水輪
拿皮泡公司　專製車機升機
芝加哥抽機器俱公司　專製抽氣機壓氣機及附屬品
美國器俱工廠公司　專製車機鏷子製模俱半徑鑽頭
美國白羅耳公司　專製風車風房并通氣之器俱
白耶息比製造公司　專製研磨機器及各附屬品
鷹立球鋼鐵公司　專製鋼鐵器俱
立及悟特製造公司　專製鋸件
屈老司康克利鋼件公司　專製（康式）房屋物件
哇的司升機公司　專製坐客升機及貨物升機
押克製造公司　專製冰機
白考克威耳考克司公司　專製水管鍋爐
美國浣衣機器公司　專製浣衣機器
愛姆司鐵廠　專製汽機及鍋爐
灰衣搿安公司　專製鋸件及木工各種機器
古特立志公司　專製橡皮物件
耶耳土耐製造公司　專製鏈具及升機
查去倫公司　專製避水皮帶等件
火文哇温公司　專製（海密耳登可立司）式之汽機
克老搿轉轆俱及應用品公司　專製德律風器俱及附屬品
搿老克裝包公司

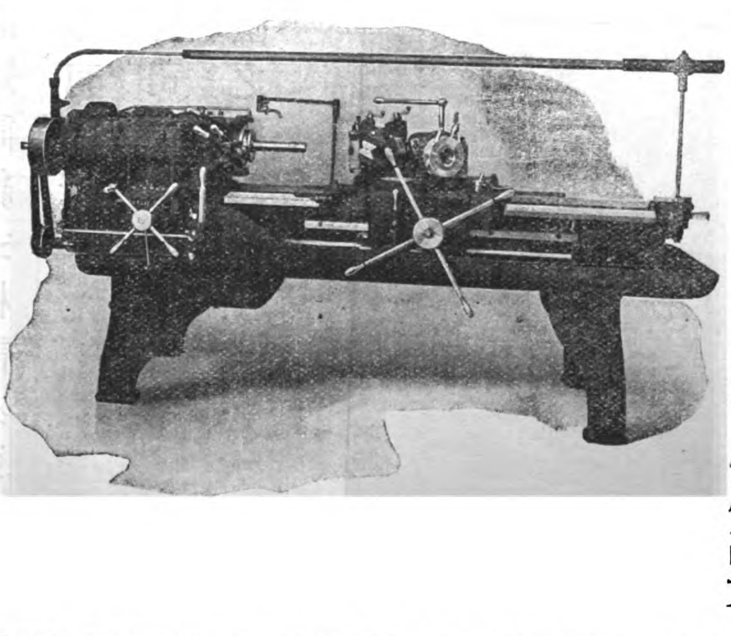
若承光顧無不歡迎電報密碼請用英字 Landstrong.



# 羣司蘭姆生機器公司

Jones & Lamson Machine Company.

此圖爲本公司所特之車床若能習學此機完美則得利可操勝劵也此車床爲車塔平面機其大小爲闊三吋長三十六吋專做鐵條柄軸等各種工件故此機及其作用　**能使工人并機器加增出品**　因用是項機器不必購用價值高貴之小另件配製工作也



總之製造此種車床之目的　**即費一文錢得一文錢之利於購者有莫大之利益**

欲知詳細章程請來函索取不費郵資

本公司開設　美國活忙脫省司不林飛而特　英國倫敦維多利亞街九七號

# 華愛德公司

本公司代聘全球著名工程師專包辦並經理各種工程兼各式工程物料已歷有年所成效昭著為各國官商各界所推許如蒙　惠顧請向下列各經理處接洽可也

美國紐約滙業處四十三至四十九號

英國倫敦克洛克路九號

J. G. White & Company



# 潑利司脫門弟兄公司廣告

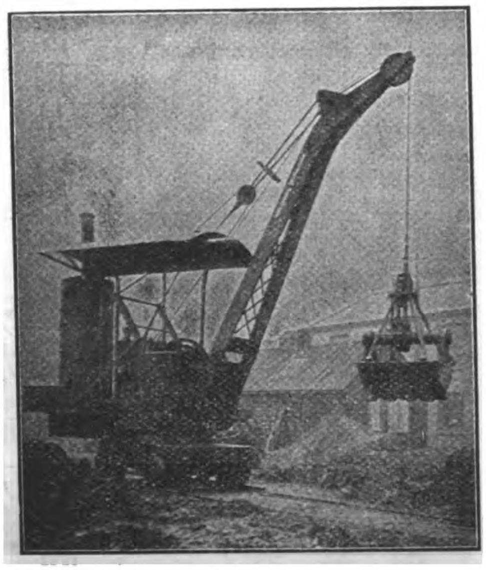
Priestman Brothers, Limited.

本公司專製掘泥機器挖泥機器及升降機器其兜之大小式樣共有一百五十種小自一立方呎起大至一百立方呎

若欲知詳細式樣請來函索取樣本可也

本公司開設英國倫敦

中國之經理處上海志大洋行



上圖為多兜挖泥機之一為大包工家大成公司所有

# 克來葛有限公司

A. F. Craig & Co., Ltd.

蘇格蘭丕士蘭城內

經理各項工程另有鑄

鐵廠汽鍋製造廠

經理　製糖機械　煉

糖機器各式俱備

事務所倫敦來頓好街

上海
漢口　凱衛倫洋行經理


# 交通部吉長鐵路客車時刻表

Kirin-Changchun Railway.

民國四年五月一日改定

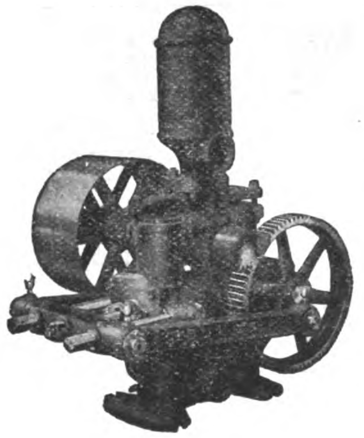
## 由吉林至長春頭道溝

| 站名 | | 上行車 第二次 客車 | 上行車 第四次 客貨車 |
|---|---|---|---|
| 吉林 | 開 | 下午二·二〇 | 上午六·一〇 |
| 九站 | 到 | 下午二·五〇 | 上午六·四三 |
| 九站 | 開 | 下午二·五三 | 上午六·四五 |
| 孤店子 | 到 | 下午三·〇七 | 上午七·〇三 |
| 孤店子 | 開 | 下午三·〇八 | 上午七·〇四 |
| 樺皮廠 | 到 | 下午三·一二 | 上午七·二〇 |
| 樺皮廠 | 開 | 下午三·一四 | 上午七·二三 |
| 趙家店 | 到 | | |
| 趙家店 | 開 | 下午三·四六 | 上午七·五八 |
| 土們嶺 | 到 | 下午四·〇六 | 上午八·一八 |
| 土們嶺 | 開 | 下午四·一二 | 上午八·二四 |
| 營城子 | 到 | 下午四·二三 | 上午九·〇三 |
| 營城子 | 開 | 下午四·二六 | 上午八·五〇 |
| 下九臺 | 到 | 下午四·四六 | 上午九·〇三 |
| 下九臺 | 開 | 下午四·五〇 | 上午九·〇五 |
| 飲馬河 | 到 | 下午五·〇四 | 上午九·二〇 |
| 飲馬河 | 開 | 下午五·〇六 | 上午九·二二 |
| 卡倫 | 到 | 下午五·二八 | 上午九·三五 |
| 卡倫 | 開 | 下午五·四〇 | 上午九·三七 |
| 長春 | 到 | 下午六·一〇 | 上午10·三一 |
| 長春 | 開 | 下午六·一五 | 上午10·三七 |
| 頭道溝 | 到 | 下午六·二五 | 上午10·四七 |

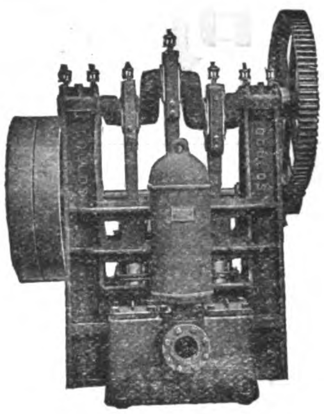
## 由長春頭道溝至吉林

| 站名 | | 下行車 第一次 客車 | 下行車 第三次 客貨車 |
|---|---|---|---|
| 頭道溝 | 開 | 上午七·二〇 | 下午二·二〇 |
| 長春 | 到 | 上午七·二八 | 下午二·二〇 |
| 長春 | 開 | 上午七·四一 | 下午二·四五 |
| 卡倫 | 到 | 上午八·一二 | 下午三·一〇 |
| 卡倫 | 開 | 上午八·一四 | 下午三·二五 |
| 飲馬河 | 到 | 上午八·四六 | 下午三·五八 |
| 飲馬河 | 開 | 上午八·四八 | 下午四·〇三 |
| 下九臺 | 到 | 上午九·〇三 | 下午四·一七 |
| 下九臺 | 開 | 上午九·〇四 | 下午四·二一 |
| 營城子 | 到 | 上午九·一六 | 下午四·二四 |
| 營城子 | 開 | 上午九·一八 | 下午四·二八 |
| 土們嶺 | 到 | 上午九·四〇 | 下午五·〇三 |
| 土們嶺 | 開 | 上午九·五〇 | 下午五·一二 |
| 趙家店 | 到 | | |
| 趙家店 | 開 | 上午10·10 | 下午五·三三 |
| 樺皮廠 | 到 | 上午10·三一 | 下午五·三七 |
| 樺皮廠 | 開 | 上午10·三三 | 下午六·〇三 |
| 孤店子 | 到 | 上午10·四六 | 下午六·一八 |
| 孤店子 | 開 | 上午10·四七 | 下午六·二〇 |
| 九站 | 到 | 上午11·〇三 | 下午六·二八 |
| 九站 | 開 | 上午11·〇五 | 下午六·四三 |
| 吉林 | 到 | 上午11·二五 | 下午七·〇五 |

# 美國顧爾機器廠

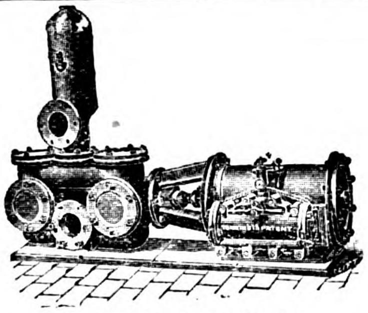


本廠開設已久爲中外各國所馳名專造各種大小抽水幫浦其三角抽水機爲尋常各廠家所最爲合用之機尙有如保險公司所用最爲靈巧便利之轉動抽水機此項機器甚爲輕便備爲消防之用尤爲合宜故凡保險公司俱有備置因其得輕便之利也其餘如自來水廠船廠各機器廠並礦井內外所應用之大小各式抽水機器無不俱全本廠係專造各項抽水幫浦故比他家式樣更多製造尤爲完善凡中外各國之賜顧者悉知本廠機件之精良造具之美備也欲知詳細情形請移玉至本行接洽可也

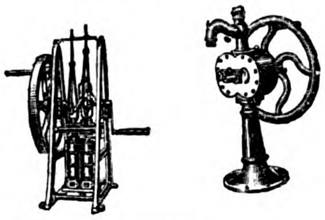


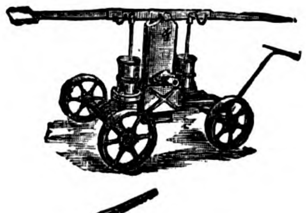
中國經售處上海圓明園路四號協愼隆昌洋行

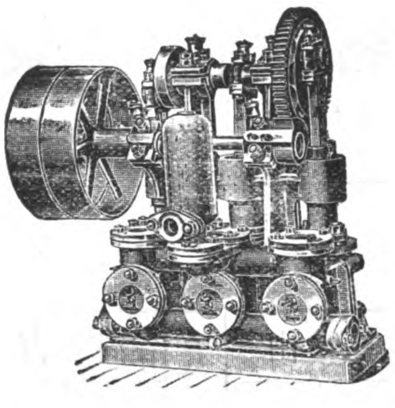
The Goulds Manufacturing Co.

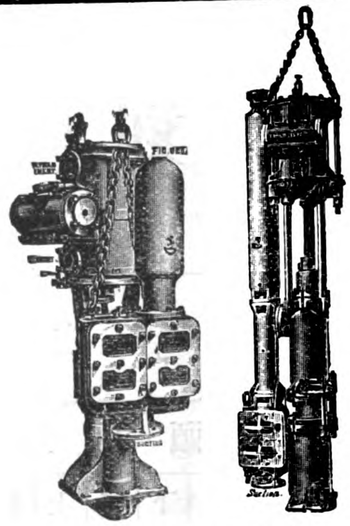


普通汽力抽水機









下垂抽水機
煤船煤礦所用

本公司製造各種抽水機專備工商各界採用各式全備不論使用何項動力如人工汽機皮帶風車水電各力之類均能適用如蒙函詢即將東方目錄寄奉

英國華亨頓城
伊凡斯公司謹啟

Joseph Evans & Sons

# 正太鐵路客車時刻表

The Cheng-Tai Railway

## 上行各車

| 站名 | 頭等元 | 頭等角 | 二等元 | 二等角 | 三等元 | 三等角 | 慢車開點 | 慢車開分 | 客貨車開點 | 客貨車開分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 石家莊 | | | | | | | 七 | 〇三 | 七 | 三十 |
| 大郭村 | | 五 | | 三 | | 二 | 七 | 十六 | 七 | 四五 |
| 獲鹿縣 | | 九 | | 五 | | 三 | 七 | 三二 | 八 | 〇三 |
| 頭泉 | 一 | 二 | | 七 | | 四 | 七 | 五一 | 八 | 二三 |
| 白王莊 | 一 | 五 | | 八 | | 五 | 八 | 十一 | 八 | 四六 |
| 五里鋪 | 一 | 七 | 一 | | | 六 | 八 | 二一 | 八 | 五八 |
| 微水 | 二 | 一 | 一 | 一 | | 七 | 八 | 三六 | 九 | 十五 |
| 南橫口 | 二 | 三 | 一 | 三 | | 八 | 八 | 四九 | 九 | 二九 |
| 南張村 | 二 | 五 | 一 | 四 | | 九 | 九 | 〇二 | 九 | 四三 |
| 井陘縣 | 二 | 八 | 一 | 五 | 一 | | 九 | 二五 | 十 | 十五 |
| 北峪 | 三 | 一 | 一 | 七 | 一 | 一 | 九 | 三六 | 十 | 四一 |
| 南峪 | 三 | 三 | 一 | 八 | 一 | 一 | 九 | 四七 | 十 | 五一 |
| 娘子關 | 三 | 六 | 二 | | 一 | 二 | 十 | 十八 | 十一 | 十七 |
| 程家隴底 | 四 | | 二 | 二 | 一 | 四 | 十 | 三四 | 十一 | 三四 |
| 下盤石 | 四 | 五 | 二 | 四 | 一 | 五 | 十 | 五十 | 十一 | 五二 |
| 巖會 | 四 | 八 | 二 | 六 | 一 | 六 | 十一 | 〇四 | 十二 | 十四 |
| 亂流 | 五 | 三 | 二 | 九 | 一 | 八 | 十一 | 二四 | 十二 | 三六 |
| 白羊墅 | 五 | 六 | 三 | 一 | 一 | 九 | 十一 | 三八 | 十二 | 五二 |
| 陽泉 | 五 | 八 | 三 | 二 | 二 | | 十二 | 三七 | 十三 | 二十 |
| 賽魚 | 六 | 二 | 三 | 四 | 二 | 一 | 十二 | 五三 | 十三 | 三七 |
| 坡頭 | 六 | 五 | 三 | 六 | 二 | 二 | 十三 | 〇九 | 十三 | 五四 |
| 測石驛 | 六 | 八 | 三 | 七 | 二 | 三 | 十三 | 三二 | 十四 | 十六 |
| 芹泉 | 七 | 三 | 四 | | 二 | 五 | 十三 | 五六 | 十四 | 四十 |
| 壽陽縣 | 七 | 八 | 四 | 二 | 二 | 六 | 十四 | 十九 | 十五 | 十三 |
| 郭村 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 三二 | 十五 | 二九 |
| 上湖 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 四七 | 十五 | 四六 |
| 盧家莊 | 九 | | 四 | 九 | 三 | | 十五 | 〇三 | 十六 | 十 |
| 段廷 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 十八 | 十六 | 二七 |
| 東趙村 | 九 | 八 | 五 | 三 | 三 | 三 | 十五 | 三四 | 十六 | 四六 |
| 北合流 | 十 | 二 | 五 | 五 | 三 | 四 | 十五 | 四七 | 十七 | 〇三 |
| 榆次縣 | 十 | 五 | 五 | 七 | 三 | 五 | 十六 | 〇九 | 十七 | 三三 |
| 鳴李 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二一 | 十七 | 四七 |
| 北營 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 三三 | 十八 | 〇一 |
| 太原府 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 四五 | 十八 到 | 十五 |

## 下行各車

| 站名 | 頭等元 | 頭等角 | 二等元 | 二等角 | 三等元 | 三等角 | 慢車開點 | 慢車開分 | 客貨車開點 | 客貨車開分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 太原府 | | | | | | | 七 | 五三 | 八 | 〇六 |
| 北營 | | 五 | | 三 | | 二 | 八 | 〇七 | 八 | 二一 |
| 鳴李 | | 八 | | 五 | | 三 | 八 | 十九 | 八 | 三四 |
| 榆次縣 | 一 | 二 | | 七 | | 四 | 八 | 四五 | 八 | 五九 |
| 北合流 | 一 | 六 | | 九 | | 六 | 八 | 五九 | 九 | 十四 |
| 東趙村 | 二 | | 一 | 一 | | 七 | 九 | 十三 | 九 | 二九 |
| 段廷 | 二 | 四 | 一 | 三 | | 八 | 九 | 二九 | 九 | 四七 |
| 盧家莊 | 二 | 八 | 一 | 五 | 一 | | 九 | 四五 | 十 | 〇七 |
| 上湖 | 三 | 二 | 一 | 八 | 一 | 一 | 十 | 〇三 | 十 | 二六 |
| 郭村 | 三 | 六 | 二 | | 一 | 二 | 十 | 十九 | 十 | 四三 |
| 壽陽縣 | 四 | | 二 | 二 | 一 | 四 | 十 | 三七 | 十一 | 〇七 |
| 芹泉 | 四 | 四 | 二 | 四 | 一 | 五 | 十 | 五三 | 十一 | 二四 |
| 測石驛 | 四 | 九 | 二 | 七 | 一 | 七 | 十一 | 十三 | 十一 | 四七 |
| 坡頭 | 五 | 二 | 二 | 八 | 一 | 八 | 十一 | 二五 | 十二 | 〇一 |
| 賽魚 | 五 | 六 | 三 | | 一 | 九 | 十一 | 三八 | 十二 | 十九 |
| 陽泉 | 五 | 九 | 三 | 二 | 二 | | 十二 | 三九 | 十三 | 三五 |
| 白羊墅 | 六 | 一 | 三 | 三 | 二 | 一 | 十二 | 五· | 十三 | 五一 |
| 亂流 | 六 | 四 | 三 | 五 | 二 | 二 | 十三 | 〇四 | 十四 | 〇八 |
| 巖會 | 七 | | 三 | 八 | 二 | 四 | 十三 | 二四 | 十四 | 三七 |
| 下盤石 | 七 | 三 | 四 | | 二 | 五 | 十三 | 四十 | 十四 | 五三 |
| 程家隴底 | 七 | 七 | 四 | 二 | 二 | 六 | 十三 | 五七 | 十五 | 十二 |
| 娘子關 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 十七 | 十五 | 四五 |
| 南峪 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 三三 | 十六 | 〇一 |
| 北峪 | 八 | 七 | 四 | 七 | 二 | 九 | 十四 | 四二 | 十六 | 十二 |
| 井陘縣 | 九 | | 四 | 九 | 三 | | 十四 | 五八 | 十六 | 五五 |
| 南張村 | 九 | 二 | 五 | | 三 | 一 | 十五 | 十 | 十七 | 〇九 |
| 南橫口 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 二一 | 十七 | 二一 |
| 微水 | 九 | 七 | 五 | 三 | 三 | 三 | 十五 | 三三 | 十七 | 三五 |
| 五里鋪 | 十 | | 五 | 四 | 三 | 四 | 十五 | 四九 | 十七 | 五五 |
| 白王莊 | 十 | 二 | 五 | 六 | 三 | 四 | 十五 | 五八 | 十八 | 〇六 |
| 頭泉 | 十 | 六 | 五 | 七 | 三 | 六 | 十六 | 十三 | 十八 | 二三 |
| 獲鹿縣 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二八 | 十八 | 五七 |
| 大郭村 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 四十 | 十八 | 五七 |
| 石家莊 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 五一 | 十九 到 | 〇十 |

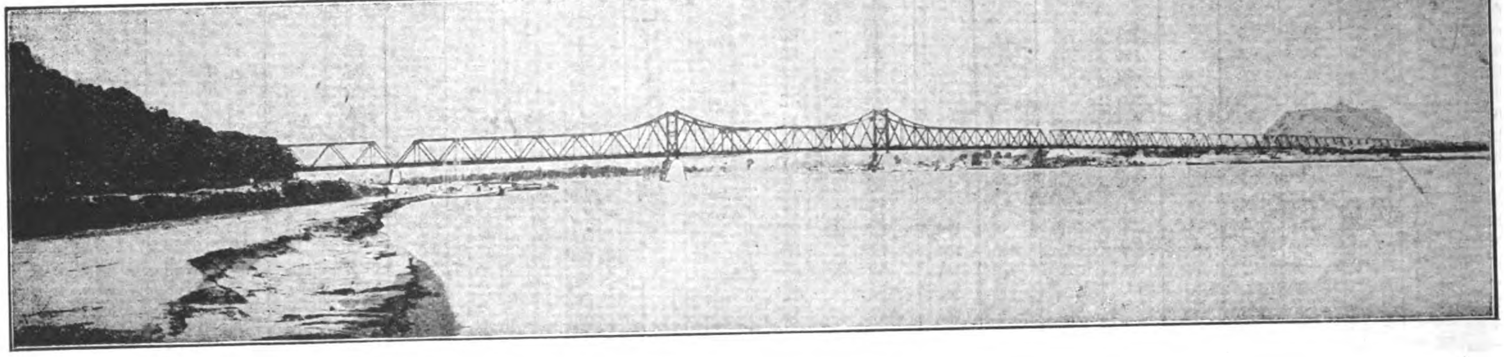

# 百祿鋼廠

## 專製著名奧國司的林器械鋼料

本廠在上海備有風鋼及局廠中所必需之高等生鋼開礦築路一切應用器具鋼料銼刀及鋼上繩索炮槍筒子幷軍用各種火藥凡外洋國家所設局廠均立有承攬各國大省設有分行在中國設辦事處於上海江西路十號

Bohler Bros. & Co., Ltd.

# 津浦鐵路



## 津浦鐵路局改訂特別通車時刻廣告

本路特別通車上下開到時刻現經改訂與京奉膠濟滬甯等路客車上下銜接自本年十二月一日實行茲將改訂時刻暨各路銜接時刻開列如左

### 下行車

京奉路由瀋陽來之通車星期六日上午十鐘三十五分到天津東站

本路特別通車星期六日上午十一鐘二十分由天津東站開

京奉路由北京來之快車每日上午十一鐘二十五分到天津總站

本路特別通車星期六日上午十一鐘四十八分由天津總站開

膠濟路由青島來之快車每日下午五鐘五十九分到濟南

本路特別通車星期六日下午八鐘十二分由濟南開星期日下午一鐘十三分到浦口

滬甯路開往上海之快車星期日下午二鐘三十五分由南京開是日下午八鐘二十分到上海

### 上行車

滬甯路快車星期一日上午七鐘十分由上海開十二鐘三十分到南京

本路特別通車星期一日下午一鐘四十五分由浦口開星期二日上午六鐘四十分到濟南

膠濟路開往青島之快車每日上午八鐘由濟南開

本路特別通車星期二日下午二鐘三十三分到天津總站二鐘五十三分到天津東站

京奉路開往北京之快車每日下午三鐘四十五分由天津東站開其開往瀋陽之通車星期三日上午一鐘二十五分由天津東站開

客商星期六日由京來津換乘本路特別通車南行者務請在總站過車勿到東站以免趕車不及

再客商星期六日上午八鐘三十分由北京起程星期日下午八鐘二十分即到上海其由上海北行者星期一日上午七鐘十分起程星期二日下午六鐘五十五分即到北京每次需時不足三十六鐘洵屬最捷之徑順此附告

**特別注意**

Chinese Government Railways—Tientsin-Pukow Line

Hongkong & Whampoa Dock Co., Ltd.

## 香港黃埔船澳有限公司廣告

本公司承接製造各種機器鐵路火車橋梁河海明暗輪船拖船淺水火船載客運貨大小快捷毛打輪船舉凡一切水陸起重器機爐鑊鎔鑄銅鐵器具電鍍等等工程並常有大單銅鐵螺絲角鐵鋼板鐵板等料躉賣加以本公司置有大石澳六所旱排二座以便大小船艦入澳之用洵鉅製也

諸君光顧凡有船隻裝修無論大小工程莫不應期完備庶不妄費時日又且工精料美價亦相宜如蒙惠顧請問總司理人 R. M. DYER可也

茲將各澳地址尺寸開列於後

| 澳名 | 澳底長 | 澳口闊 | 水深 |
|---|---|---|---|
| 九龍第一號澳 | 七百尺 | 面八十六尺 底七十尺 | 三十尺 |
| 九龍第二號澳 | 三百七十一尺 | 七十四尺 | 十八尺六寸 |
| 九龍第三號澳 | 二百六十四尺 | 四十九尺三寸 | 十四尺 |
| 九龍第一號旱排 | 二百四十尺 | 六十尺 | 十四尺 |
| 九龍第二號旱排 | 二百二十尺 | 六十尺 | 十二尺 |
| 深水埔澳 | 四百六十六尺 | 八十五尺六寸 | 二十尺 |
| 香港仔第一號澳 | 四百三十尺 | 八十四尺 | 二十三尺 |
| 香港仔第二號澳 | 三百三十三尺 | 六十四尺 | 十六尺 |

本公司通電處乃用 MANIFESTO HONGKONG
香港寫字樓電話第二十號
本廠寫字樓電話第十三號 K
呂宋代理處 FINDLAY & CO., MANILA, P. I.

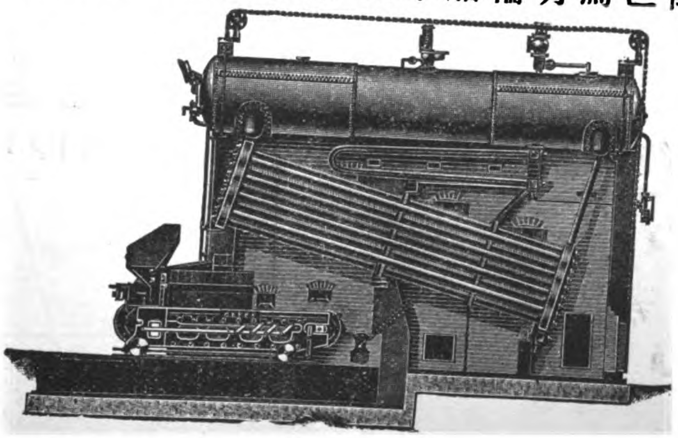
## 拔柏葛魏閣司有限公司

Babcock & Wilcox, Ltd.

## 製造特別水筒鍋鑪

此項鍋爐曾經置用或經定購者計陸地所用共有
一千一百萬匹馬力輪船軍艦所用共有二百五十萬匹馬力

本公司陸地所用之鍋爐與加增熱力機器及最新自行燃煤之帶鍊機器係屬相連用之於電燈紡織麵粉造紙織呢兵工造幣礦務水泥自來水等廠最爲合宜



此係陸地所用水筒鍋爐加增熱力機器及
最新自行燃煤之帶鍊機器相連圖樣

本公司專造加增熱力機器自行燃煤之帶鍊機器蓄熱機器電力起重機器起卸煤之機器鋼質烟囱及輪船軍艦所用之鍋爐等

公司之中國總辦事處在上海四川路一百零三號

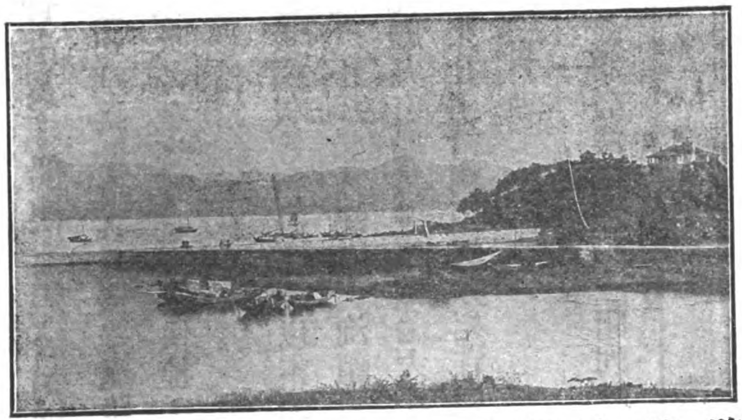
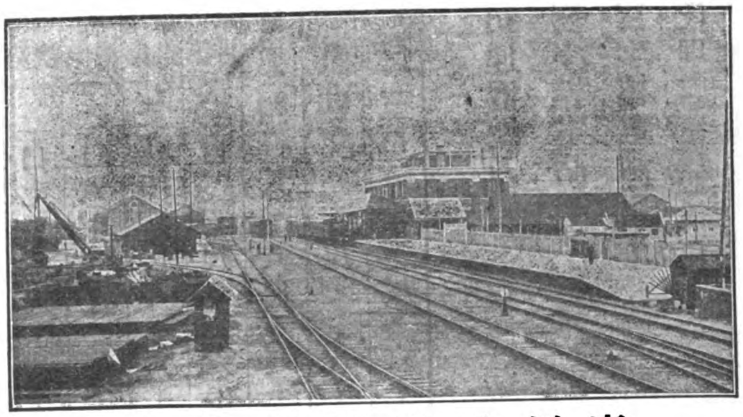
製造廠設在英德法美等國

# 廣九鐵路

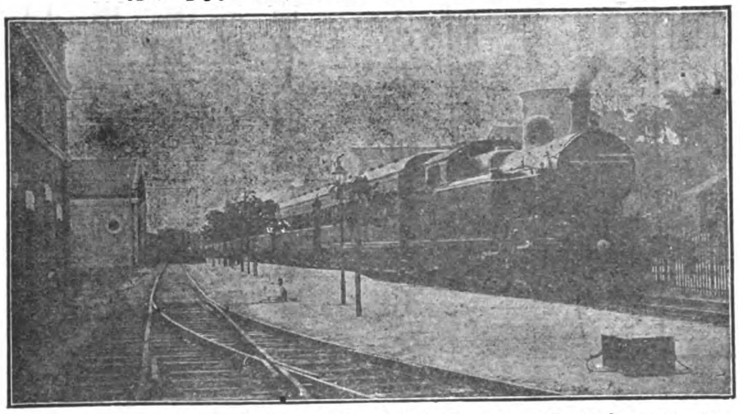
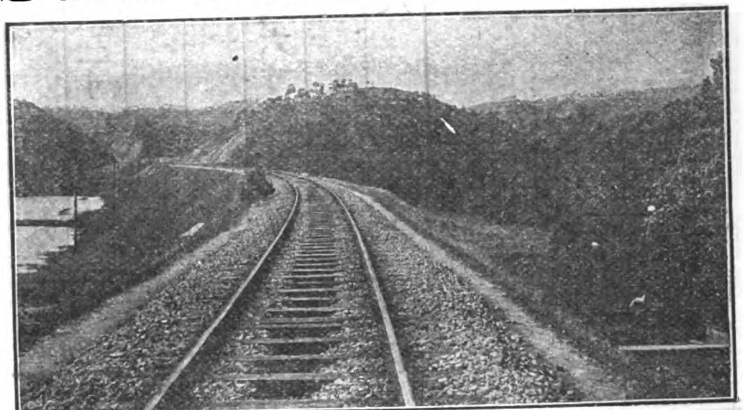
下列乃華段圖景該段八十九英里

Canton-Kowloon Railway

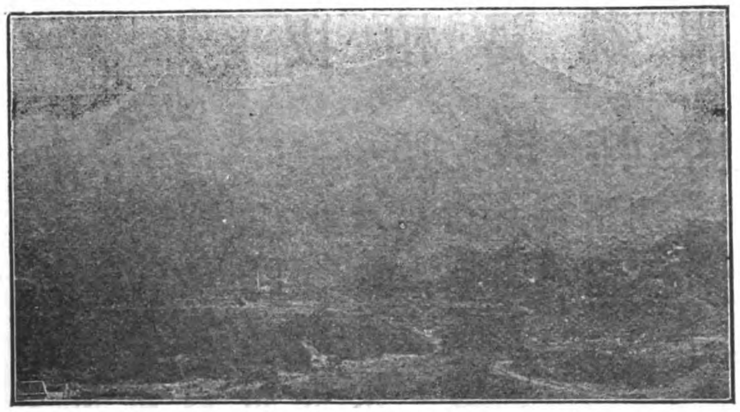
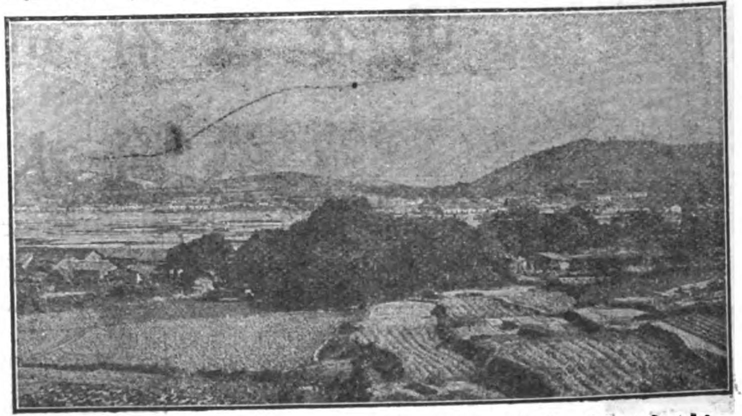
下列乃英段圖景該段二十二英里

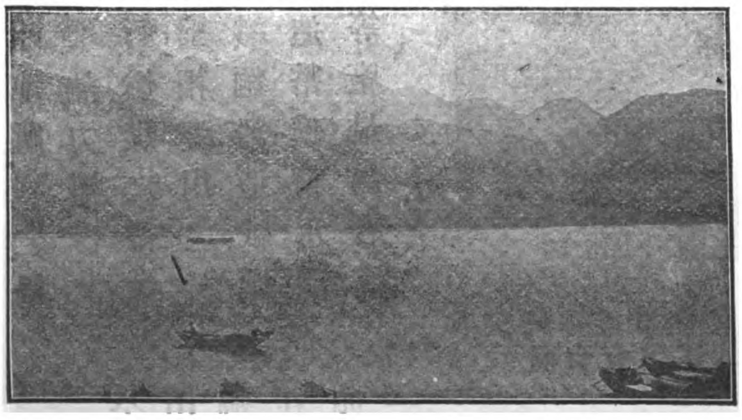
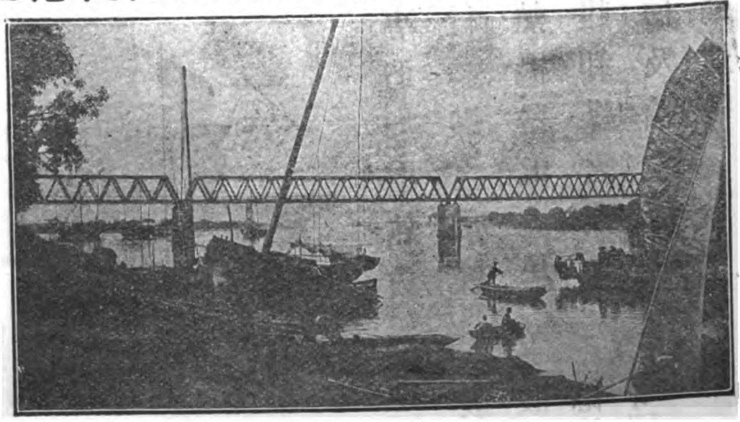
廣州香港間最捷最廉之路線所兼經各處之景緻

每日省港有直通快車貳次來往並有西膳茶點以備搭客不時之需

富商遊客搭快車可即日來回在港在各有四點餘鐘之久儘可從容專辦

謹將本年夏天時刻表開列於下

香港開
上午六點三十五分快車
上午十一點十五分
上午十二點五十五分

廣東到
上午十點四十分快車
下午六點十分
上午四點三十分快車

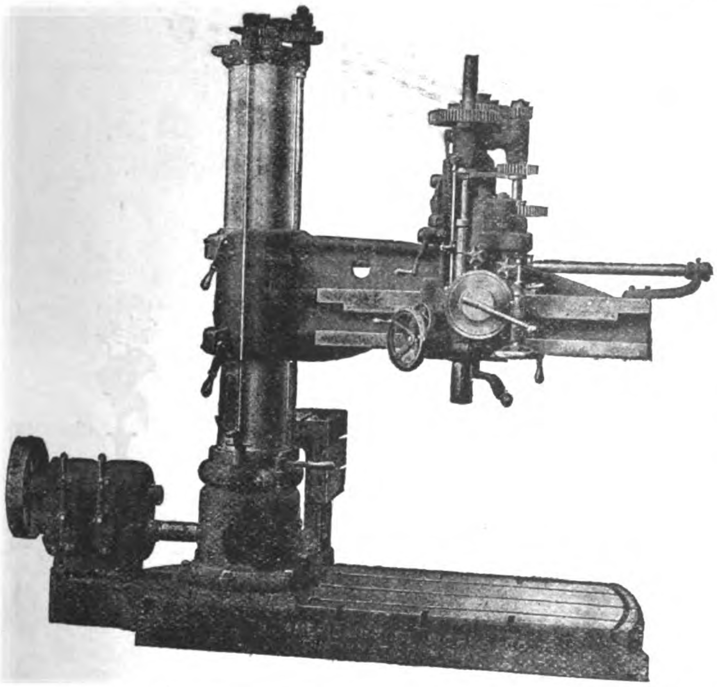
廣東開
下午七點快車
上午八點三十分
上午十二點快車
下午四點二十分快車

香港到
上午十點三十分快車
下午四點十四分
下午三點五十二分快車
下午七點五十二分快車

並備有專車租賃車費從廉如欲知詳細者請看告白或問省城及香港鐵路總局可也

# 美國機器公司

The American Tool Works



本公司專製各式車牀轉牀鉋床等久爲全球所推許無煩贅述近又新發明一種**阿美利加距半徑轉牀**其靈活便利較從前各種機牀有過之無不及且**質料堅固製造精良**以之裝配各物**分量甚準**無絲毫之錯亂可爲機器界中別出心裁最有價值之品其形式大小不一有二尺二尺半三尺三尺半四尺五尺六尺七尺不等或用皮帶或用馬帶均可應用若欲樣本請來函至本公司取閱可也

**總發行所美國哇哈華省新新納搭城**

# 愛鍊純鋼廠

在英國希斐爾特地方

## 鹿牌鋼

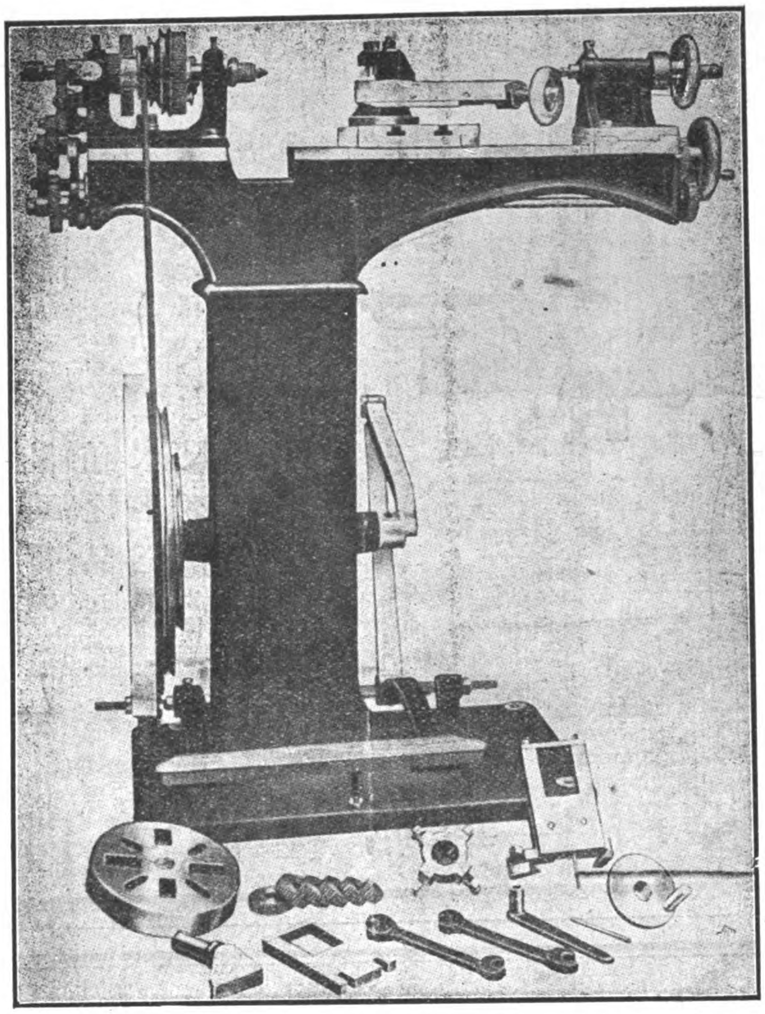
本廠專鍊各種各式尺寸鋼料爲寰球各製造局造幣廠礦務局機器廠打鐵廠等處所用並造超等鎗管鎗彈吸鐵鋼風硬器具快鋼彈簧鋼兼造銼刀快絞絲鑽鋸錘鋼條鋼片汽車特別鋼料錳質碎石鋼鐵路及電車分路叉橫軌等以及碎礦鋼料並造彈球管子水坭機器一應俱全

賜顧者請臨上海二馬路外灘B字一號接洽或函致亦可

獨家經理上海漢口泰來洋行白

Edgar Allen & Co., Ltd., Sheffield, England.

# 怡和洋行機器房廣告



本行分設滬濱數十餘載專辦各種機器如下　鐵軌　車輪　車頭　紡織機　磨麪機　搾油機　碾米機　磚瓦　鋸木牀　造紙機　印書機　鎗礮　製革機　電燈　餅乾　火力引擎　煤氣引擎　火油引擎　鍋爐　發電機　開礦吸水機及馬達引擎等並常備現貨如下

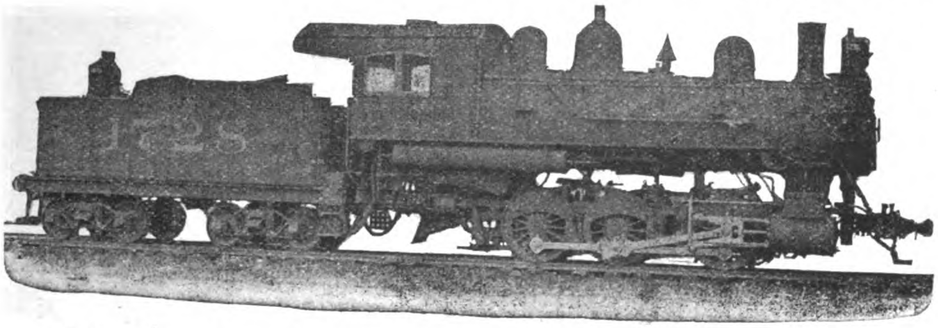
火力引擎　煤氣引擎　立式鍋爐　吸水機　手搖吸水機　大小車床　修機應用各件　淨茶機　紙百　配更　皮帶等其餘一切零件不及詳載倘蒙賜顧無不歡迎定價亦格外克己請至圓明園路本帳房接洽電話一零九六

Jardine, Matheson & Co.

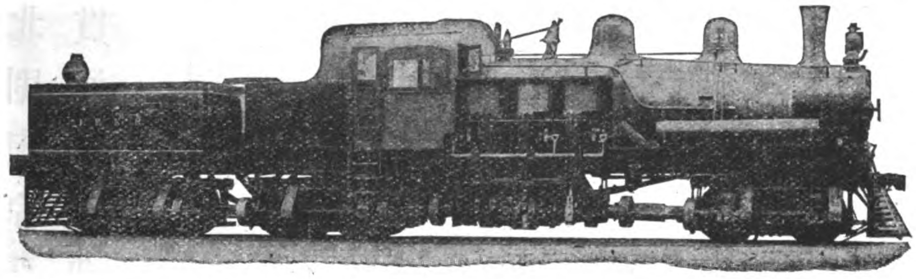
# 賚瑪火車公司

Lima Locomotive Corporation

本公司專造各種火車頭式樣玲瓏質料堅固或用橫桿式或用齒輪式務求輕便靈捷至速率及拖重力尤非尋常者所可比擬



此圖爲本公司代美國南部鐵路所造之十五輛二十寸暨二十六寸轉轍式之火車圖樣



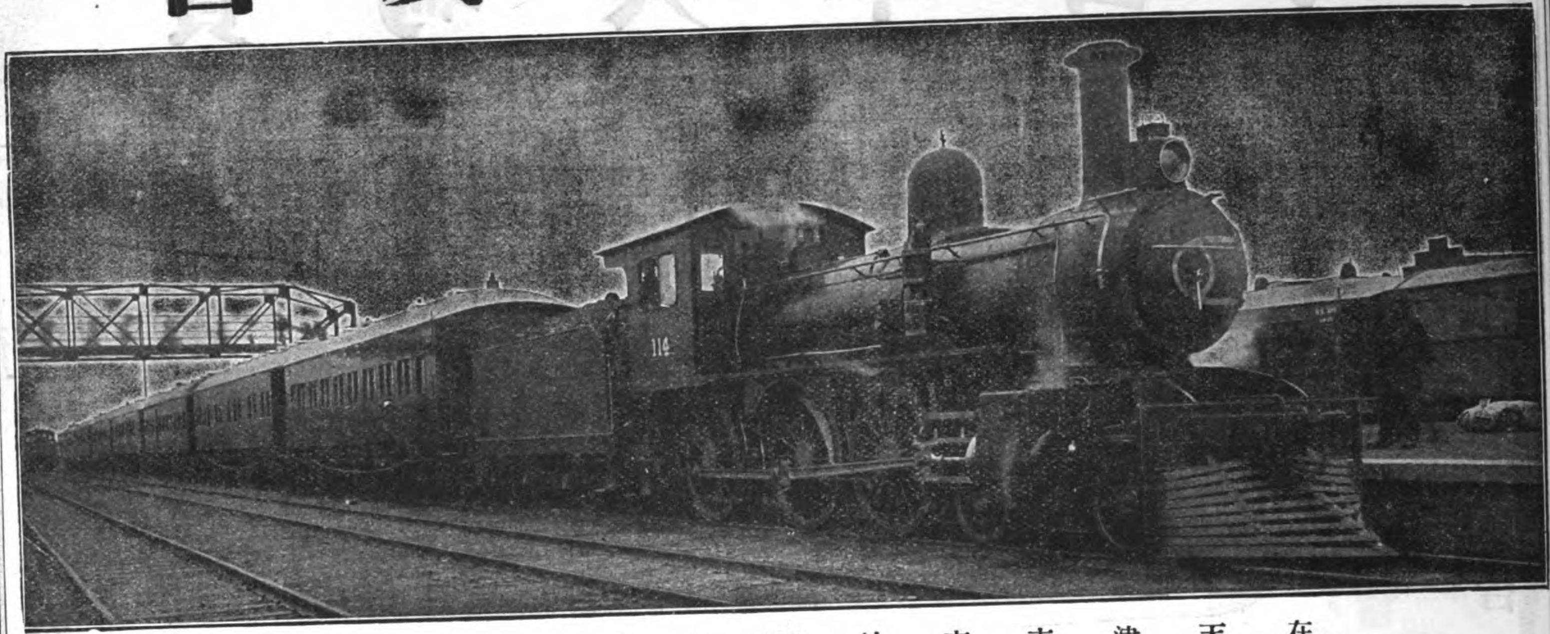
此圖爲本公司代中國京張鐵路所造三輛齒輪式一百噸重之火車圖樣

製造火車不獨求其堅固而且取其靈活本公司各種出品久爲東西各國所推許近年更大加擴張所聘工師均爲歐美著名家所用機器亦均係新式以故所造各種車頭既能堅固復靈活而穩妥不惟於康莊平坦之大軌道能行止自如即以行駛於山嶺曲徑之小軌道亦能旋轉如意且特製齒輪式之拖重車其重力能拖十噸至一百五十噸其餘花樣繁多均載B字樣本中欲閱者來函索取當即寄奉

總發行美國哇亥俄省賚瑪城

分售處中國（香港 上海 廣東 天津）新旗昌洋行

# 京奉鐵路廣告



在天津東車站停放之床位通車

啓者本路路綫係與附近各路互相聯絡東則接連南滿路可達歐洲南則接連京漢路可達長江一帶商埠由京漢路中心點并可達至正太路之太原府道清路之開封府汴洛路之河南府北則與京張路綫相連可達至萬里長城四面貫通無遠弗屆本路綫所經名勝如北京

北京車站

通車頭等睡房

瀋陽之皇陵殿宇天津之北方商務總匯唐山之工廠礦務山海關之萬里長城牛莊之南滿洲商埠俱屬繁盛之區足供遊覽至京瀋直達通車每星期來往一次備有飯車睡房精潔適意以便行旅而廣招徠倘蒙
光顧毋任歡迎之至特此佈告

Chinese Government Railways of North China

# 美國紐約克美孚油行廣告

The Standard Oil Company of New York

本行所出之**鎖可聶瀝青油**為生瀝青油由格致術所製成如欲引長其效用黏合其物質柔固其原料以及天氣溫熱度之容納無不隨心所願

**鎖可聶瀝青油**可用於任何堅硬之物不加他種之油亦合於用

下列之各處均可用此**鎖可聶瀝青油**

建築永久之道路　屋頂水路工廠地板拍球圜場　水溜管洞

用於鐵路車結處電桿電柱等處　包鋼質建築物及溝管等物

**鎖可聶瀝青油**可用於法侖表熱二百二十一度之融點故於最熱之天氣亦合用適度也**鎖可聶瀝青油**非試用之物乃合衆國多年實用之油功效最著之物品也

欲知詳細請函達上海五馬路十一十二號

美國紐約克美孚油行光油部可也

# 克老⿰犭哥德律風器俱供應公司廣告

Kellogg Switchboard & Supply Co. Kellogg system.

克老⿰犭哥公司所出之各種德律風器俱為世界最完備最高上之供應公司其出品為他公司所不及者最大之電池即用多轉轍板故於各處均合時宜如工部局小鄉鎮旅館醫院鐵路礦務處工廠以及輕便手攜之德律風無不各處通行且克老⿰犭哥德律風之筒能永久不壞因筒之內外非錫所包乃銅質所製以最上等之橡皮鑲嵌而成又以壓機壓實故使傳話者聽話者均聲浪清細無異面談也三十二號愛字聽筒及三十六寸電絨毛繩售價英金六仙令若欲知詳細者請來函索取本公司之器俱樣本為荷

**公司開設美國** 舊金山 支加哥 甘色斯

# 勒克洛炸藥

又名勒辣司丁泡特係**開山開礦用最大爆力之炸藥**其質共有二類一硬質一流質兩種未參合時分裝二處決無炸裂之患并無須多費存放在火藥棧倉內祇置放乾爽地方不論何處均極相宜此藥參合後**較之別種炸藥更為穩當**藥粉裝法用一布捲筒對徑六分或至二寸長六寸半或至八寸為度即可應用製造廠林洛泡特公司在美國紐約華爾街一百零六號

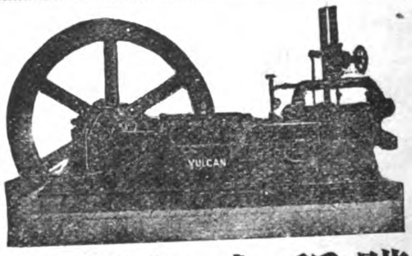
Rendrock Powder Co.

美國舊金山

# 瓦爾根製冰機器廠

Vulcan Iron Works

圖為製冰機之一種



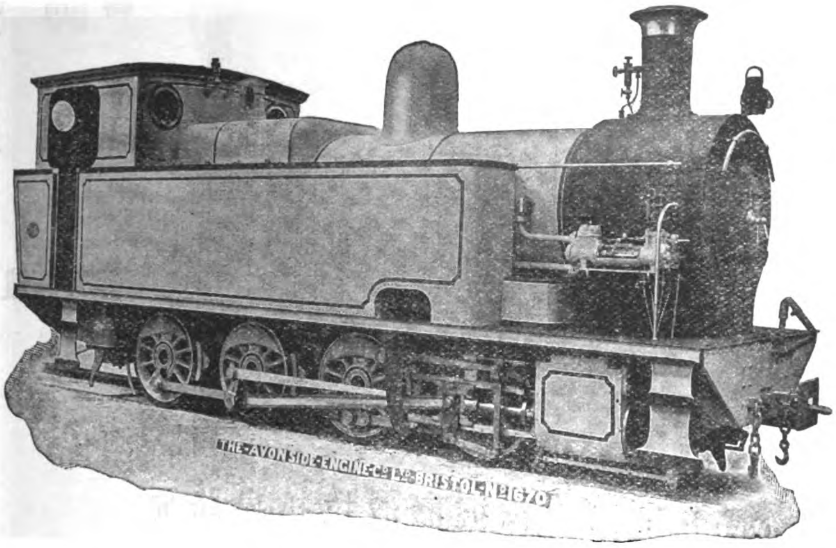
花色繁多不及備載

**本廠專造各式製冰機器運銷各地蒙購辦諸君謬加推譽稱為靈便合用本廠自當精益求精以期仰副　雅意現在製備各種新式機器或大或小花樣俱全如欲取閱樣本函索即奉特此佈告**

電碼 "Vulcan" San Francisco

## 愛望賽機器公司廣告

AVONSIDE ENGINE Co., Ltd.




本公司專造汽機及引火之各種火車汽機本公司開設英國百立司篤耳

電報用英字請看英文告白

## Roofing Malthoid

麻鞸屋頂氈已為上等工程師及繪圖師詳說之且為上等工匠用在遠東一切奇異房屋之中

麻鞸屋頂氈已試用多次實可認為屋頂氈之標準

安置此項氈時須照本公司章程鋪釘方保無虞

如要說明書及樣子請向最近之代理店取閱可也

### 中國代理處

上海 怡泰洋行

天津 仁記洋行

漢口 太平洋行

香港廣東 瑞記洋行

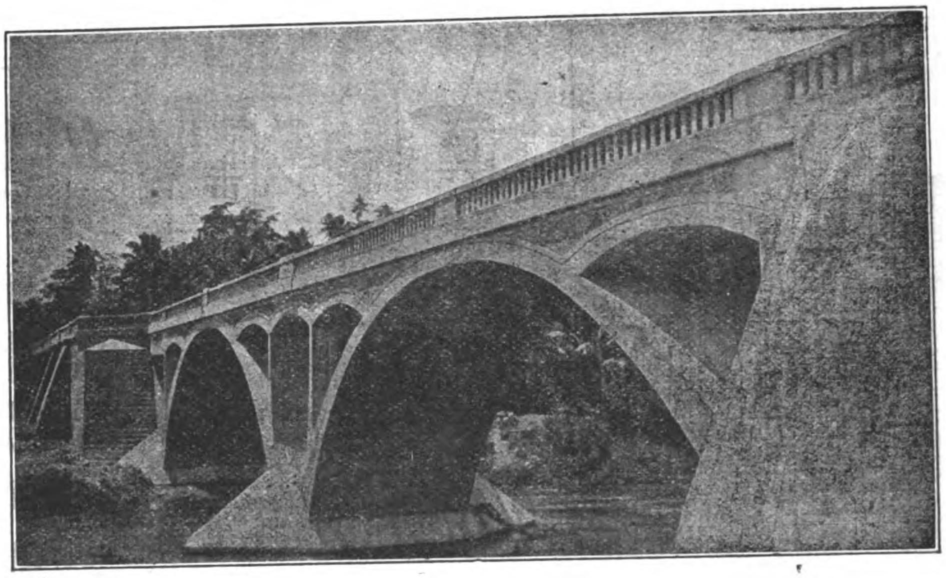
# 青洲英泥

Green Island Cement Company, Ltd.

燒青泥磚

大小明暗瓦溝

水斗等器



花階磚

大階磚

火爐磚及泥

亞路車扒拉波歷握橋用二千五百桶青洲英泥而建成

代理分銷處

架刺吉打　端拿摩利臣公司
新加坡　士滔片民
長口及澳口壹帶渣甸洋行
仰光　希活
孟米　士片拿公司
庇能　列公司
中國海岸及臺灣渣甸洋行

本行在別埠代理處

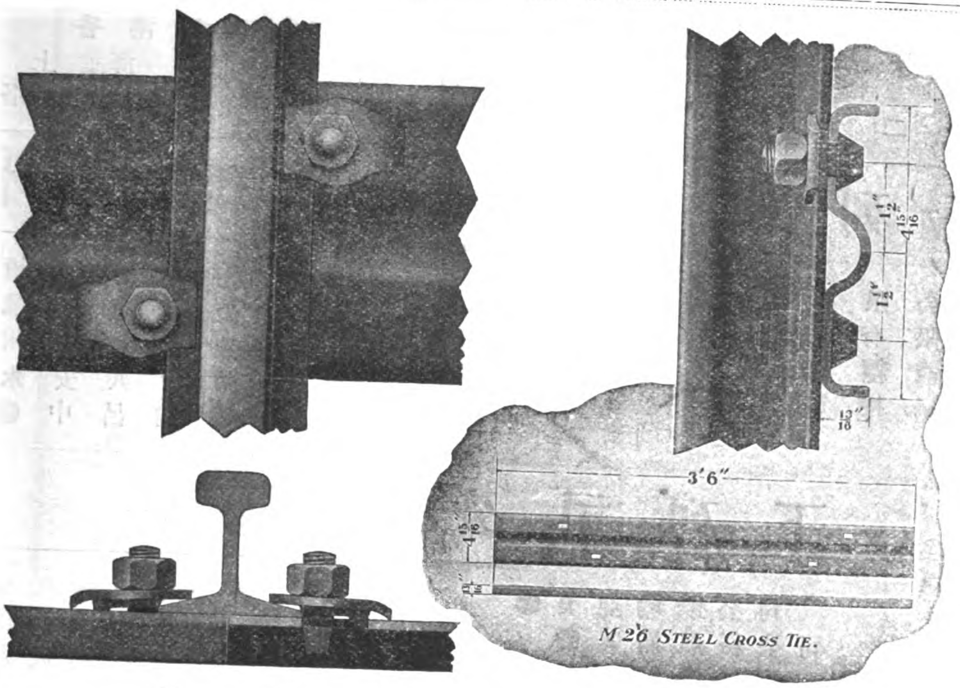
上海支行
日本支行
天津支行

非律賓羣島全權代辦人小呂宋威廉晏打臣公司

# 美國鋼鐵公司

上海江西路廿四號A

電碼 Steelyard Shanghai




此圖表明本公司所造各種鐵軌及繫結鋼條輕便而且堅固

鋼鐵各物取其堅固尤取其靈活非徒以笨重爲可貴也本公司所造各種鐵道及機器等件并鍋爐上應用之各式繫結鋼條既稱堅固復能靈活久爲全球所推許兹將自製鋼鐵諸品節錄於左

鐵軌　接軌鋼條　鋼節　鋼釘
鋼板　建築所用鐵柱　鐵條
鐵板　鐵管　各式角板　火車電車車輪　鑛穴中或油井內所用一切鋼鐵機器　各式輪軸
橋梗鎔鐵爐以及各種鐵甲板

以上所述特其大略其餘名目繁多不及備載　惠顧諸君請移玉至本公司面議可也

United States Steel Products Company

# 新旗昌洋行

本行佈設英京神戶廣州香港上海天津紐約等處專辦出入口貨代理船務及抽佣經理人

香港書信箱號數第壹百三十一號卑字
上海郵政局信箱第八十四號
各枝行掛號電報碼用旗昌二字

## 本行總司理各公司列下

● 非律賓輪船有限公司
● 維新織造有限公司
● 廣州省城置地有限公司
● 永安人壽保險有限公司
● 中呂輪船有限公司
● 勢力電燈有限公司
● 青洲英坭有限公司
● 香港麻纜織造有限公司
● 均益按揭有限公司

## 代理各公司列下

● 厘拉仁士洋面保險有限公司
● 大洋海面保險有限公司
● 泗水海及火燭保險有限公司
● 英北及商務保險公司
● 羅天仁保險有限公司
● 煜合燕梳有限公司
● 北美燕梳公司
● 上洋軟藥及紙料有限公司
● 美亞輪船公司
● 美滿航務公司
● 祁連航務有限公司
● 香港電車有限公司
● 楊子燕梳有限公司
● 地球洋面保險有限公司
● 大洋意外保險有限公司

## 上海英商新旗昌洋行機器處廣告

本行樓子房現設江西路六號電話三四八七號

本行經理各種機器如紡織碾米榨油磨麵造紙開礦墾荒抽水挖坭大小火輪全副引擎鍋爐及火車頭客車貨車鐵路材料並自來水一切物件其餘鋸木車鑽刨床各式大小引擎鍋爐及磨電機發動機煤氣引擎發煤氣機以及得律風電燈電氣應用一切另件等具色色俱全均係外洋著名廠家特別精造新式玲瓏堅固但各項名目繁多未便盡載倘承賜顧或蒙函詢當即竭誠詳細奉答價亦格外克己以廣招徠尚祈惠臨方知言之不虛也

## 在中國全權代表各公司列下

減墮路城火車工廠
澳地士依里威滔公司
波路深孖汽喉公司
拋亞瓦斯合股有限公司
拋亞不厘有限公司
李孖普鐵廠
倫深未禪及制花利有限公司
盧參士歷滔有限公司
船主琴實使順有限公司
所利雲機器公司
爲拉列地有限公司
華臣製造公司
和蛙連毛滔工廠
裝鐵路燈工廠
壓活公司
占士士科士打有限公司
占士提邊士公司
立可父子公司
可夫文製造公司
賚鶴建臣父子有限公司
耳昔則臣父子有限公司
精建兄弟有限公司
奇布尼及則給士製造公司
糜孖車頭及機器公司
文寧麥士謂及摩公司
妙千斤塵不歷其滔公司
美國布魯亞公司
美國鋼線公司
大英靴路士比電線纜有限公司
班尼士製造公司
比厘路公司
表花盧不歷鞭公司
表花盧士派士厘公司
布律端父子公司
插父子鎖鑰與銀箱有限公司
地吐律滔路公司
的有限公司
賚的建臣公司
胡路扶公司

Shewan, Tomes & Company

# 美國鋼鐵公司

United States Steel Products Co.

## 鋼鐵軌

自最重之火車軌至各種輕便鐵道及開礦運木或電車等所用

## 建築品

鋼節鐵槽角鐵鐵鍋鋼板鐵板礦中或油井內所用鋼鐵物件以及各種車輪

## 輪軸

火車汽機及電車等所用

本公司自剏設以來歷有年所所售各種鋼鐵品久蒙交口稱譽無煩瑣述惟近來實業發達各物之需用鋼鐵者或大或小品類甚夥苟祗備其重大者而將各式細小者付之缺如則必不能應購者之用本公司花樣繁多大而至於軌輪機軸小而至於日用雜物之微凡屬鋼鐵品無不色色俱全以備 貴客隨意購用至貨物之精良價目之低廉尤爲得未曾有 賜顧者幸垂鑒焉此佈

## 翻沙機

機器及各種附屬品

## 鐵箍及鐵皮

用以箍桶束棉花捆羊毛或皮包等物

## 鋼板

用以造船造汽鍋水鍋等件者

## 馬口鐵

可製各式雜用物或鍋爐等件

其餘如馬脚鐵銅絲生鐵硬煤煙煤等名目繁多不及備載

上海江西路二十四號A 電碼 "Steelyard" Shanghai

# 美國派愛而車頭電燈公司告白

Pyle-National Electric Headlight Co.

## 下圖表明用二萬二千支光派愛而車頭電燈之功用

此圖的係攝自美國鐵路車站其攝影之地點相去

車頭有半英里之遙足徵派愛而燈之功用非小

派愛而燈能發有力明亮之光可使車頭司機者之視線能達半里之外且使其能瞭視一切可避危機派愛而燈之功用上已略言之矣總之人咸樂用此種燈因知其無美不臻也

# 西方電氣公司廣告

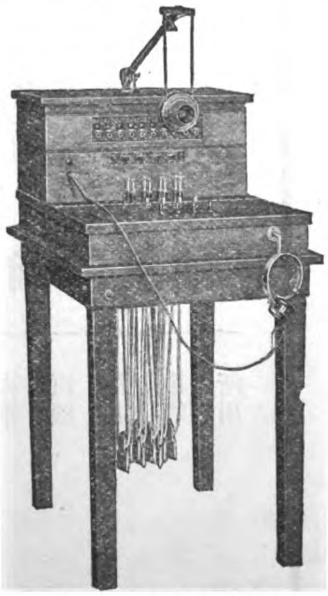
The Western Electric Co.

第一三一七號磁氣發電機德律風

若欲研究貴處德律風機器是否傳聲清淅必須先看所用之各種器俱有否　活司得商標之牌號是否爲本公司所完全製造者本公司所製電氣器俱完美可靠全球馳名且爲世界最老最大之製造各種電氣器俱之製造廠

且德律各種機件亦爲本公司製造物品之一小自私家之德律風起大而至大城內全體之德律風如配電石板裝德律風家所用之配件防護俱線纜線件手器隔電俱等物件

中國經理處上海西方電氣公司
小呂宋經理處愛令加格令加洋行
日本經理東京日本電氣公司



第一八〇〇號分段配電石板

EVERY BELL TELEPHONE IS A WESTERN ELECTRIC TELEPHONE

"SAVE TIME AND FREIGHT"

"TELEPHONE OUR NEAREST HOUSE."

上海西門子電汽廠製造各項電料總公司在上海仁記路B字一號凡青島漢口天津北京香港廣州等處皆有分行且各處皆有高等工程師以備　賜顧諸君垂詢一切本公司所代表之各大公司如下

倫敦司脫福特之西門子兄弟電機製造廠

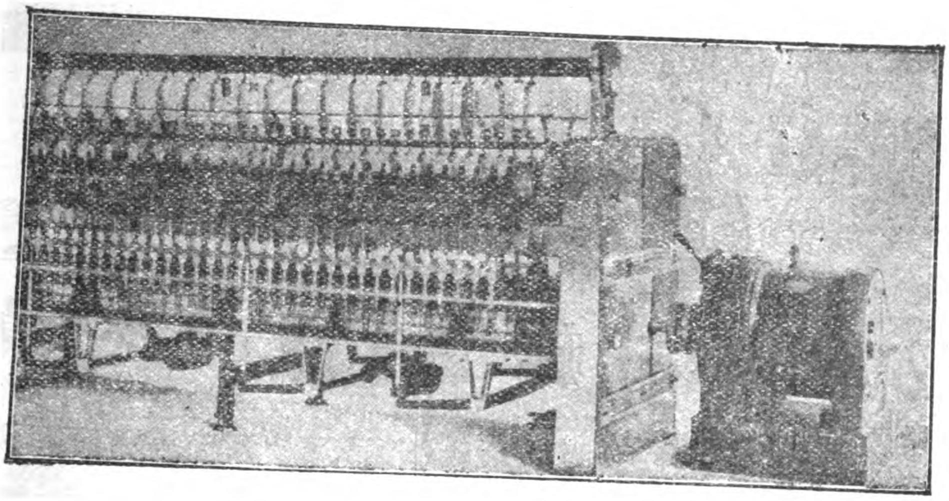
倫敦和而或區之西門子兄弟公司

柏林拿能騰之西門子考而司克公司

柏林立吞別掰之旗勃路達西門子公司

柏林奴歐別掰之西門子盧荷浮克公司

Siemens China Electrical Engineering Co.



本公司之華吞燈係世界上最光明最省電之燈本公司之泊老套電汽車用軋沙林或電汽運動此圖係三面形交流電機與引擎直接奉天吉林蘇州灤州及青島等處皆由西門子裝置此項電機

各項電機之圖畫及價單如蒙

賜顧即可送呈

本公司製造各項電燈大力牽引各機件以及邦波轉滾起重各電機查律水汀拖朋得力風電報及透骨電光機啞重氣機海底線炭絲燈蓄電池電汽車軋沙林汽車等俱備

此圖的係攝自美國鐵路

# 英國康模造車公司

Commercial Cars, Ltd., Luton, England

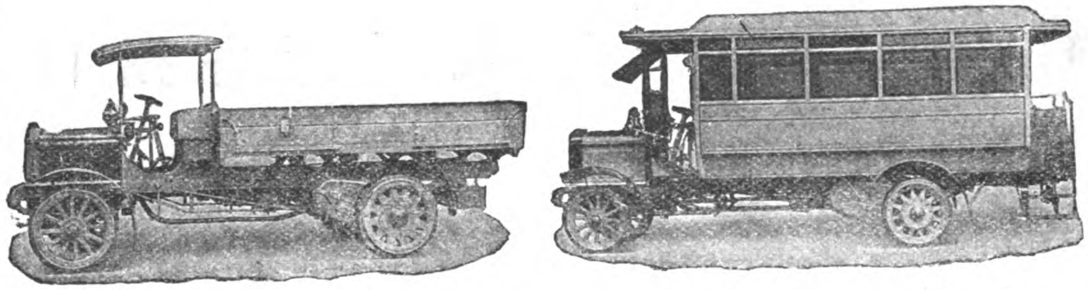
格言曰觀運輸機關之隆替足覘以國家之盛衰本公司專造工藝界及公家所用車輛工料堅實精良無比取價低廉如貨車灑水車救火車客車等均可

康模牌

"COMMER" CAR. REGD TRADE MARK

車輛

按式定造必能合意所裝油機燃燒煤油或汽油在東方應用最爲便適本公司總廠在英國勒頓城內英國康模造車公司謹啟



此種車輛裝有汽油機大小分爲十四號載重一噸至七噸載客十位至三十四位機器有二十至一百馬力

# 赫司耳電廠廣告

Hasler Telegraph Works.

本公司開設倫敦維多利亞街第二十六號專造最上等機關行程速率表及記錄表若欲購置者請函達訂購可也

# 勒特烏文公司

Owen Bros.

"ROSPHALTIC"

REGD. No. 336682

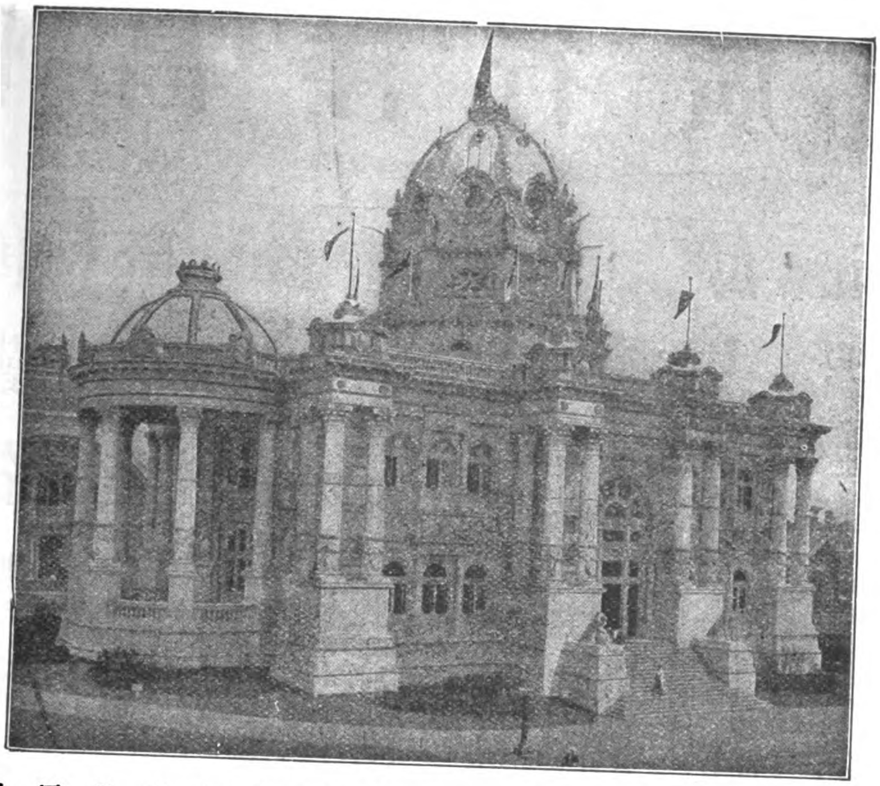
HULL

羅司法鐵漆敷於鋼絲鐵柱之上能永免鐵銹濕氣電氣均不能侵入天氣寒暑隨鐵漲縮此油質地純淨永保無患

勒特烏文公司

總行在英國黑耳城

上海怡和洋行總理



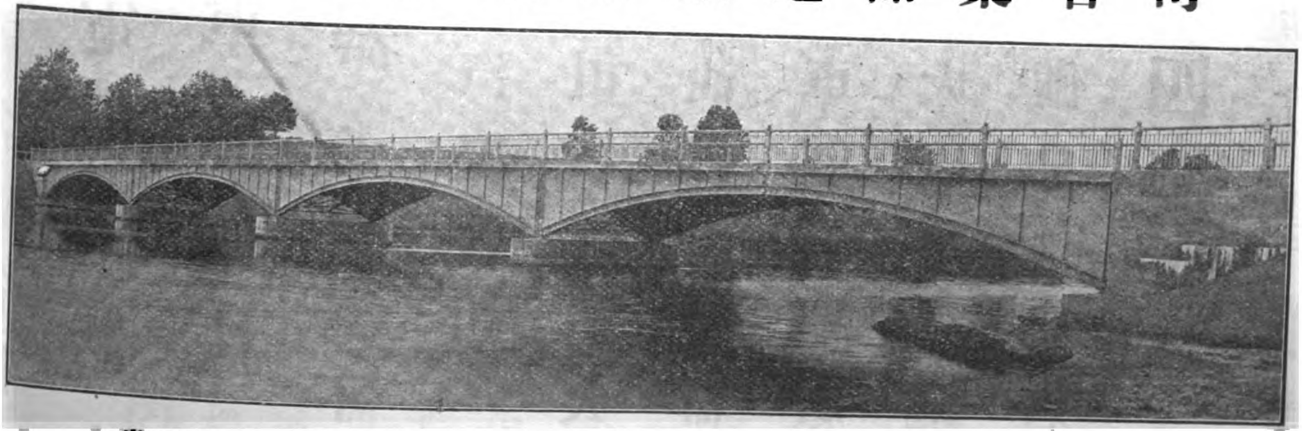
此為巴蘭夢羅和平宮其工程之堅固久為世界所稱譽然建築時需用鋼鐵至四百餘噸之鉅皆本公司所供給特攝之以供賞鑒

# 美國鋼鐵公司

電碼 "Steelyard." Shanghai

經理處 上海江西路二十四號

本公司專辦各種建築鋼鐵品並包造鐵橋鐵房自來水煤氣塔及各種鐵管等物無不全備



此為美國牛查西省克那基湖哈爾門橋橋共四彎每距九百二十四寸約重二十七萬一千餘噸計用鋼鐵甚夥均屬本公司之出品

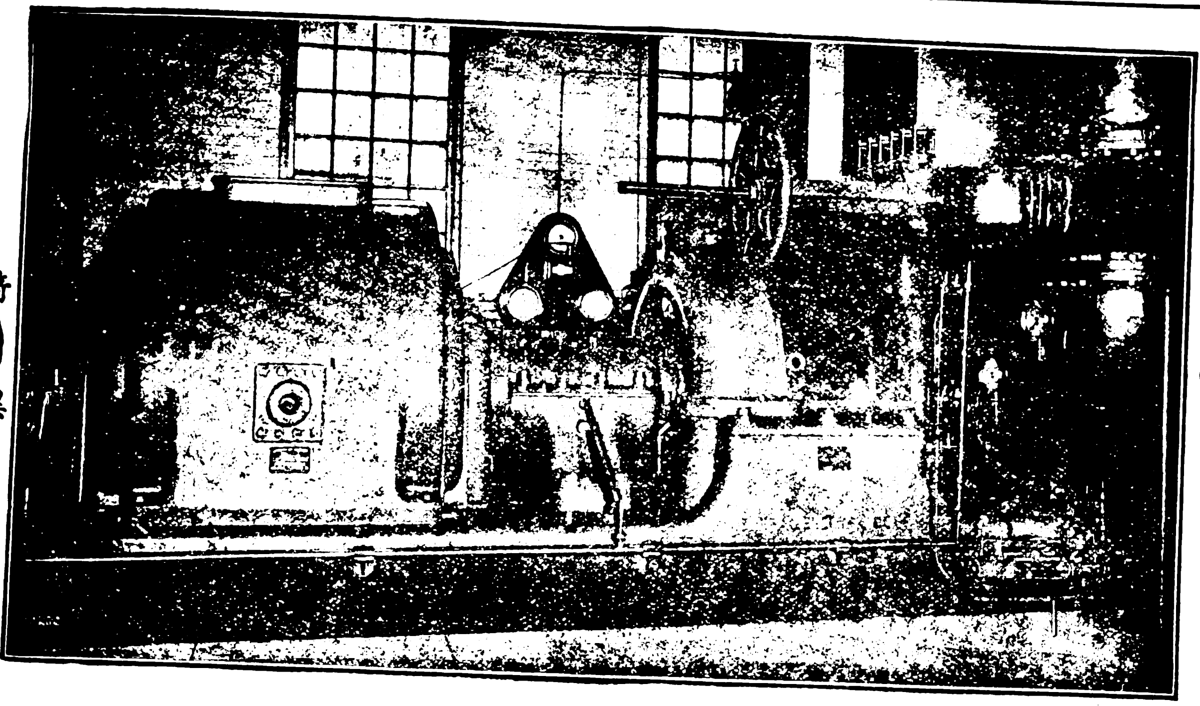
United States Steel Products Company

# 慎昌洋行廣告

Anderson, Meyer & Co.

本行設立已久遐邇馳名專辦歐美各國名廠各種機器所有電燈全廠機器及各項電機電話火車鐵路鋼軌鋼鐵各軌各式車牀刨床測量繪圖儀器並各種汽油機器等件無不俱全所有本行經理之　美國愛特生電汽總公司　英國湯浦電機公司　浦特製造火車公司　漢司火車燈公司　施端林電話公司　范落汽油行船機器廠　右孚亞士工程儀器廠　鄧特摩阿車刨機器廠　馬士維爾石棉廠等均係環球著名各大廠中外馳名凡賜顧者均知各名廠機器之完善美備也　諸君欲知詳細請移玉至上海圓明園路四號

中國經售處上海慎昌洋行



奇異商標

B T-H

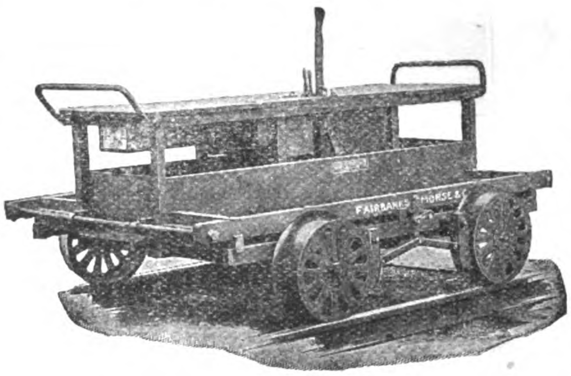
美國紐約**普通**又名**奇異電汽總公司**爲環球獨步世界第一之電汽製造廠與英國著名**湯輔公司**係屬聯號性質近年新發明一種**透頻汽機**係與磨電機直接相連而用便利異常且自七啓羅滑脫推至二萬啓羅滑脫其汽機之工料無不堅固精良而用煤亦省使用極靈卽裝置機件亦能省佔地位誠現今電廠**惟一無二之電機也**此機發明後各國爭相購用僉謂較舊式之電機其使用之利鈍相去殆不可以道里計**又新造一種光明省電之曼士達拉絲燈泡**此燈泡乃本廠獨家創造係以數十年之電學經驗參照美國國家頒定規程研究製造而成故質地既極精良燃點尤能經久發行以後風行全球因其能省電力而光線之足備反出各種新式電燈之上因之銷路日廣愈推愈遠洵爲**電燈泡中之魁首又奇異商標各種電氣風扇**省電多風用久無炙手諸患可免一切危險**又電話機器**式樣玲瓏裝置簡便內地躉購且可代爲裝置餘如各種電燈全廠電機家常裝用之電汽器具並礦機鑽石機升降起重各機轉滾提鍊電機傳電器電汽船大小各廠應用之電機幫浦潔淨機貯水所發電機避電測電等機泉水發光機以及各種海陸軍用電光照遠燈電扇轉動等機凡屬於電汽各項大小機件及各樣附屬之件無不完全齊備　賜顧諸君欲知詳細請　駕臨**上海圓明園路**四號本行寫字間接洽無任歡迎此佈

中國經理處上海愼昌洋行

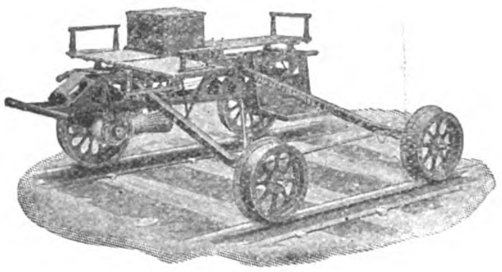
General Electric Company

## 美國反白司鐵道汽車

站工監督修路工頭及扯號旗人所用該車造法極爲簡便用法甚易穩而且快如用載客及載官場此車式樣甚多大小不一請查目錄第九百五十六目頭FY




## 鐵道材料



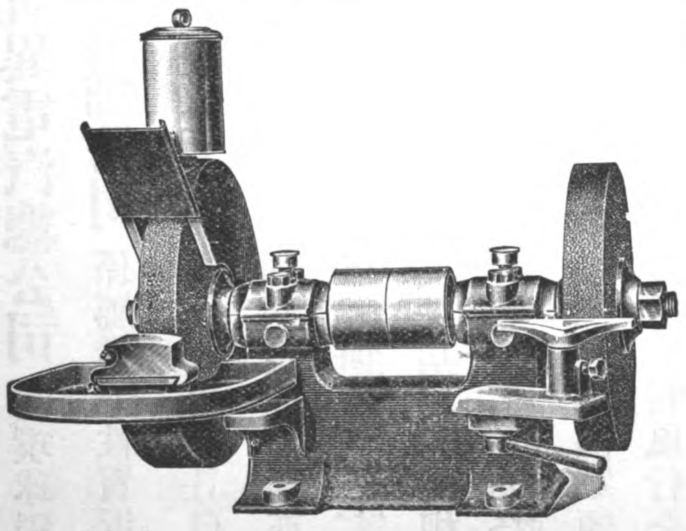
油引擎汽力及電力抽水器電燈器運卸煤斤機器轉盤及吊橋機器手車推車及一切應用材料無不完備請查目錄第九百五十六目頭GB

中國經理處上海信亨機器公司
香港天祥洋行

Fairbanks-Morse Railway Motor Cars

## 倫敦愛茂來工廠有限公司廣告

The London Emery Works Co., Ltd.



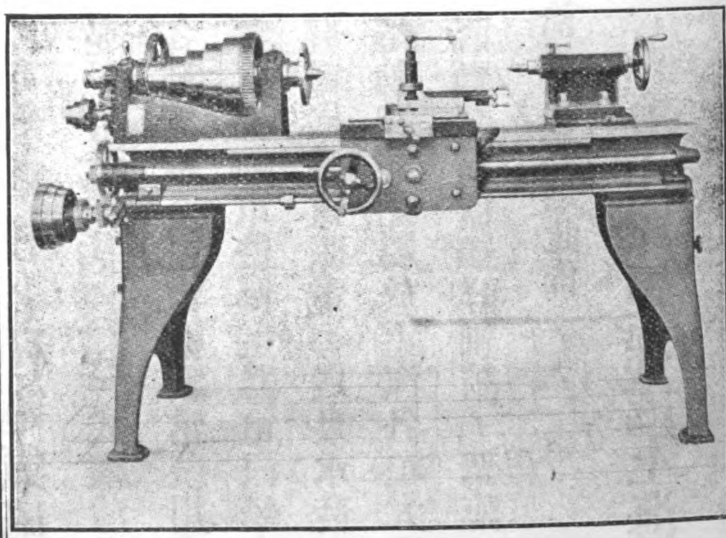
此圖爲雙頭愛茂來機式磨機其全體均爲生鐵所製軟鋼磨心直徑一寸其軸枕均爲白色金屬類磨心傍有緊鬆之滑車排於左者可磨潮濕之物因配有水槽碗架蓋頭及壁俱右邊則配有普通磨件尙有最好質地之地球牌愛茂來輪盤兩俱大十二吋厚一吋半

此項磨機亦可大十四吋厚二吋及大十六吋厚二吋之輪盤

若欲知圖樣或說明書可來函索取

工廠開設英京倫敦土丁南英雄工廠

## 用電氣以節寶耗



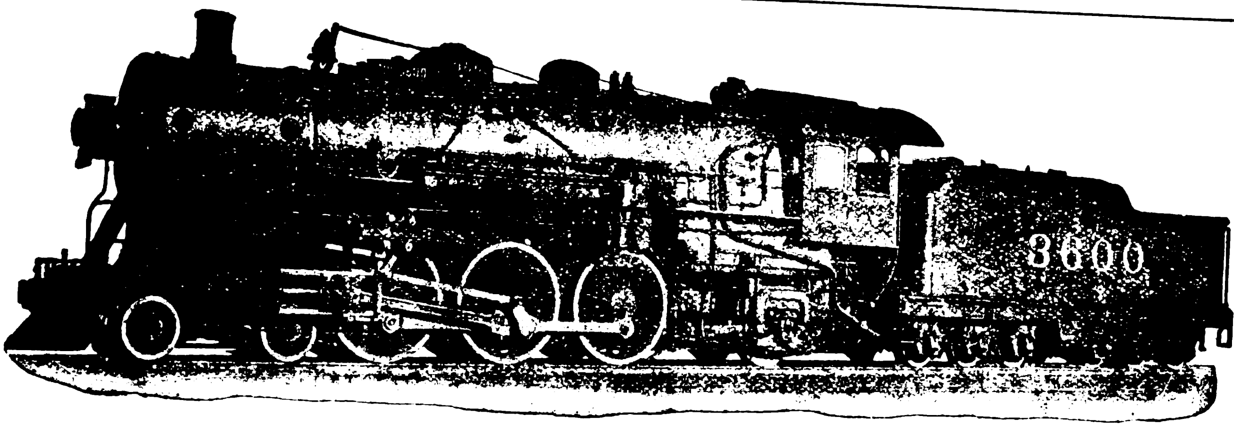
電氣一物利用甚溥用以裝修各項機器非特工作較人力爲速而耗費亦可節省因其出貨多而成事易也凡各機器廠欲裝置電氣馬托或鑽頭磨刀機無論活動與否均可使之流利活潑所需電力或交流或直流及電鎊之多寡均當隨意裝配賜顧諸君幸垂鑒焉

德國蜀赫廠啓

Schuchardt & Schütte

# 巴爾威機器車頭廠

The Baldwin Locomotive Works



愛克生討庇格散打非各鐵路之太平式車頭

美國搭客之快車中其大半皆有本廠之太平式(四—六—二)機器車頭所拖帶此項車頭機器能載重力拖帶重車因機器內包函之力足使速率按時增高也

汽筩長二十六吋闊二十六吋　主動輪直徑七十三吋

汽機壓力二百磅　火爐佔地六十六另十分之七方呎

熱水面積四千四百四十三方呎　加重熱水面積九百八十方呎

主動輪重十七萬二千五百五十磅　機器共重二十八萬八千七百磅　拖力四千一百磅

太平式之機器車頭爲愛克生討庇格散打非鐵路所有爲近世最新式之機器見上圖

此條鐵路爲乘客最多故車行之次數亦多辦法亦妥善

此車頭用油爐特意擴充其極大之力每邊之主動輪之重限五萬八千磅

此項機器已爲本廠帶往巴拿馬萬國賽會場之物件中之一

中國經理 上海天津 香港漢口 瑞記洋行

日本經理東京舍爾法辣薩有限公司

# 美國鋼鐵公司

上海江西路二十四號

電碼 'Steelyard' Shanghai

## 專運美國鐵管公司各種物品

並製各式銅鐵自來水自來火蒸汽等氣管

大小自八分之一至三十寸

隨意配合無不適用

## 汽鍋上應用之鋼管

質料或剛或柔式樣或大或小尺寸或長或短

各式井內所用管子

## 無縫煤氣管或煤油鐵管

其重量能抵三千七百磅壓力

用於各種大壓力煤氣空氣亞馬尼亞及炭氣等物最爲合宜

## 空心鐵柱

用以建築電車軌道電桿德律風桿及各種電氣柱枝

其外尚有各項工程應用之鋼鐵管子

及自來火自來水龍頭等件一應俱全

United States Steel Products Company

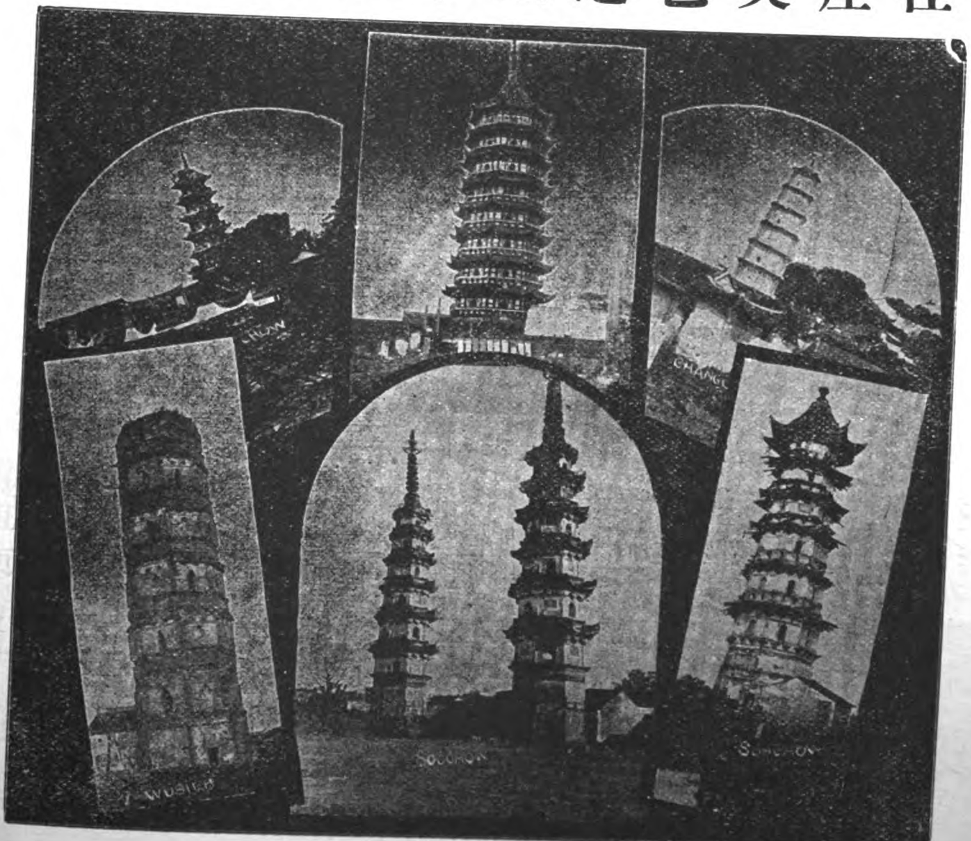
# 滬寧鐵路廣告

Shanghai-Nanking Railway

啓者本路工程均照歐西頭等鐵路最新款式建築軌道堅固車行穩捷往來時刻必依規定各站之候車客房停車月臺不但地方寬敞布置亦極周密往來搭客無擁擠窒塞之虞各等客車座位舒暢氣候咸宜頭二等之車尤爲美麗無匹電燈電鈴電扇厠所盥室色色完備並有餐車隨行以備搭客不時之需西膳茶點酒水俱全價廉物潔衛生合宜每晚加走夜車以便行人睡臥車上設有床位備客休息至淞滬一段之設施亦與幹路無異各站及車上之員司夫役招待搭客處處周到運貨亦甚穩速凡於交通上有益者無不日事改良以臻完備久蒙各界所贊譽倘承

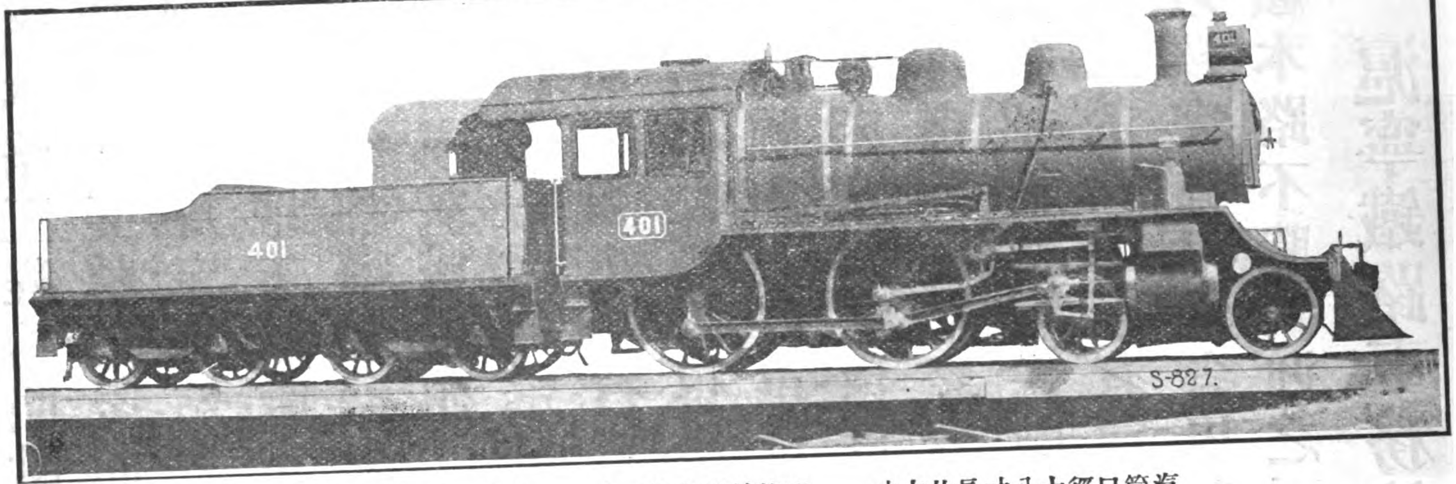
光顧本路不勝歡迎之至

滬寧鐵路車務總管敬啟



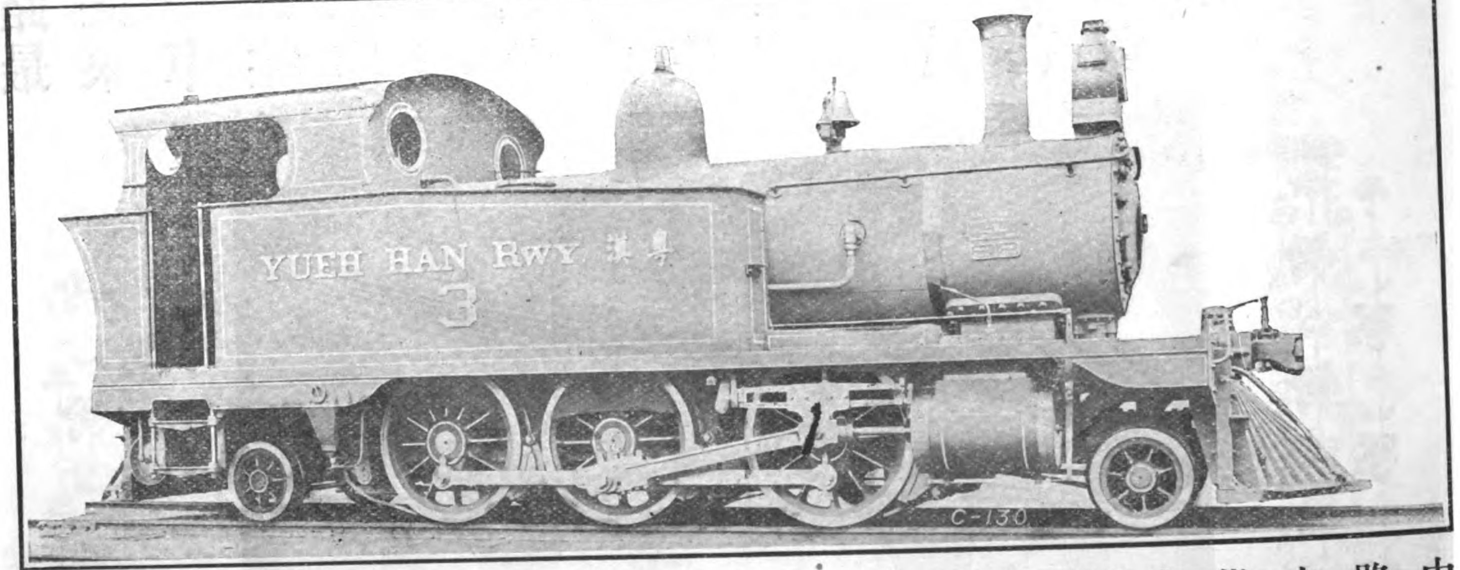
# 美國製造火車公司之火車極合用於中國鐵道

美國所製造之八輪火車頭卽近時朝鮮鐵道所用之八輪火車頭甚爲合用已著明效拖客車至六輛或八輛其速力計一點鐘可駛二十至四十五英哩之遙按此種機關車式樣用於中國鐵道尤爲適宜




汽筒口徑十八寸長廿六寸　推挽輪長七十二寸　拖力一萬七千九百磅

火車頭之製造也在購辦者無不以最新式最適用爲貴而製造家亦必以最新式最適用者求合於購辦者之心爲能達其目的夫果欲合購辦者之心則必須經機關師之幾番商榷始可辦理如　貴客欲與本公司在中國之經理處三井洋行面商則本公司當派機關師就商一切概不需費




中國粵漢鐵路之六輪雙水櫃車拖帶貨車或客車或貨車客車連帶之列車其速力與上圖記八輪車頭快慢有異者因此車速力較小拖帶列車之數遂少但前後有兩小輪可無旋轉機而能進退自如故駛行之時便捷多矣其特別出色之處卽在此兩小輪也

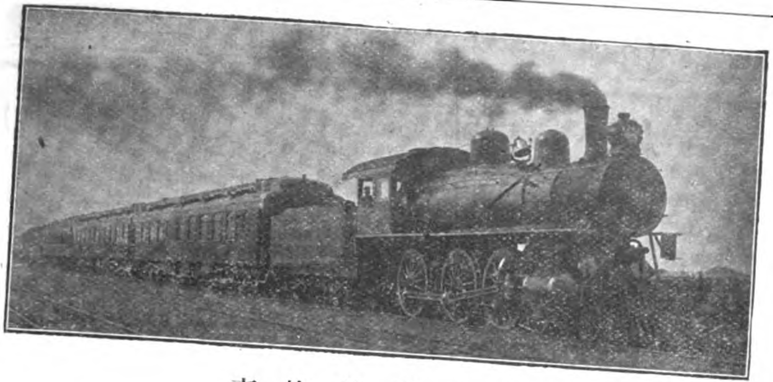
在中國經理處三井洋行上海天津廣東漢口香港厦門盛京

本公司在美京紐約禮拜堂街三十號　電碼

Locomotive New York
Annual Capacity; 3500 Locomotive.

American Locomotive Company

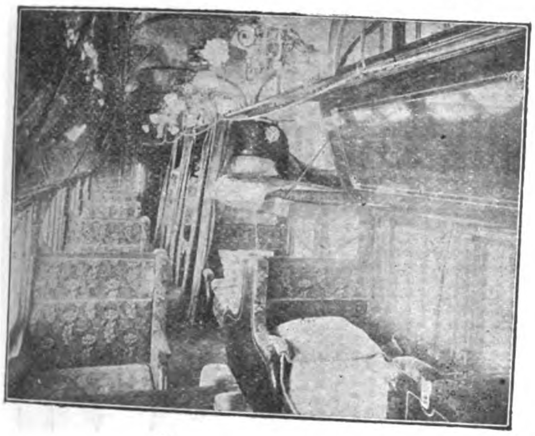
上海倫敦間 十三天半
東京倫敦間 十三天四分之一
東京北京間 三天半
大連莫斯科間 八天四分之三


南滿鐵路快車

東亞歐洲間最短最捷最廉路線

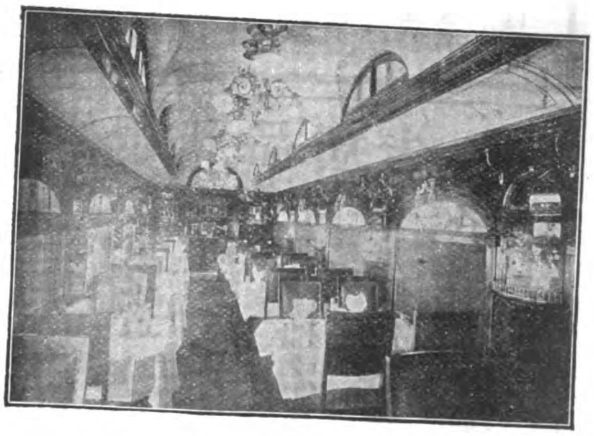
South Manchuria Railway Company, Dairen

# 南滿鐵路


床車

每星期三次開駛快車

本快車預備完善床車膳車並頭等客車運行大連長春間以便聯絡西伯利亞路線並上海航路


膳車

大連聯絡航路須知 凡自大連到門司神戶仁川天津芝罘青島及其他日華兩國各埠亦均有定期開行輪船彼此按日往來

奉天聯絡須知 凡此等快車在奉天與京奉鐵路聯絡並與新修滿韓路線長春釜山間每星期三次快車聯絡日本歐洲間旅程比舊短減兩天航程亦大就減縮

南滿鐵路公司開辦大連星浦雅麻多旅館

南滿鐵路公司開辦旅館 本公司在大連旅順奉天長春星浦等處開辦旅館均依西式調度完美無所不罄星浦距大連五英里為北部瀕海地方唯一勝區開設旅館之外并添設許多平房雅潔瀟洒點在中園海山環繞風光明媚租價務從公道以應遊客貴需

歐亞各地代售車票處 本公司車船各票均在後開各處代售

萬國有床快車公司 (The International Sleeping Car & Express Trains Co.)
日本郵船會社上海分行
德瑪司庫克公司 (Messrs. Thos. Cook & Son.)
漢堡美國航路辦理旅客事務處 (Reisebureau der Hamburg-Amerika Linie)
挪的斯克辦理旅客事務處 (Nordisk Resebureau)

本鐵路時刻車脚表沿線便覽以及各項報告若有要需一俟告知本公司運輪科卽當寄呈

南滿鐵路公司開辦長春雅麻多旅館

南滿鐵路公司開辦奉天雅麻多旅館

# 滿洲大連南滿鐵路公司

## 福祿氏磨機廠

The Fuller-Lehigh Pulverizer Mill.

陳立所中所陳立之機器不下四千架而福祿氏磨機實首屈一指且價廉而又能磨不易磨之各物品 如白煤 石綿石 瀝青砧 硫酸重土 炮克石脫 烟煤 骨煤 炭精 水門汀石 水門汀磚 粉墨炭 金苗 黃泥 煤炭 焦炭 銅苗 白雲石 肉色之石 燒過之黃泥 粉泥石 鑄鐵板面 福祿氏土 玻璃 金石英 黑鉛 石膏 海持來石灰 鐵苗 磁土 鎔巖 石灰 石灰石 砂石 磁鐵石 大理石 豬石 礦苗 螺蛔 漆 燐石 膏 巴得蘭水門汀 拍特立耳礦滓 石英 殼 硅酸 礦滓 石板 雲母石 屈破立 大小砂石 豬鐵礦 皓金 淨白粉

諸君若欲以磨成之煤生爐請查本廠所積之粉煤 用本廠所製展轆壓之用本廠之火轉乾機乾燥之用本廠之磨而粉磨之若承各界光顧請來函索說明書為禱

本廠所出福祿氏牌機器如 絞縺 輓輪 齒輪 磨管 砌襯 壓機 磨機

工廠修理以及特式之鑄品均可代辦請閱第五十號目錄可來信索取

萊哈車子車輪車軸工廠白

## 飛愛山喬其哇有限公司出售海軍戰利品廣告

頭等淹沒魚雷艇

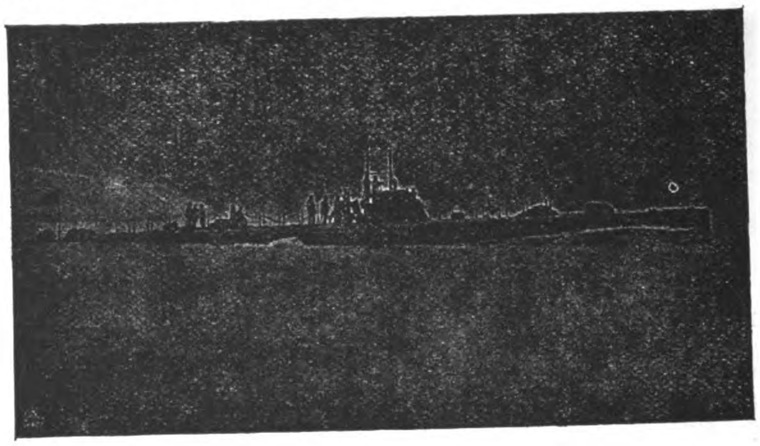
水雷坑道

炸藥隧道　消滅敵人水雷之用

形如浮桶之水面炸擊器

海底防範各種之軍械

各種電力發動之快行汽艇



Fiat-San Giorgio, Ltd., Spezia (Italy)

## 日本長崎三菱造船廠

**主要製作品**　郵客旅貨便物石油槽汽船 達頻汽船 快遊船 各種兵船 各種汽機汽鑵及電氣機械

**特許製作品**　巴遜斯式達頻 同式發電機 斯董式滿嘎黃銅 公杜拉普羅冷汽機 威耶式抽水抽氣各機 暨爾特抽氣機

**海難救助船**　大浦丸(七百拾六噸)

**船渠及船架**　乾船渠叁基 船架壹基而第叁乾船渠係蘇士以東最大者

**工場地基及職工數**　拾叁萬玖千坪 壹萬餘名

Mitsu Bishi Dockyard & Eng. Works

# 美國鋼鐵出產公司廣告

本公司所出鍍鋅彈簧鐵釘久爲光顧諸君所歡迎蓋以之釘屋頂實較勝於螺釘螺蓋螺圈也且價格又廉此四面之釘圖即本公司之出品長二吋四分之一諸君若購用之則屋頂不滲漏貨物不致損壞且省修理費若欲購者請向上海江西路愛字二十四號門牌可也

THE UNITED STATES STEEL PRODUCTS COMPANY.

# 特立司代而公司廣告

Drysdale & Co., Ltd.

本公司專製離中向外之抽機使油自來航海與陸地均適於用其速率極高能拖代拿摩及扇機等物

本公司爲英國及各外國海軍部之包造家

總公司開設蘇革蘭革來司搿

上海經理處在九江路九號凱衛倫公司

# 曲模脫製造公司

Trimont Manufacturing Co.

曲模牌螺旋管鉗早經爲使用者所歡[illegible]又發明新件名護螺具加於鉗上其大[illegible]同爲鋼質所造不易損壞

護螺螄具之功効能使螺螄運動工作時不致受意外之不測且能使所用之器具有百分中之二十五分之效用

曲模螺旋管鉗備有木柄者其大小有六寸八寸十寸十四寸共四種備有鋼柄者其大小自六寸至四十八寸

曲模螺旋管鉗內之各附屬物均可互換調用柄中所用之齒若用壞可更換新製之齒使鉗仍可保用

若欲知詳細請來函索取本公司之第二百二十三號目錄書可也

本公司開設鮑思頓勞克司白來

# 海華氏有限公司廣告

Haywards Ltd.

本公司所製房屋中之各種器俱幷鐵件等物無不恰合衛生故人樂爲購用今將各種着名之物約略陳之以便各界諸君採擇焉道傍三角鏡燈攤遂等物自鎖之煤板及圈件明瓦透氣翻板出氣洞馬房鐵柵好華氏鐵樓梯直形曲形均備幷有避火之樓梯鋼質可開關之窗架窗槅好華氏改良無油灰之屋頂鋼質欄板較膠省百分之二十五溝渠或屋頂之透氣具幷窗櫃或門戶所用之外鐵門若欲知詳細或購買者請來函掛號索取目錄第一號目錄載路燈及推遂第二號載煤板及圈件第三號載鐵樓梯直曲均有第四號載出氣具室內或屋頂第五號載馬房鐵件第七號載鋼質欄板第八號載發光具及爐鍋等物第十號鋼質窗架窗槅及可開關之門等物第十一號載花片玻璃第十二號載改良透光屋頂燈[illegible]等物第十三號載避火之光鋼片[illegible] [illegible]

# 火石車輪橡皮公司廣告

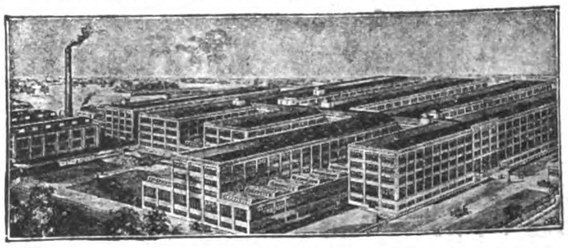
Firestone Tire & Rubber Co. Factory: Akron, Ohio, U. S. A.

本公司專製火石無輪制之車輪以便行駛於堅硬之道路及熱地上因含有耐磨擦力之性質且價廉而物尤美故爲駕車者所稱許以其穩妥適當所費者僅仙令而可駕駛若干里矣火石車輪之所以爲人人歡迎者因製料道地雖最廉價之車輪亦爲人所寶貴且其中之橡皮亦爲最好者最能避熱耐用輪邊上刻有無輪制等字卽所以表明穩妥之意世界各處之車輪斷不能與本公司所製者並駕齊驅因所著者乃**耐用省費爲特色**故也輪邊上之字可免輪制之擦損且可保護全車火石車輪邊爲專門家所製爲世界最大之專製車輪之工廠所造本年所出者已增至百分之七十八因力大堅穩故爲車輪之冠故商家亦願承辦代銷

工廠開設美國哇哈哇省專製空氣及實心輪子馬達車輪救火車輪車邊以及車輪所有之附屬品

小呂宋非列賓經理爲美國哈特韋匹涙並公司

中國通商口岸東三省及高麗等處若有殷實商家欲經理者可通函索取章程可也



此圖乃製造火石車輪廠
爲世界最大之完備製車輪之地

斐律濱全島銀行即原日之西班牙斐律濱人銀行改名創設在西歷壹千八百五拾壹年　準備資本壹千萬元已收資本銀四百五拾萬元經斐島政府承認有附貯公欵所有銀行營業事宜買賣滙單各埠處如　英國倫敦滙票　法吧黎　西班牙馬德里　吧詩倫那　德國伯林　咸北　澳洲西德尼　舊金山　芝加哥　香港與及一切總滙商市各區由電滙兌及附貯日息長期或逐日收支其利息悉照市面行情酌議另設支行在斐島屬之衣路埠其餘各埠皆設有代理人

倫敦 National Bank of Scotland, Ltd.　巴黎 Comptoir National d'Escompte
馬德里 Banco Hispano Americano　吧斯倫那 Crédit Lyonnais
伯林 Deutsche Bank　西德尼 Bank of New South Wales
紐約 Kountze Brothers　芝加哥 Continental & Commercial Nat'l. Bank
舊金山 Wells Fargo Nevada National Bank　香港 Banque de L'Indo-Chine
上海 International Banking Corporation　斐島詩務 International Banking Corporation.

本銀行寫字樓在嗎尼拉市些灣帝大街門牌第拾號

總理人　獎挨示拂
協理人　馬山洛

The Bank of the Philippine Islands



# 德華銀行

總行在上海分設香港廣東北京天津漢口青島濟南橫濱神戶新加坡加耳各搭柏林漢堡等處資本七百五十萬兩創始於一千八百八十九年利息活存者二釐存款有定期者可向本行詢問兼做各處匯兌總經理茀葛君

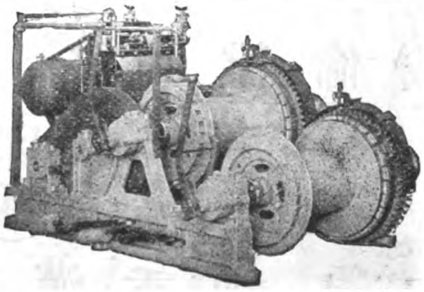
Deutsch-Asiatische Bank



# 立奇華製造公司廣告

Lidgerwood Mfg. Co.

本公司製造扯升機掰司介油或蒸氣或電汽於各處均適用所定造之機器及電升機已不下三萬六千具欲知詳細請來函示知



公司開設於美國紐約省自由街九十六號
歐洲經理處在英國倫敦京城



# 森茂司製造公司廣告

The Simmons Mfg. Simmons Bedsteads.

本公司專造床架爲全球最著名之鐵床廠之冠已有五十年之閱歷且所配料作均精美無匹質地堅實且合於各地之天時水土而款式及模樣爲各國所宜

若欲知詳細式樣請直接來函本公司索取或由經理人間接亦可

開設美國威司根辛省開諾息

# 匯豐銀行

(即菲利賓政府儲銀所)

△資本金 一千五百萬元

△英金公積 一千五百萬元

△銀公積 一千六百七十五萬元

△貯備股東應付金 一千五百萬元

定期存款利息額如蒙函詢當即通知需用銀者如以相當之物作抵均可議辦其餘各種銀行交易皆應有盡有匯票則可匯至歐洲印度新金山美洲中國及日本各大商埠

Hongkong & Shanghai Banking Corporation



# 花旗銀行廣告

本行招集資本及歷年贏餘共計美金六百五十萬元總行設在美國鈕約城全球通商大埠無不設經理以廣招徠承蒙小馬呂宋帶政外凡中府特指爲國家存款及巴拿互換處商界遊歷界保信買賣匯票及電匯等事無不辦理妥善以副 各界信任茲將已設分行各埠分列於左

| | | |
|---|---|---|
| 孟買 | 巴拿馬帶 | 北京 |
| 加爾各答(印度) | 漢口 | 舊金山 |
| 廣東 | 香港 | 上海 |
| 色盤 | 神戶 | 新嘉坡 |
| 哥倫 | 小呂宋 | 橫濱 |
| 墨西哥城 | 巴拿馬 | 倫敦 |

總董候白登　總理格林

International Banking Corporation

# The Bank of the Philippine Islands

## FORMERLY BANCO ESPANOL=FILIPINO

(ESTABLISHED 1851)

| | |
|---|---|
| Authorized Capital ............................................ | P10,000,000,00 |
| Capital fully paid up ...................................... | 4,500,000,00 |
| Reserve funds ............................................... | 1,375,000,00 |

**Official Government Depository**

General Banking Business

Buys and sells drafts on London, Paris, Madrid, Barcelona, Berlin, Hamburg, Sydney, New York, San Francisco, Chicago, Hongkong, Yokohama, Kobe, Nagasaki and all other principal cities.

Telegraphic Transfers

Interest allowed on fixed deposits and current accounts at rates which may be had on application.

BRANCHES: ILOILO, ZAMBOANGA

AGENTS:

LONDON: National Bank of Scotland, Ltd.
PARIS: Comptoir National d'Escompte
MADRID: / BARCELONA: { Banco Hispano-Americano / Crédit Lyonnais
BERLIN: / HAMBURG: { Deutsche Bank
NEW YORK: National City Bank
SAN FRANCISCO: Wells Fargo Nevada National Bank
SEATTLE: Seattle National Bank

CHICAGO: Continental & Commercial Nat'l. Bank
AUSTRALIA: Bank of New South Wales, Sydney.
HONGKONG: Banque de L'Indo-Chine
SHANGHAI: { Bank of Territorial Development of China, Ltd. / International Banking Corporation
CEBU: International Banking Corporation
YOKOHAMA: / KOBE: { Yokohama Specie Bank, Ltd.
FORMOSA: Bank of Taiwan, Ltd.

PRESIDENT
JNO. S. HORD,

VICE-PRESIDENT
E. SENDRES,

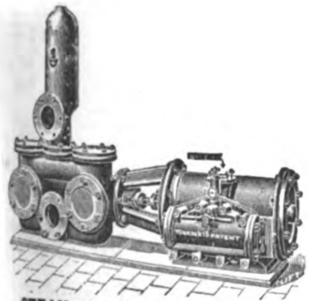
NO. 10 PLAZA DE CERVANTES, MANILA.

## WE MANUFACTURE

# PUMPS

## FOR EVERY PURPOSE

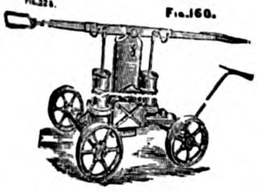
To be worked by HAND, STEAM, BELT, WIND, WATER or ELECTRIC POWER.

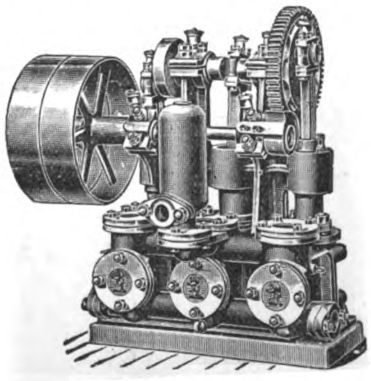


STEAM PUMP for General Purposes.

Fig.223.

Fig.160.





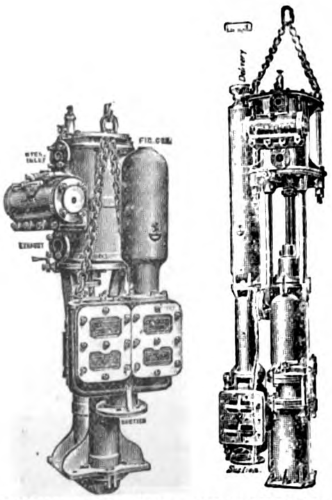


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Fig.101.

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遠東時報

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Finance ✻ Commerce

Vol. XII., No. 11. ✻ SHANGHAI—MANILA ✻ April, 1916.

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## Chinese Book-keeping

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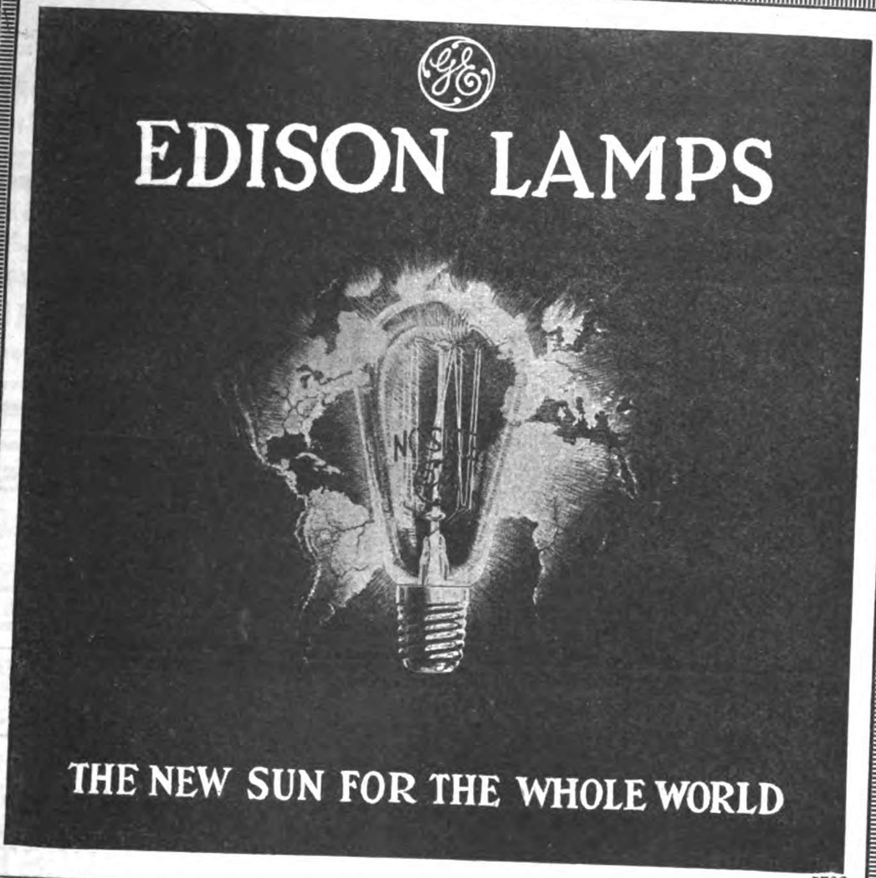


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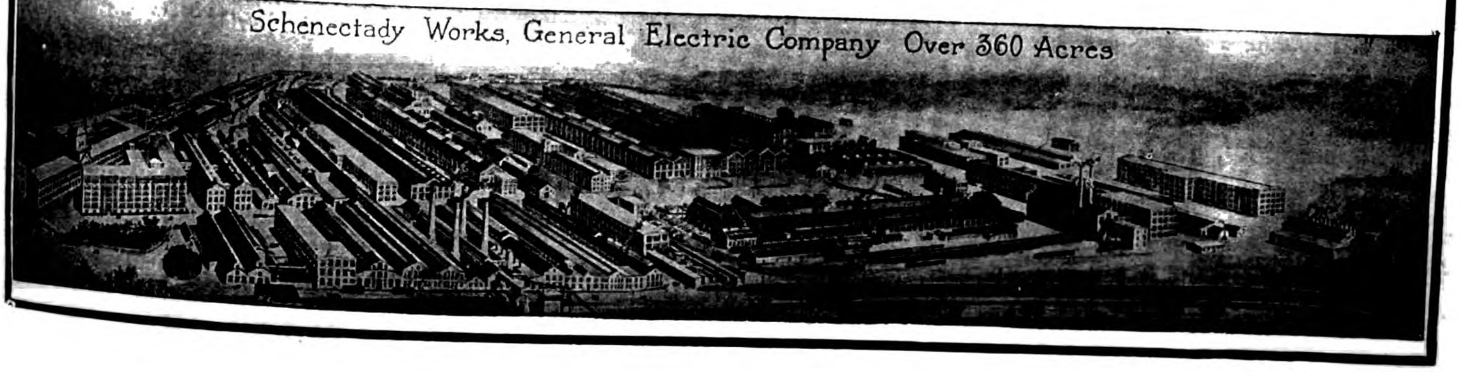

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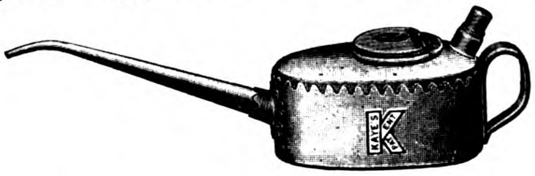

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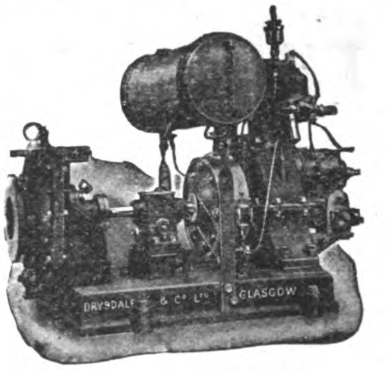

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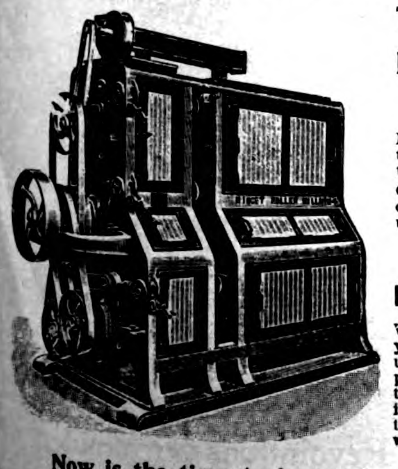

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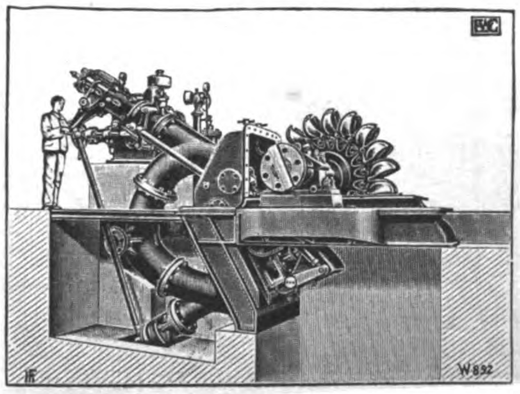

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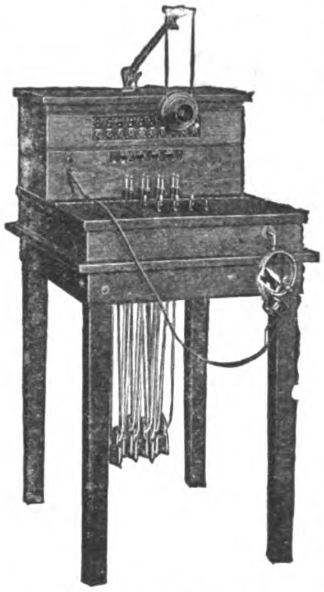

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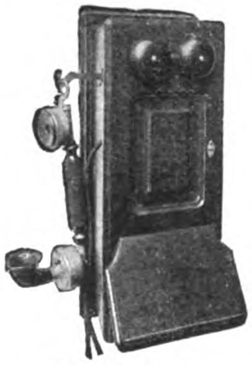

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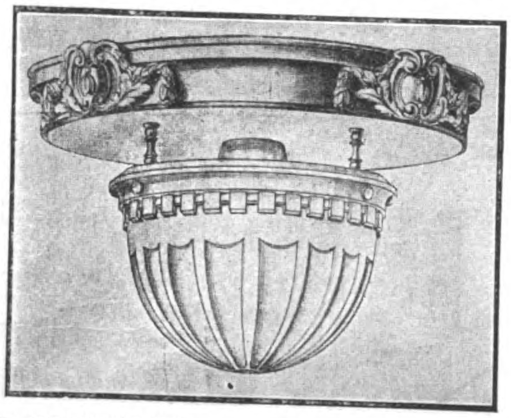

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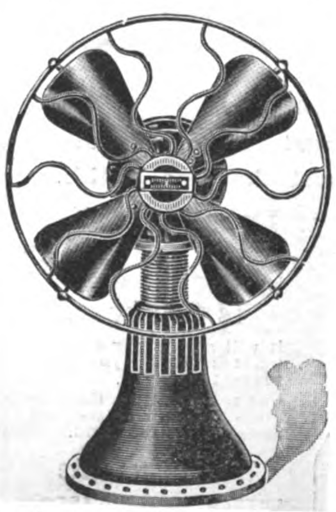

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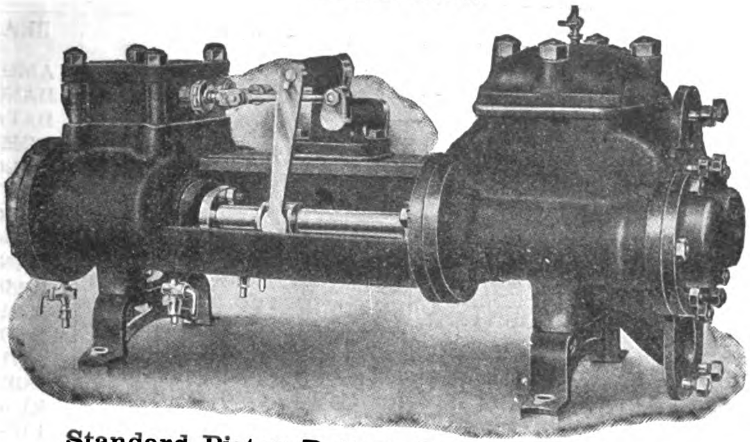

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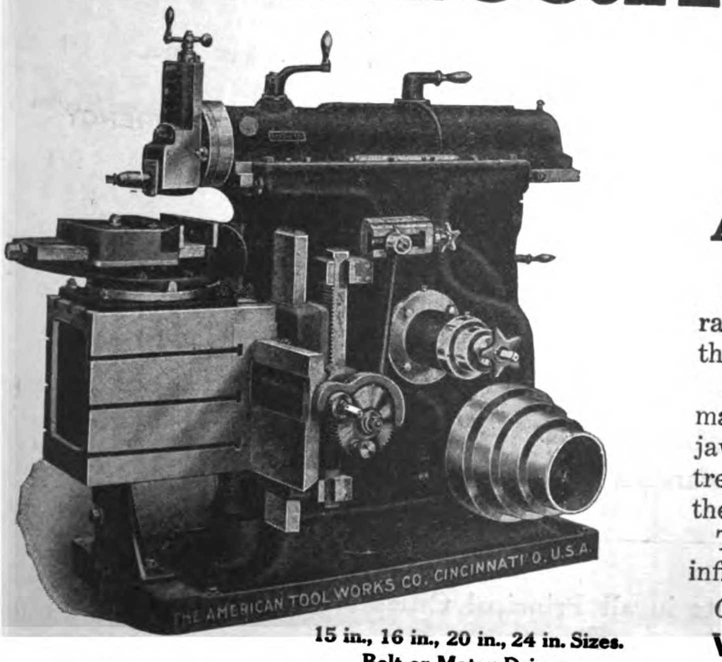


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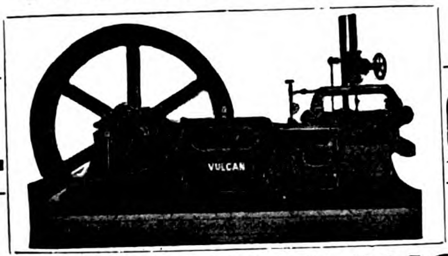
VUL  CAN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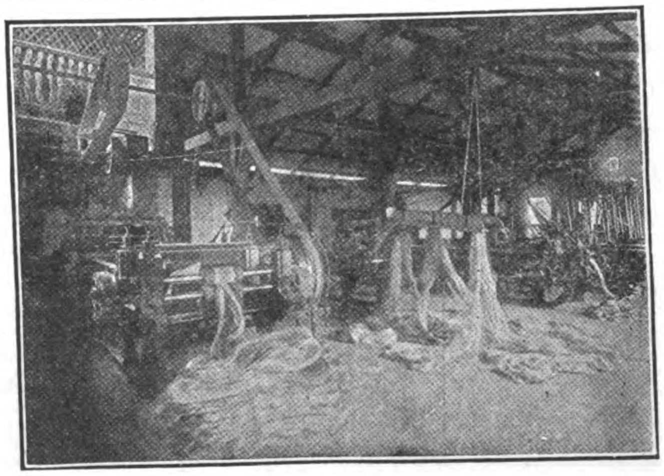

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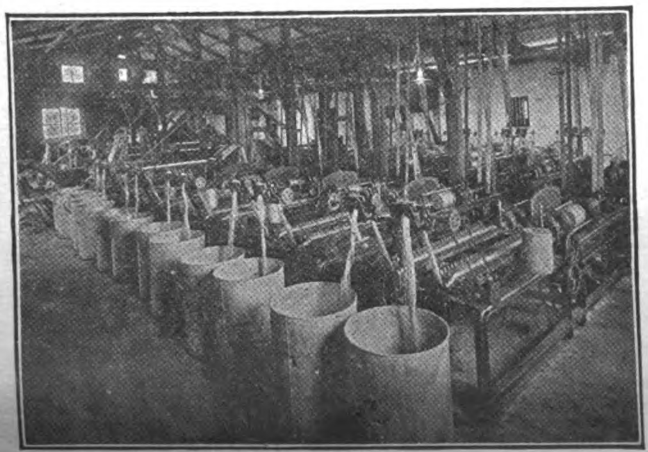

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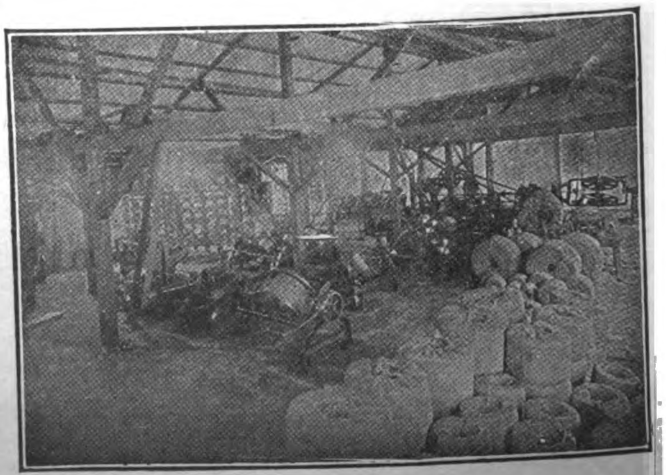

LAYING AND COILING

[SPECIMEN ILLUSTRATION]

*Photo by* G. C. Bishop, Esq.

Fig. 1
TYPICAL CLAY QUARRY

## Publishers' Note

This handy volume is intended to give commercial men some knowledge of the various materials and products described, the processes involved in their treatment, and the purposes for which they may be used. The various kinds of clays are described, also methods of prospecting, quarrying, mining, and preparing the materials so as to make them suitable for use. Important and valuable information is given on the manufacture and properties of bricks, tiles, terra-cotta, coarse pottery, sanitary ware, earthenware, porcelain, chemical ware, gas retorts, crucibles, firebricks, and other refractory materials; there are special chapters on Portland cement and on ultramarine and other chemicals made from clay. There is scarcely an industry in which some knowledge of clays and clay products is not useful, and business men will find in this volume the information they require expressed with lucidity and freedom from technical phraseology. Every care has been taken that the information is recent and accurate. The Author is a well-known authority on the subject, and it is largely due to his initiative and skill that so much progress has been made in some branches of the subject during the past fifteen years.

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Origin and Varieties
I. Formation of Clays
II. Varieties of Clays

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Preparing the Clay
V. Weathering
VI. Purifying Clays
VII. Crushing and Grinding
VIII. Tempering and Pugging
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Making Articles of Clay
X. Bricks
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XIV. Stoneware and Drain-pipes
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XVI. Porcelain (including China Ware and Chemical Ware)
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BRICKS 71

to technical difficulties; such as the retention of air between the particles, it is difficult to produce sound bricks by this process, but by applying several distinct pressures, these difficulties are largely overcome, and with a suitable press and a material adapted to this method of working, it is possible to make excellent bricks. In the Peterborough district this semi-dry method has been used for years with great success, the material there being one of the few which are suitable for this process.

**The Hand-moulding Process** is next in simplicity;

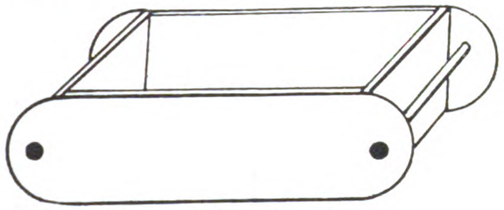

FIG. 11

MOULD FOR HAND-MADE BRICKS

in it, a plastic and rather soft paste is used. This is placed on a wooden bench of convenient height, a sufficient space being left for the mould (Fig. 11), which is a rectangular box without top or bottom and slightly larger than a brick. The moulder dips the mould in water and may then dip it in sand; he then places the mould on the bench and takes up a mass of the soft paste in his hands and rolls it into a solid lump on the previously wetted or sanded bench. He then lifts this *clot* high above his head with both hands and throws it with great violence into the mould, filling the latter completely. The moulder then presses the paste well into the bottom corners of the mould with his fingers, and afterwards cuts off any superfluous paste from the mould

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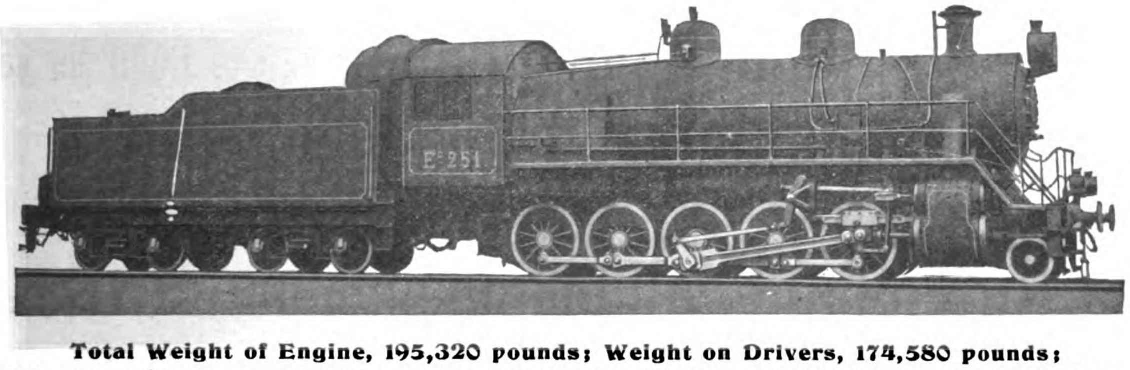


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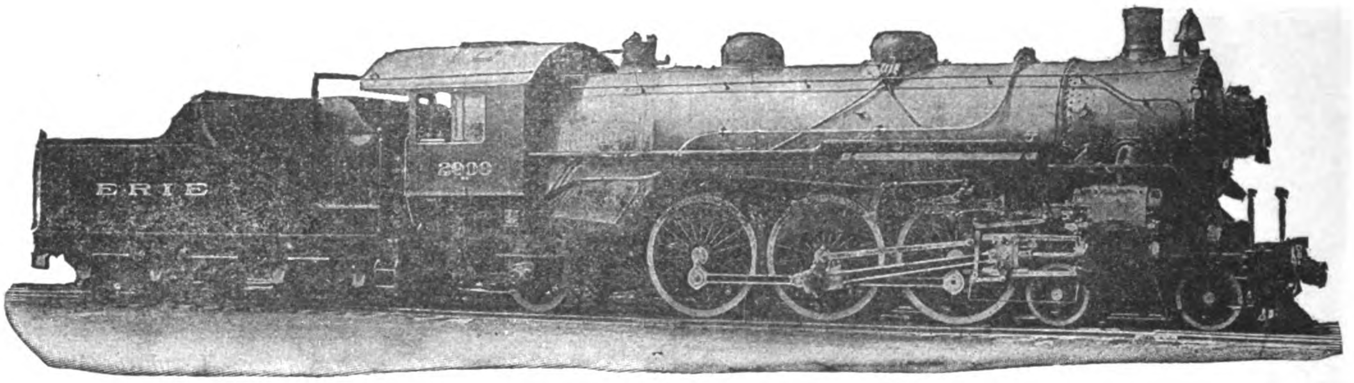

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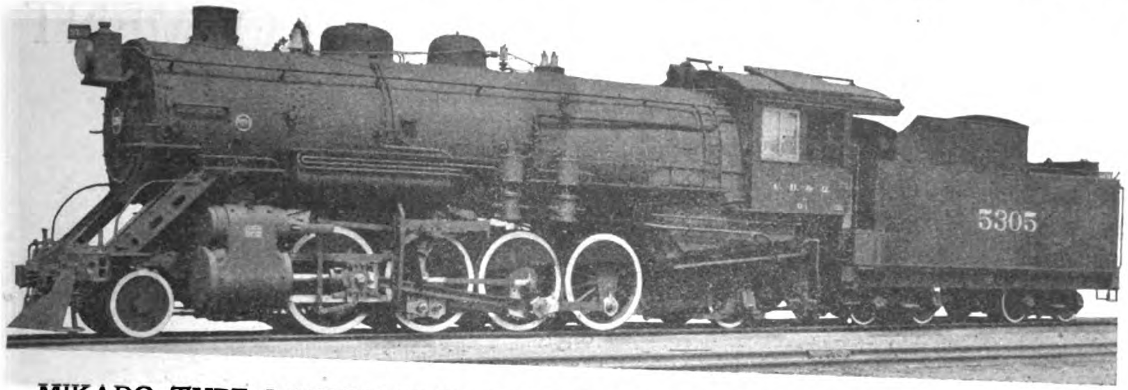


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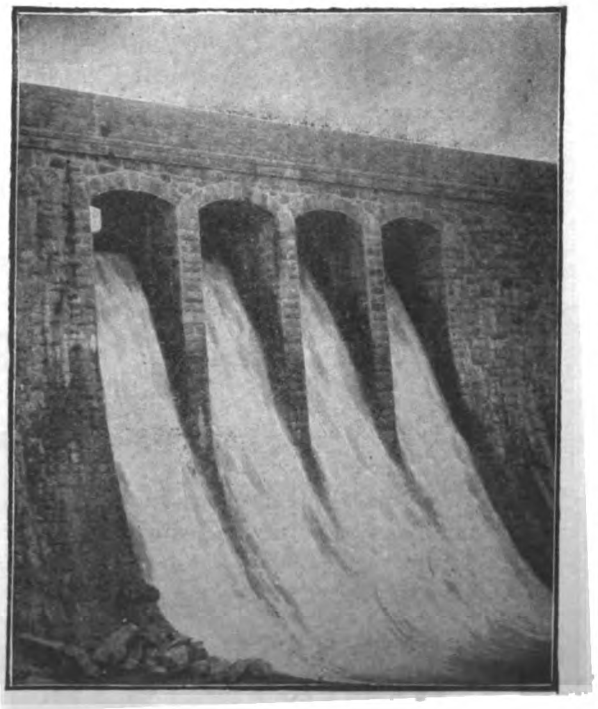

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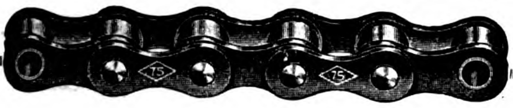

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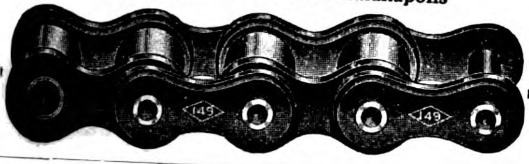

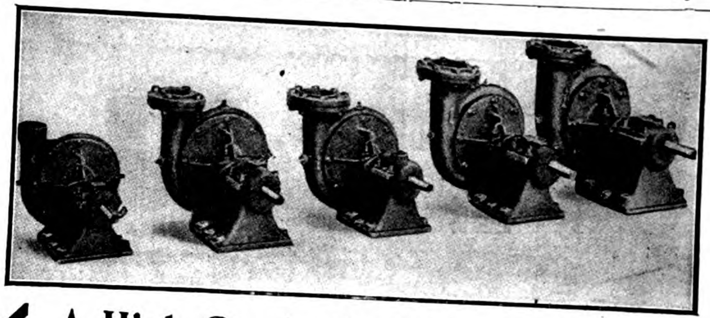

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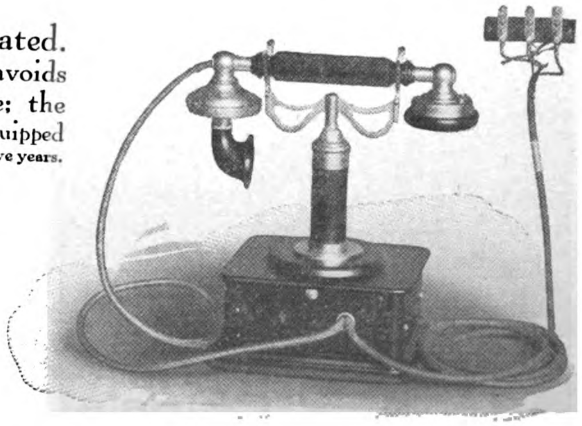

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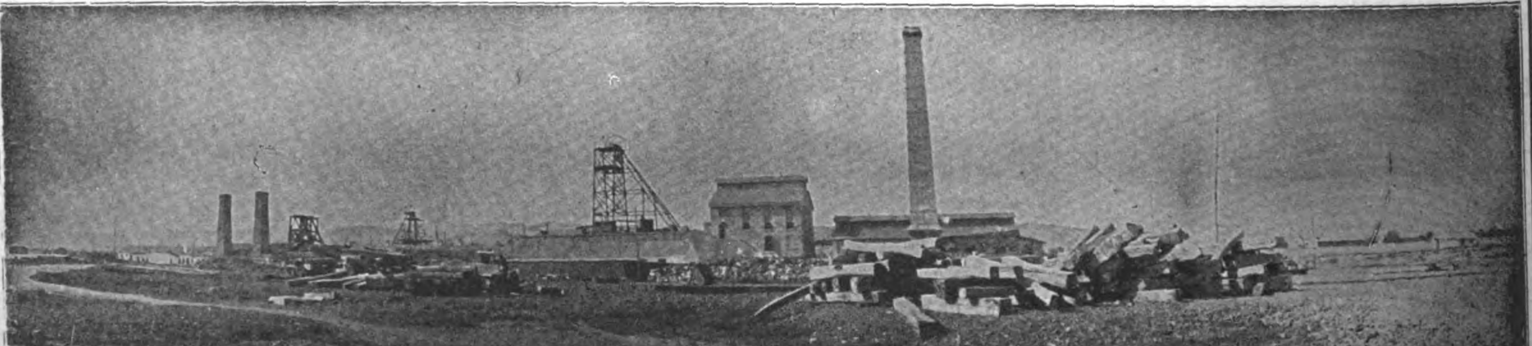

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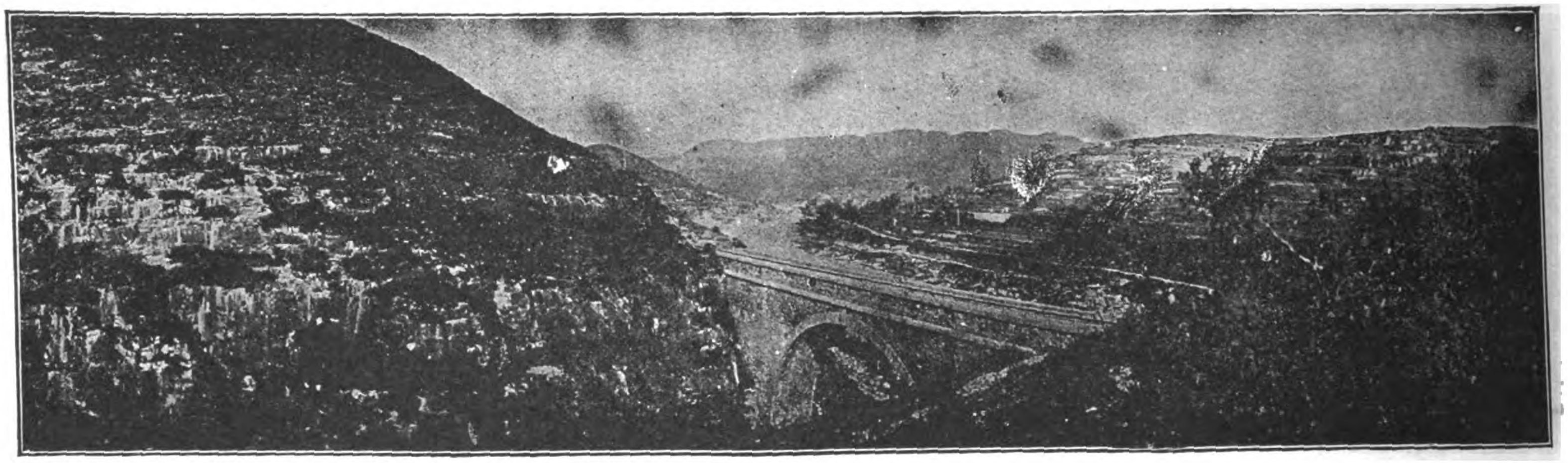

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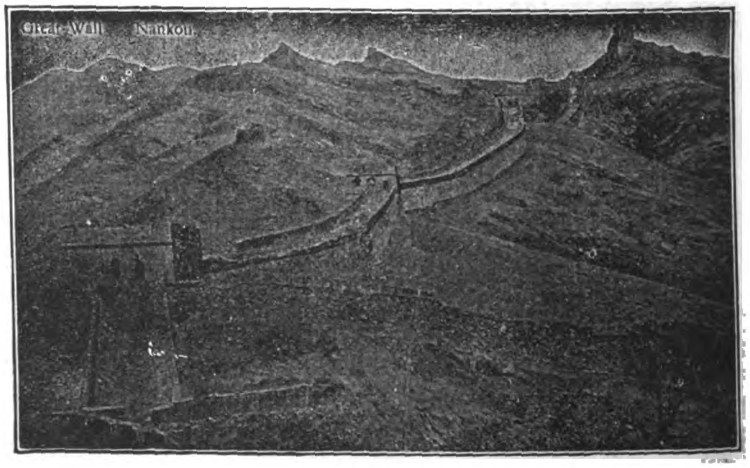

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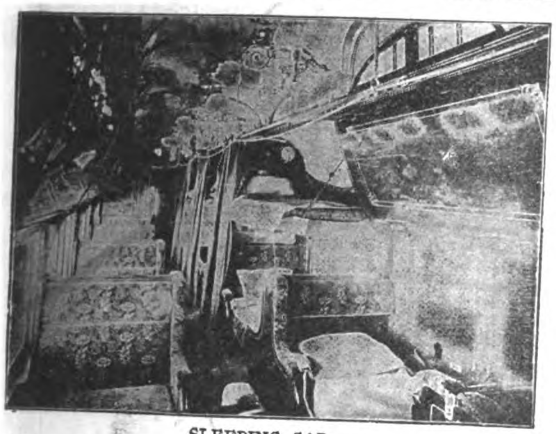
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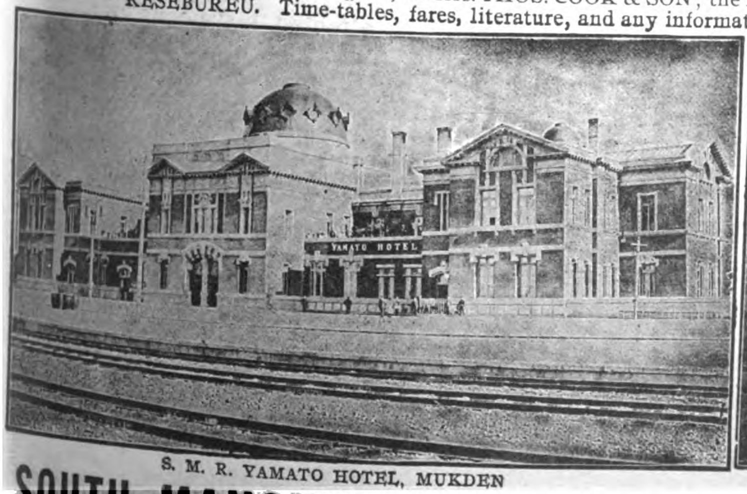
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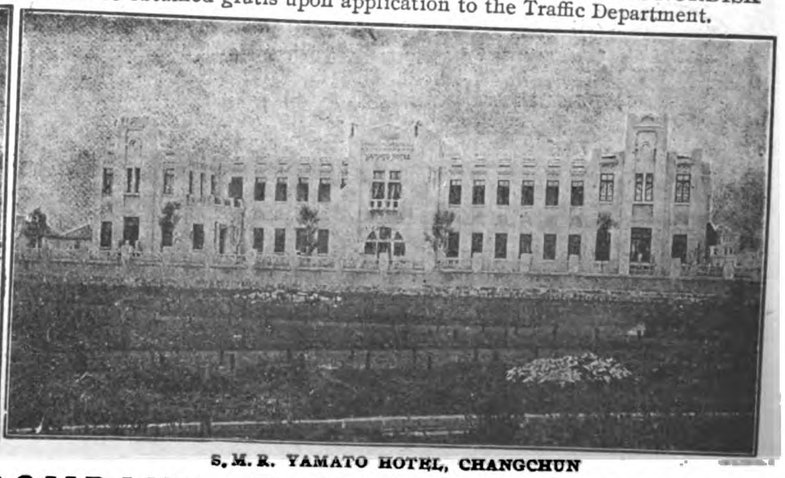
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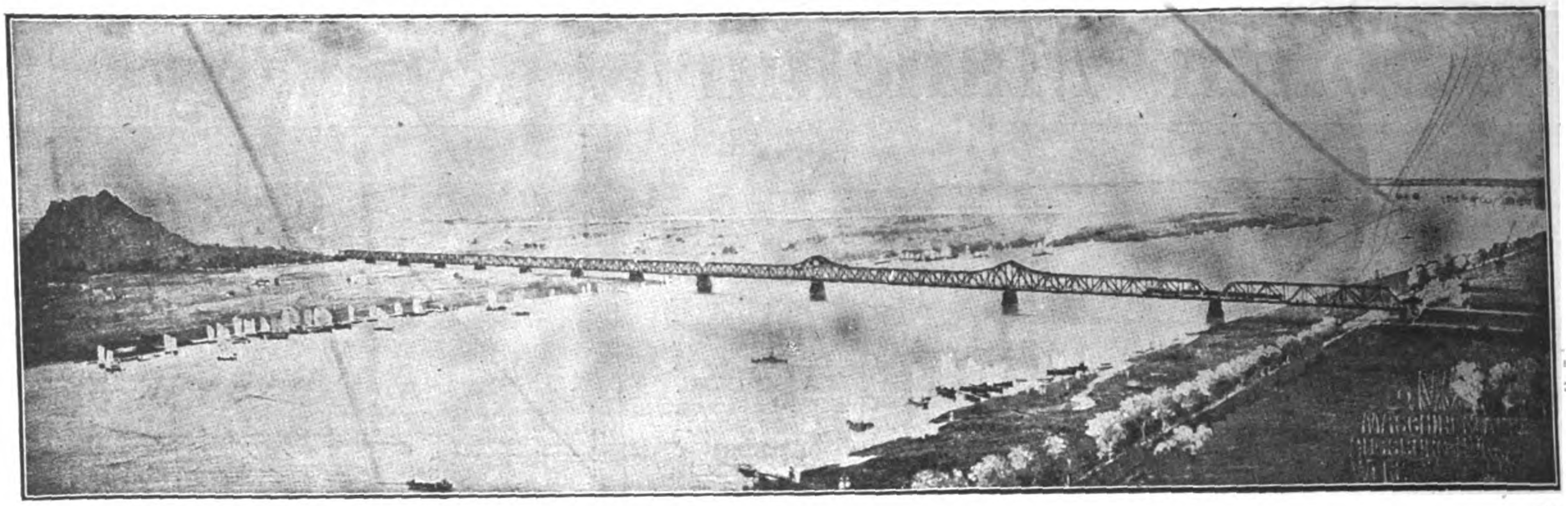

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Being the **quickest, surest and most convenient** connection between Shanghai on the one and Tientsin, Peking, Kalgan, Mukden and the **Siberian route on the other side,** this railway represents **a saving of many hours, of many troubles,** worries and inconveniences for the busy merchant, the home tripper on short furlough.

The tourist, the globe trotter travelling with more leisure and bent on seeing things, it takes right away from the stereotyped banality of the great ports, takes him through many provinces of the vast republic and shows him **something of the "real" China,** of its people, its history and its beauty.

Express trains equipped with sleeping and buffet cars run once a week each way between Pukow (Nanking) and Tientsin connecting with the through service of the South-Manchuria and Trans-Siberian Railways.

Through mail trains equipped with **buffet cars run daily each way** between the before mentioned termini.

The crossing over the Yangtsekiang between Nanking and Pukow **is effected** by means of a modern 100-tons twin-screw ferry boat.

Special facilities and **liberal allowances** for passengers' baggage.

Best of **meals and wines supplied** on the trains.

Sanitation under the personal supervision of a **qualified medical officer.**

For further particulars apply to THE TRAFFIC MANAGER, Head Office, TIENTSIN or to the Agencies of Messrs. Thomas Cook & Sons, The International Sleeping Car & Express Trains Co. or the Nordisk Resebureau.

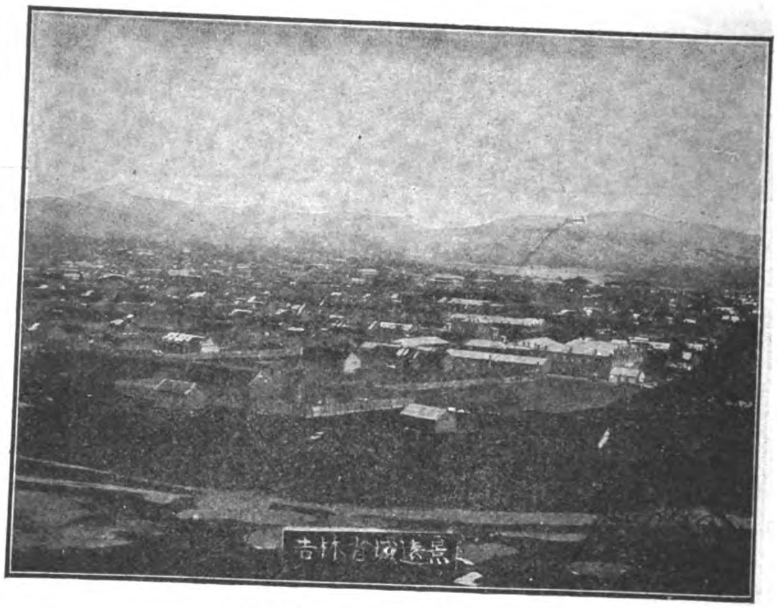
Telegraphic Address: TSINPURY—Tientsin (Tsinanfu, Nanking, Shanghai).

Codes: A B C 5th Edition; Broomhalls' (with Suppl. No. 1).

**Tientsin, May 1st, 1915.** **The Tientsin-Pukow Railway Administration.**

# 中華民國政府吉長鐵路行車時刻表
# CHINESE GOVERNMENT RAILWAYS KIRIN-CHANGCHUN LINE.
## TIME TABLE.

| DOWN TRAINS Daily Mixed | DOWN TRAINS Daily Mail | | STATIONS. | | UP TRAINS Daily Mail | UP TRAINS Daily Mixed |
|---|---|---|---|---|---|---|
| P.M. | A.M. | | | | P.M. | A.M. |
| 2.30 | 7.30 | dept. | TOUTAOKOU | arr. | 6.25 | 10.47 |
| 2.38 | 7.38 | arr. | CHANGCHUN | dept. | 6.15 | 10.37 |
| 2.45 | 7.41 | dept. | | arr. | 6.10 | 10.31 |
| 3.20 | 8.12 | arr. | KALUN | dept. | 5.40 | 9.57 |
| 3.25 | 8.14 | dept. | | arr. | 5.38 | 9.55 |
| 3.58 | 8.46 | arr. | YINMAHO | dept. | 5.06 | 9.22 |
| 4.02 | 8.48 | dept. | | arr. | 5.04 | 9.20 |
| 4.17 | 9.02 | arr. | HSIACHIUTAI | dept. | 4.50 | 9.05 |
| 4.22 | 9.04 | dept. | | arr. | 4.48 | 9.03 |
| 4.34 | 9.16 | arr. | YINGCHENGTZE | dept. | 4.36 | 8.50 |
| 4.38 | 9.18 | dept. | | arr. | 4.33 | 8.48 |
| 5.03 | 9.40 | arr. | TUMENLING | dept. | 4.12 | 8.24 |
| 5.13 | 9.50 | dept. | | arr. | 4.06 | 8.18 |
| | | arr. | CHAOCHIATIEN | dept. | 3.46 | 7.58 |
| 5.33 | 10.10 | dept. | | arr. | | |
| 5.57 | 10.31 | arr. | HUAPICHANG | dept. | 3.24 | 7.23 |
| 6.02 | 10.33 | dept. | | arr. | 3.22 | 7.20 |
| 6.18 | 10.46 | arr. | KUTIENTZE | dept. | 3.08 | 7.04 |
| 6.20 | 10.47 | dept. | | arr. | 3.07 | 7.03 |
| 6.38 | 11.03 | arr. | KIUCHAN | dept. | 2.52 | 6.45 |
| 6.43 | 11.05 | dept. | | arr. | 2.50 | 6.42 |
| 7.05 | 11.25 | arr. | KIRIN | dept. | 2.30 | 6.20 |

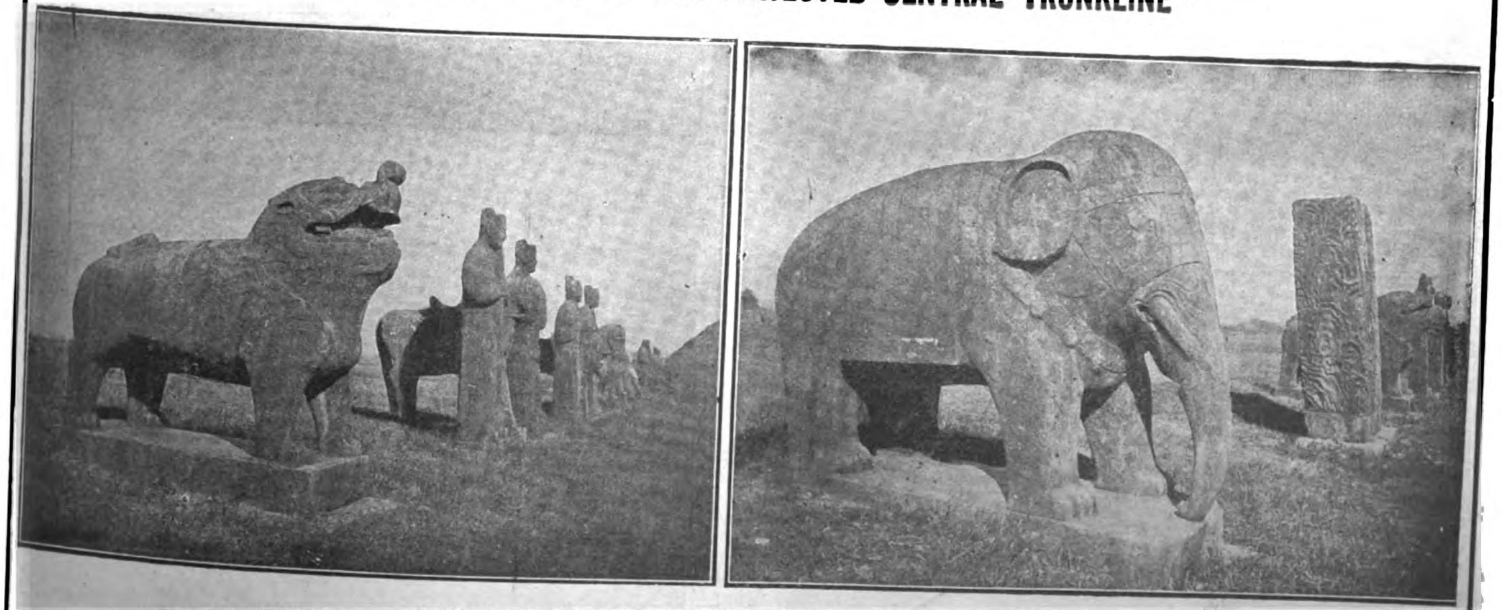


BIRD'S EYE VIEW OF KIRIN CITY

NOTICE:—"dept."=Departure. "arr."=Arrival.
1st May, 1915, and until further notice.

# THE PIENLO RAILWAY

## (KAIFENG-FU TO HONANFU)
## "THE FIRST SECTION OF THE PROJECTED CENTRAL TRUNKLINE"

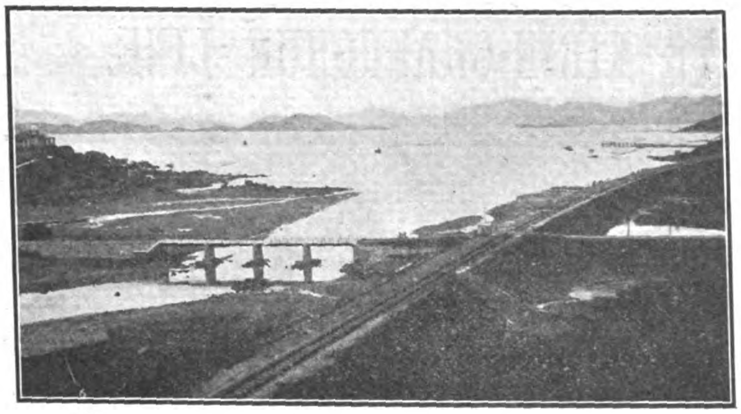


THE SUNG TOMBS NEAR KAIFENG-FU ON THE PIENLO RAILWAY.

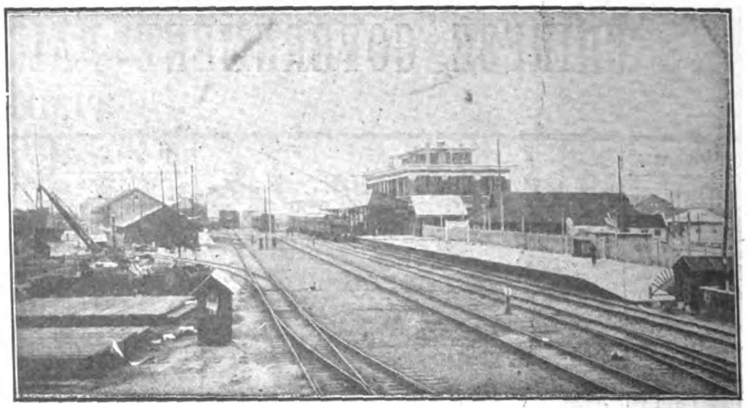
The line connects with the through service of the Peking-Hankow Railway at Tcheng Tchéou, enabling the traveller to visit Kaifengfu, the provincial capital of Honan, and the old capital of the Empire at Honanfu.

# CANTON-KOWLOON RAILWAY

**VIEWS ON THE BRITISH SECTION (22 MILES)** **VIEWS ON THE CHINESE SECTION, 89 MILES. (Chinese Government Railways)**



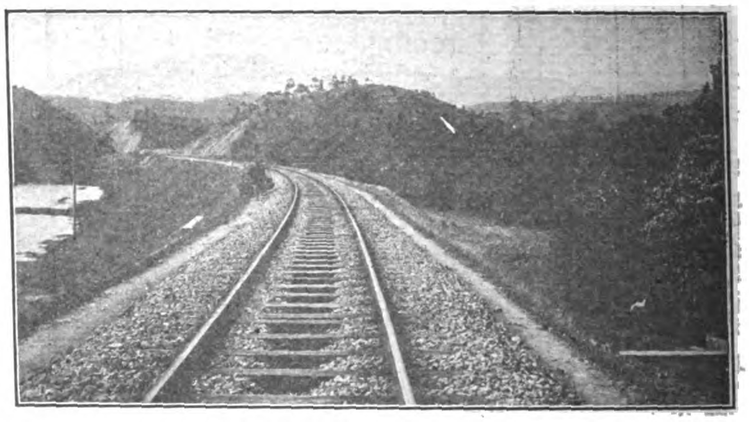
CANTON-KOWLOON RAILWAY—APPROACH TO KOWLOON



TAI SHA TAN STATION, CANTON

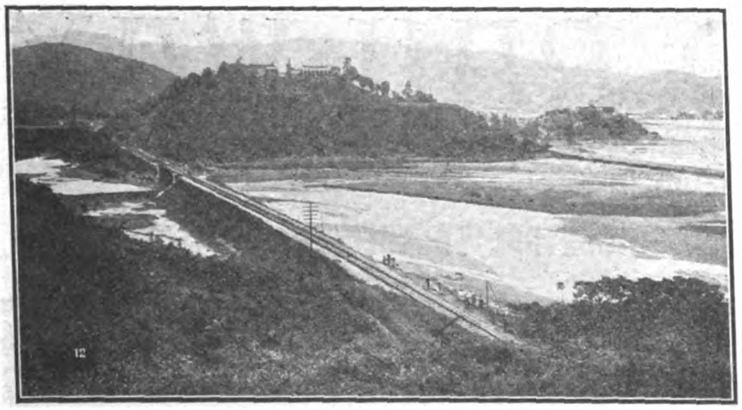
**QUICKEST AND CHEAPEST ROUTE BETWEEN CANTON AND HONGKONG THROUGH VARIED AND BEAUTIFUL SCENERY**

CANTON-KOWLOON RAILWAY—SCENE ALONG ROUTE

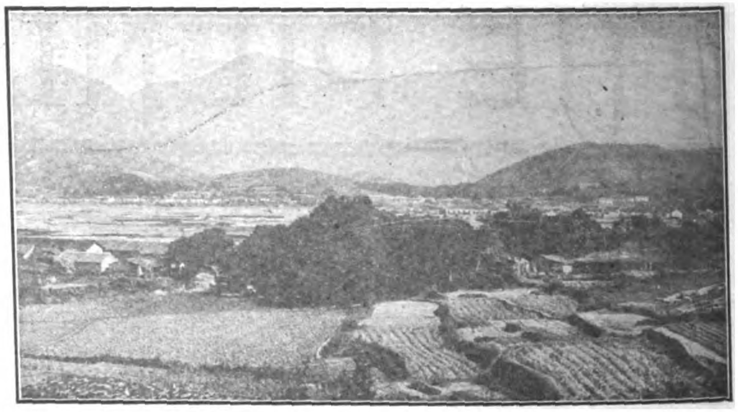


NEAR LE LOONG, CANTON-KOWLOON RAILWAY

**TWO EXPRESS CORRIDOR TRAINS EACH WAY DAILY—HOT MEALS AND OTHER REFRESHMENTS SERVED**

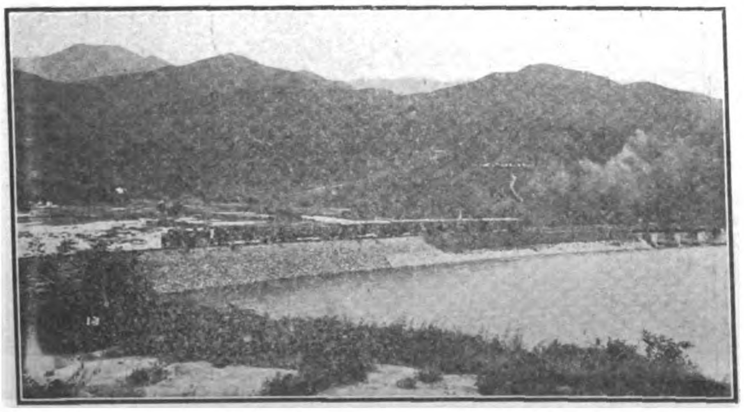


CANTON-KOWLOON RAILWAY—CROSSING TIDE FLATS

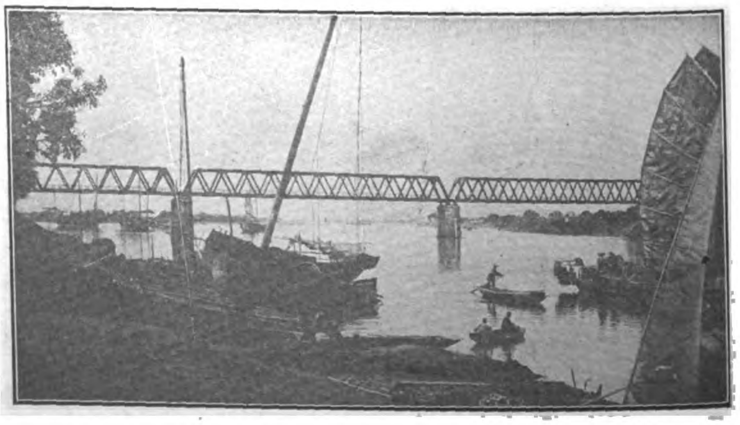


VILLAGES, CANTON-KOWLOON RAILWAY

**4¼ HOURS BETWEEN UP AND DOWN TRAINS FOR BUSINESS MEN OR TOURISTS AT CANTON OR HONGKONG**



CANTON-KOWLOON RAILWAY—EMBANKMENT APPROACH TO BRIDGE



EAST RIVER BRIDGE, CANTON-KOWLOON RAILWAY

## TIME TABLE

**Leave Hongkong (Kowloon) 8.05 a.m., 9.30,* 11.15 a.m., 11.55* a.m. & *3.15 p.m.**
**Arrive Canton (Tai Sha Tau) 11.45 a.m. 5.20 p.m. 3.50 p.m. 7.15 p.m.**

**Leave Canton (Tai Sha Tau) 7.25,* 8.35 a.m. 12.30* noon & 3.20* p.m.**
**Arrive Hongkong (Kowloon) 11.00 a.m. 4.35 p.m. 4.00 p.m. 6.55 p.m.**

**Special terms and special trains for large tourist parties. For further particulars see advertisements or apply to**

***Express** **The Manager (British Section) Kowloon, HONGKONG.** **The Administration (Chinese Section) CANTON.**

# Chosen Railways

**Most Important Link in the Round-the-World Routes via Siberia.**
**Safest and Quickest Overland Route between Europe or China and Japan.**

**Only 10 hours, Sea Passage between the Continent and Japan.**
**Best Opportunities for studying Unique Conditions in the Far East.**

## *Chosen-Manchuria Express*

**Fusan-Keijyo (Seoul)-Mukden-Changchun**

Weekly Service. Most Up-to-date Accommodation: 1st and 2nd Class Sleeping Cars and a Dining Car.

CONNECTIONS:

With the Trans-Siberian Express.
With the Tokyo-Shimonoseki Train de Luxe.
With the Peking-Mukden Train de Luxe.

## *Daily Express*

**Fusan-Keijyo-Antung**

Twice a day Service, taking all class Cars, besides 1st and 2nd Class Sleeping Cars (Keijyo-Fusan section only) and a Dining Car.

CONNECTIONS:

With trains on the South Manchuria Ry.
With express trains on the Japanese Rys.

## *Through Traffic*

Stations open to through traffic are as follows:—

**South Manchuria Railway.**—
Dairen, Changchun, Mukden, Yingkou, etc.

**Chinese Eastern Railway.**—
Tsitsihar, Manchuria and Harbin.

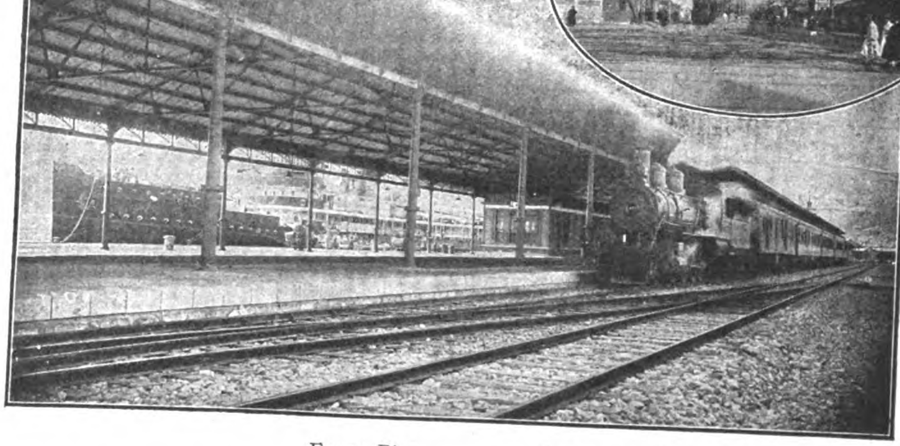
**Chinese Government Railways.**—
Hsinmingfu, Shanhaikuan, Peking, Tientsin, Shanghai, Nanking, Tsinanfu, Hankow, Nankow and Kalgan.

**Russian State Railways.**—
Irkutsk, Odessa, Warsaw, Moscow and Petrograd.

**Chosen Railways.**—
Fusan, Keijyo (Seoul) Heijyo, † Jinsen and † Chinnampo.

**Japanese Railways.**—
(via Chosen)
Tokyo, Yokohama, † Nagoya, Kyoto, Osaka, Kobe, Shimonoseki, Moji and Nagasaki.

† No through traffic to or from points of the Chinese Eastern Railway and the Russian State Railways.



Fusan Pier

A scene in Keijyo (Seoul)

## *Ticket Agencies*

The International Sleeping Car Company; Messrs. Thos. Cook & Son; The Nordisk Resebureau.

## *Hotels*

Under the Direct Management of the Railway Bureau.

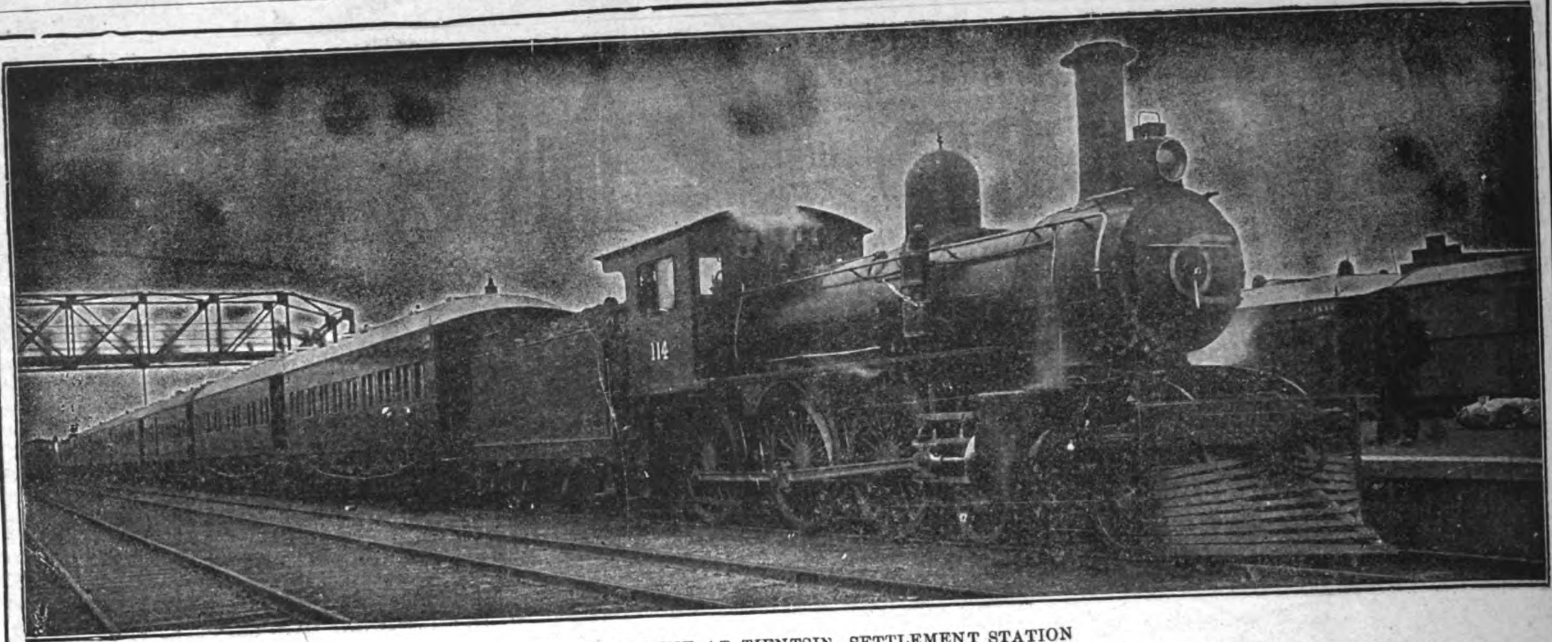
CHOSEN HOTEL AT KEIJYO (Seoul).—Cable Add: "CHOHO" 80 bedrooms mostly with bath; Motor-cars meet guests at the station.

STATION HOTELS AT FUSAN AND SHINGISHU.—The most convenient and comfortable stopping places on the upper floors of the two station buildings.

FOR FURTHER PARTICULARS PLEASE APPLY TO

# Railway Bureau of the Government-General of Chosen,

**Cable Add: "SENTETS."** **Ryuzan, Chosen.** **Code Used: A. B. C., 5th Edition.**


TRAIN DE LUXE AT TIENTSIN SETTLEMENT STATION

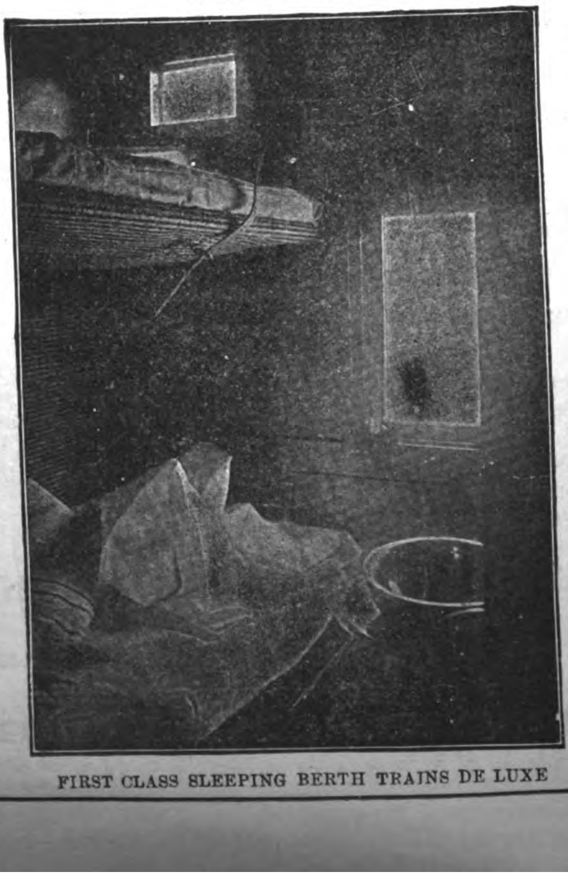
# CHINESE GOVERNMENT RAILWAYS OF NORTH CHINA

THROUGH SERVICE FROM PEKING TO MUKDEN, CONNECTING AT MUKDEN WITH THE SOUTH MANCHURIA EXPRESS FROM TRANS-SIBERIAN ROUTE: AT PEKING CONNECTION IS MADE WITH THE PEKING-HANKOW RAILWAY FOR HANKOW AND YANGTSZE PORTS, AND INTERMEDIATE POINTS REACHED BY THE CHEN-TAI LINE TO TAIYUANFU, THE TAO-CHING LINE, AND THE PEINLO RAILWAY TO KAIFENGFU AND HONANFU. CONNECTION IS ALSO MADE AT PEKING WITH THE PICTURESQUE KALGAN LINE, "THE ROAD TO THE GREAT WALL."

## THE RAILWAYS OF NORTH CHINA PASS THROUGH THE MOST INTERESTING PART OF CHINA

**PEKING:** THE CAPITAL, WITH ITS WALLS, PALACES, TEMPLES AND TOMBS.—**TIENTSIN:** THE GREAT TRADE CENTER OF NORTH CHINA. —**TONGSHAN:** THE LARGEST MINING AND INDUSTRIAL TOWN IN THE COUNTRY.—**SHANHAI-KWAN:** WHERE THE GREAT WALL ENDS AT THE SEA.—**NEW-CHWANG:** THE BUSY COMMERCIAL PORT OF MANCHURIA. —**MUKDEN:** THE ANCESTRAL HOME OF THE MANCHU DYNASTY. A MINIATURE PEKING, WITH ITS WALLS, IMPERIAL PALACES, TEMPLES AND TOMBS.

PEKING STATION


FIRST CLASS SLEEPING BERTH TRAINS DE LUXE

THE THROUGH TRAINS ARE EQUIPPED WITH BUFFET AND DINING CAR SERVICE, AND A COMFORTABLE, MODERN TRAIN DE LUXE OF COMPARTMENT SLEEPING COACHES HAS BEEN PLACED IN OPERATION THIS SEASON TO CONNECT WITH THE THROUGH SERVICE OF THE TRANS-SIBERIAN AND SOUTH MANCHURIAN RAILWAYS

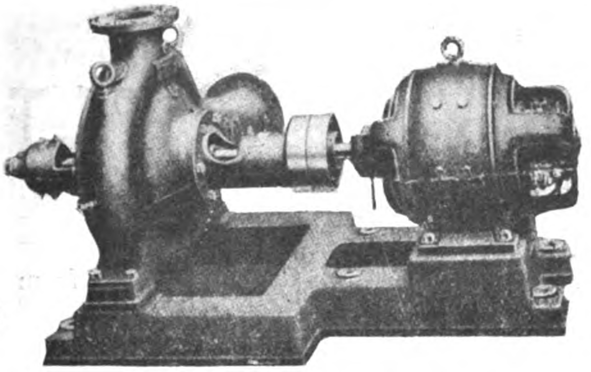
For further information apply to any office in America or Europe of

## The Cie. Internationale Des Wagons-Lits, Thos. Cook & Sons, or Railways of North China

**TIENTSIN, NORTH CHINA**
**By order of Directorate**

# *Pumps for all Duties*

All our Pumps are made of the highest quality materials, and the finest workmanship is put into them. Please write for our Booklet.



Our Staff of Engineers is at your service to advise on any matter relating to the displacement of water in bulk.

**WE manufacture Turbine Pumps (for high and low lifts), Centrifugal Pumps, Medium Lift Pumps, High-lift single-chamber Pumps, and High-lift Multi-chamber Pumps. Any Capacity—Any Head—Any Speed.**

One of our customers—the Manager of an important Colliery in Wales—informed us that a high-lift Pump supplied by us in 1914 had been in operation for 13 months, and had cost only 2d for packing and a few pence for lubricating oil. He considered he had saved the entire cost of the pump and motor out of what he would have had to pay for repairs and labour in connection with his previous steam pump.

Park Works, MANCHESTER.

**Mather & Platt, Ltd.**

Queen Anne's Chambers, LONDON.



# PRATT'S

# MOTOR SPIRIT

## STANDARD OIL CO. OF N.Y.

For the money you expend on gasoline, you naturally wish to secure the greatest horsepower and mileage.

To obtain the highest efficiency we recommend our gasoline and believe that after a trial you will be convinced of its superiority.

This gasoline is filled into cases containing two 5 gallon cans at our refinery in the United States and is delivered direct to you in the original package, making it impossible for the gasoline to become contaminated with any foreign matter.

**STANDARD OIL COMPANY OF NEW YORK,**

**SHANGHAI**

GASOLINE DEPARTMENT.

**Branches in all Principal Cities of China**

# SOCONY ASPHALTUM

**SOCONY ASPHALTUM** is manufactured from asphaltic base crude oil by scientific processes, and fulfils all the requirements of high ductility, adhesiveness, toughness and accommodation to high ranges of temperature.

**SOCONY ASPHALTUM** can be supplied in all degrees of hardness, suitable for use without the admixture of lighter oils, and is adapted to the following processes.

Permanent Road Construction.
Roofing, damp coursing, factory floors and tennis courts.
Pipe dipping.
Treatment of railroad ties, telegraph poles and posts.
Coating for structural steel and concrete sewer pipes.

**SOCONY ASPHALTUM** can be supplied in grades having **melting points as high as 221° F.** thus adapting it to use in the hottest climates.

**SOCONY ASPHALTUM** is not an experiment, having been in **successful use for many years** throughout the United States.

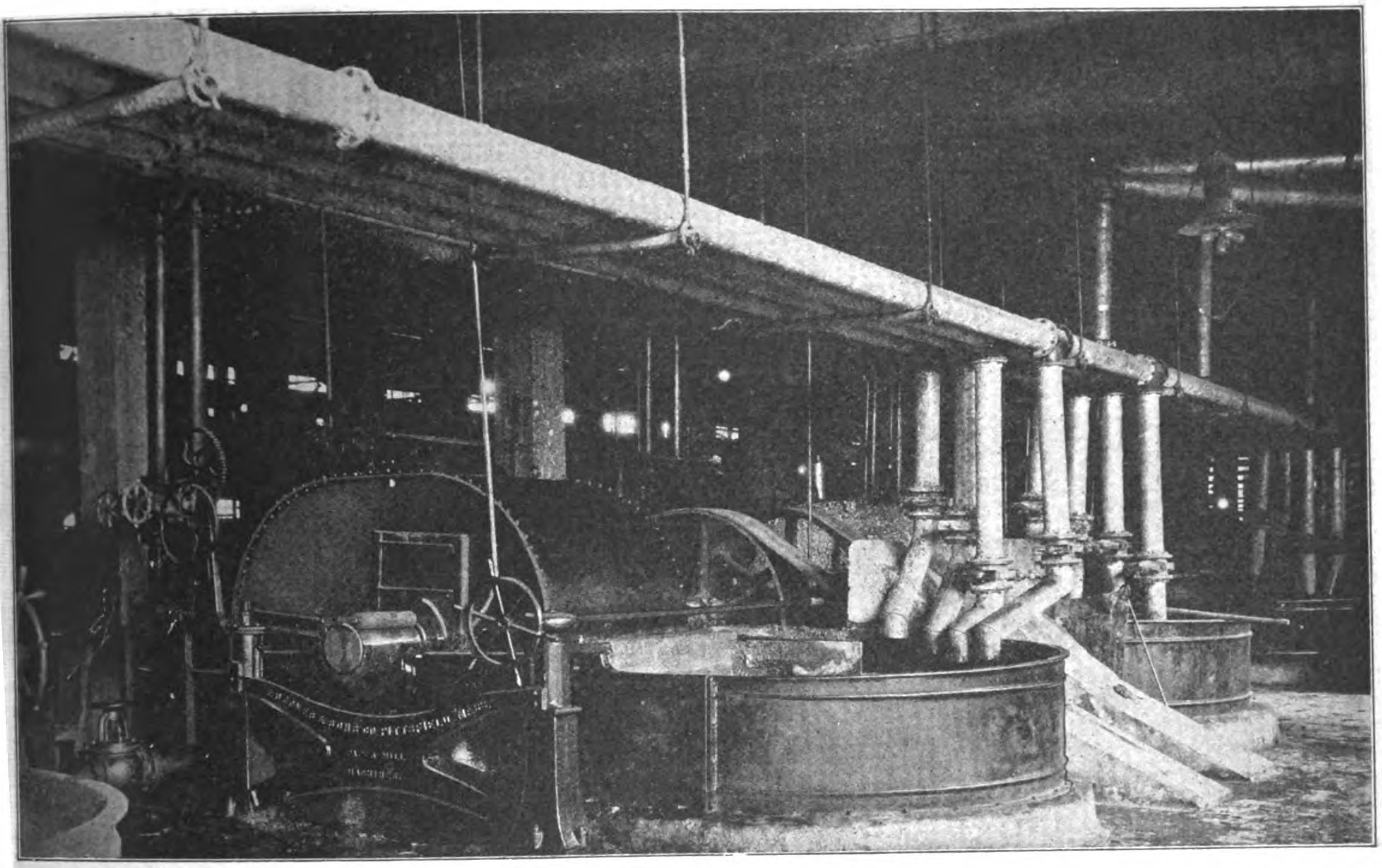
Full information relative to its use and prices may be obtained from

**THE STANDARD OIL COMPANY OF NEW YORK**

LUBRICATING OIL DEPARTMENT

**11 & 12 Canton Road, Shanghai**

# The Iron That's Made to Last



Demonstrates its superior qual ty in hundreds of uses.

# ARMCO IRON

## Resists Rust

Because of its unequalled PURITY and the SCIENTIFIC CARE given to every process of its manufacture.

### Armco Iron Corrugated Culverts

for highway and railroad drainage, have proven their convenience, reliability and lasting quality in thousands of installations.

Their corrugated form and interlocking joints give them immense strength and a ***resiliency*** which enables them to conform without injury to settling and shifting foundations.

*Send for Catalogue.*

The illustration is of a Pulp-Beater in a great paper factory. The hood over the rolls is of Armco Iron. When the machine was first installed this portion was of ordinary steel. In two years the fume-laden steam had corroded it to utter failure. It was then replaced with Armco Iron, and this after four years of constant service is apparently as good as new.

This is the material **par excellence** for Roofing and Siding Sheet Metal Work, Corrugated Culverts and all sorts of exposed metal installations.

THE AMERICAN

**ROLLING MILL Co.**

*Licensed Manufacturers Under Patents Granted International Metal Products Co.*

**Middletown, Ohio, U.S.A.**

Cable Address: "Armco, Middletown"

CHINA AGENTS

THE CHINESE AND AMERICAN Co.

SHANGHAI

### Armco Iron Galvanized Corrugated Roofing and Siding

will certainly save money in the long run for those who have buildings to maintain in tropical climates or where they are exposed to dampness or salt air.

# United States Steel Products Company

**Union Building, No. 4 The Bund, Shanghai**

*Telegraphic Address:*
*"STEELYARD" SHANGHAI*

*Exporters of the Products of*

CARNEGIE STEEL CO.
ILLINOIS STEEL CO.
THE LORAIN STEEL CO.
NATIONAL TUBE CO.
AMERICAN STEEL & WIRE CO.
AMERICAN SHEET AND TIN PLATE CO.
AMERICAN BRIDGE CO.
SHELBY STEEL TUBE CO.
TENNESSEE COAL IRON AND R. R. CO.

## LIST OF PRODUCTS

BESSEMER and BASIC OPEN HEARTH STEEL.
Billets, Slabs, Sheet and Tin Plate Bars; Skelp.

STEEL RAILS, Splice Bars, Bolts, Nuts, Spikes, and other accessories;
CROSSINGS, FROGS, SWITCHES, and other SPECIAL WORK;
Steel Cross Ties; Copper Rail Bonds; Tubular Poles.

Beams, Channels, Angles, Tees, Zees, Steel Mine Timbers and other STRUCTURAL SHAPES.

"UNITED STATES" "FRIESTEDT" STEEL SHEET PILING.

STEEL PLATES for Shipbuilding, Tanks, Boilers, etc.; FLANGE and FIRE BOX STEEL;
Checkered Floor Plates;
Black, Galvanized and Painted STEEL SHEETS, Flat and Corrugated;
Special Rust Resisting Sheets, Plates and Shapes;
Range Steel; Tack Plate; Locomotive Jacket Iron; Patent Planished Sheet Iron; etc.
Metal Lath, Metal Ceiling and Siding; Electrical Sheets.

STEEL HOOPS and COTTON TIES.

MERCHANT BARS—Rounds, Squares, Flats, Ovals, Hexagons, and other Bar Shapes.
Twisted and Deformed Bars for Concrete Reinforcement.

Special Iron and Steel for Bolts, Rivets, Shafting and other purposes;
COLD DRAWN STEEL SHAFTING, and BARS—Rounds, Squares, Flats, Hexagons, and
other shapes—for SCREW MAKING and other MANUFACTURING PURPOSES.

SOLID FORGED and ROLLED STEEL WHEELS, and FORGED STEEL AXLES;
FORGINGS for Machinery and Special Purposes.

BLACK and GALVANIZED WROUGHT MERCHANT PIPE for GAS, WATER, STEAM,
Seamless Steel and Lapwelded BOILER TUBES for OIL and ARTESIAN WELLS;
STEEL DERRICKS and DRILLING RIGS for Stationary, Locomotive and Marine Works;
CASING, TUBING and DRIVE PIPE for OIL and other WELLS; GAS and OIL LINE PIPE;
LAP-WELDED and SEAMLESS CYLINDERS for Compressed Air, Carbonic Acid Gas, Andydrous Ammonia, etc.;
Converse and Matheson LEAD JOINT PIPE for WATER and GAS MAINS;
SEAMLESS TUBES, Shrapnel, Projectiles, and Miscellaneous Forgings.

CAST IRON and MALLEABLE IRON FITTINGS for Tubes and Pipe;
Brass and Iron VALVES and COCKS.

WIRE RODS; DRAWN STEEL WIRE of every description; BARB WIRE;
PLAIN GALVANIZED and VARNISHED FENCE WIRE; WOVEN WIRE FENCING; FENCE STAPLES;
Galvanized Steel Fence Posts and Gates; Netting and Weaving Wires; Mattress, Broom and Bottling Wires;
Triangle Mesh Woven Wire Reinforcement for Concrete; GALVANIZED TELEGRAPH and TELEPHONE WIRES;
COPPER WIRES; ELECTRICAL WIRES; CABLES and TROLLEY WIRES;
TOWERS for HIGH VOLTAGE ELECTRICAL TRANSMISSION LINES.

WIRE NAILS and WIRE TACKS; WIRE BALE TIES; WIRE HOOPS; FLAT, HELICAL and SPECIAL SPRINGS;
WIRE ROPE, CABLES and HAWSERS; Wire Sash Cords and Clothes Lines;
WIRE ROPE TRAMWAYS and CABLE HOIST CONVEYORS.

HORSE and MULE SHOES.

TIN PLATES—Coke, Charcoal and Terne; BLACK PLATES for Tinning, Stamping, Enamelling, and other purposes.

Designs and Estimates submitted for BRIDGES and STEEL BUILDINGS erected complete,
or prepared for erection. Steel Barges, Steel Tanks, Eye-bars, Sleeve Nuts, Clevices.

FOUNDRY and BASIC PIG IRON; COAL; COKE.

# THE FULLER-LEHIGH PULVERIZER MILL

**4000 Machines Installed In Various Branches of Trade Attest the Superiority of the Fuller Mill.**
**The Most Economical Mill for Pulverizing Various Refractory Materials.**

| | | | | | | |
|---|---|---|---|---|---|---|
| ANTHRACITE COAL | CEMENT ROCK | COPPER ORE | GOLD QUARTZ | LIMESTONE | PHOSPHATE ROCK | SLATE |
| ASBESTOS ROCK | CEMENT CLINKER | DOLOMITE | GRAPHITE | LITHOPONE | PLASTER | TALC |
| ASPHALT FILLER | CHALK | FELDSPAR | GYPSUM | MAGNESITE | PORTLAND CEMENT | TRIPOLI |
| BARYTES | CHARCOAL | FIRE CLAY | HYDRATED LIME | MARBLE | PUDDLER'S SLAG | TUFA |
| BAUXITE | CHROME ORE | FLUOR SPAR | IRON ORE | OCHRE | QUARTZ | UMBER |
| BITUMINOUS COAL | CLAY | FOUNDRY FACING | KAOLIN | ORES | SHELLS | VANADIUM ORE |
| BONE BLACK | COAL | FULLERS EARTH | LAVA | OYSTER SHELLS | SILICA | WHITING |
| CARBON | COKE | GLASS | LIME | PAINT | SLAG | |

If interested in heating furnaces with **Pulverized Coal,** investigate our Pulverized Coal Equipment. Crush your coal with our **Lehigh Crushing Rolls.** Dry your Coal with our **Indirect Fired Rotary Dryers.** Pulverize your coal with our **Fuller-Lehigh Pulverizer Mills.** We will be pleased to send full information and catalogue upon request.

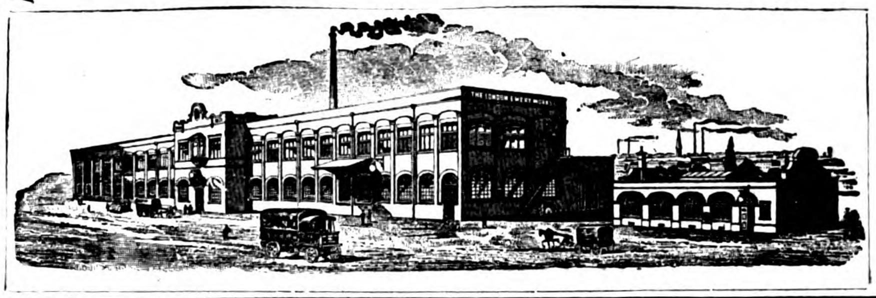
Fuller Quality Products consisting of Sprockets, Traction Wheels, Gears, Tube Mill Linings, Crusher and Pulverizer Mill repair parts and Special Castings are covered by our Catalogue No. 50. Send for a copy.

**LEHIGH CAR, WHEEL & AXLE WORKS**
*Main Office* Catasauqua, Pa., U.S.A. *Branch Office* 50 Church St., New York, U.S.A.
**Cable Address: "Carwheel" Catasauqua.**

# Our HOME

Where **"Atlas"** Brand
**EMERY CLOTHS, GLASS and FLINT PAPERS are made.**

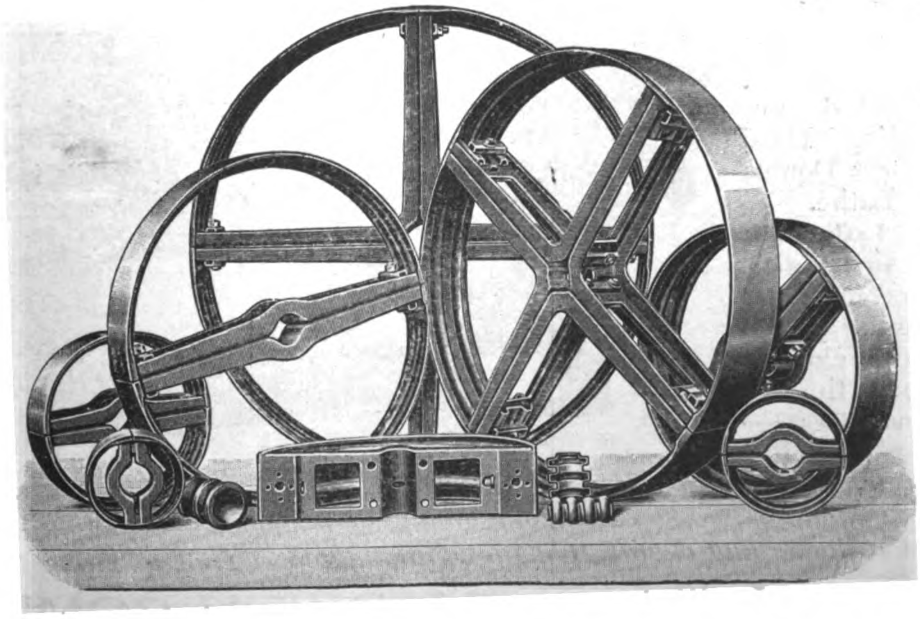
***Samples and Prices can be had through your usual Buying House.***



**The LONDON EMERY WORKS Co., Ltd.**
HERCULES WORKS, TOTTENHAM, LONDON, ENGLAND.

# SHANGHAI MACHINE COMPANY

ALL SIZES STOCKED



STEEL PULLEYS.
LEATHER BELTING.
BALATA BELTING HANGERS.
BRACKETS with RING OILING BEARINGS.

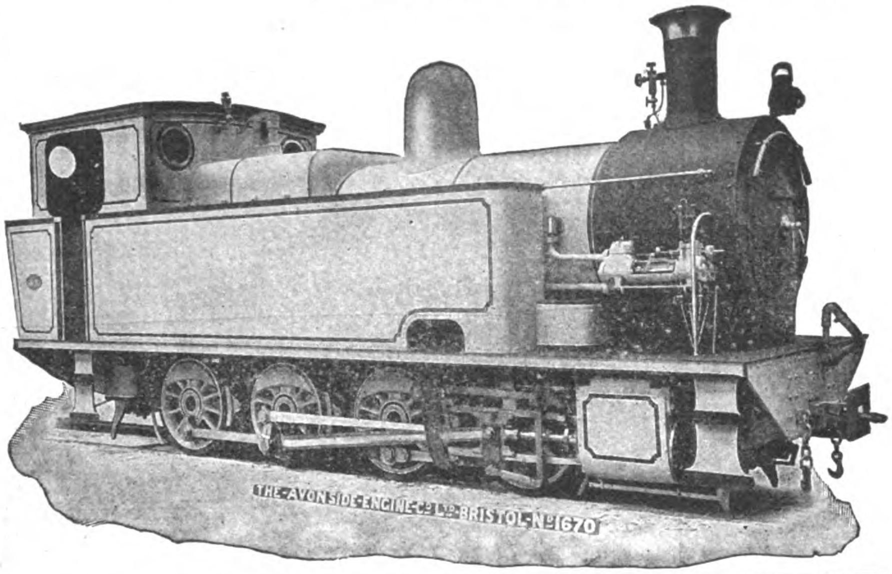
**SHANGHAI. HANKOW. TIENTSIN.**

THE . .

# AVONSIDE ENGINE CO., LTD.

Builders of Steam and Internal Combustion

# LOCOMOTIVES.



BRISTOL, ENGLAND.

CABLEGRAMS:

"LOCO, BRISTOL."

## EIGHT THOUSAND FIVE HUNDRED OF THEM.

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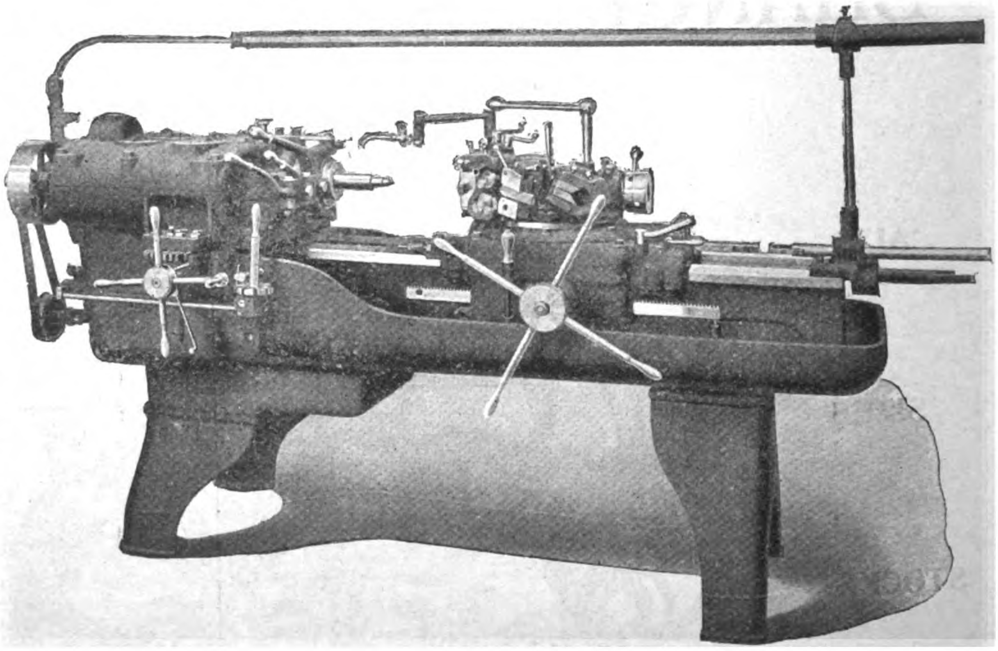

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# THE FAR EASTERN REVIEW

COMMERCE :-: ENGINEERING :-: FINANCE

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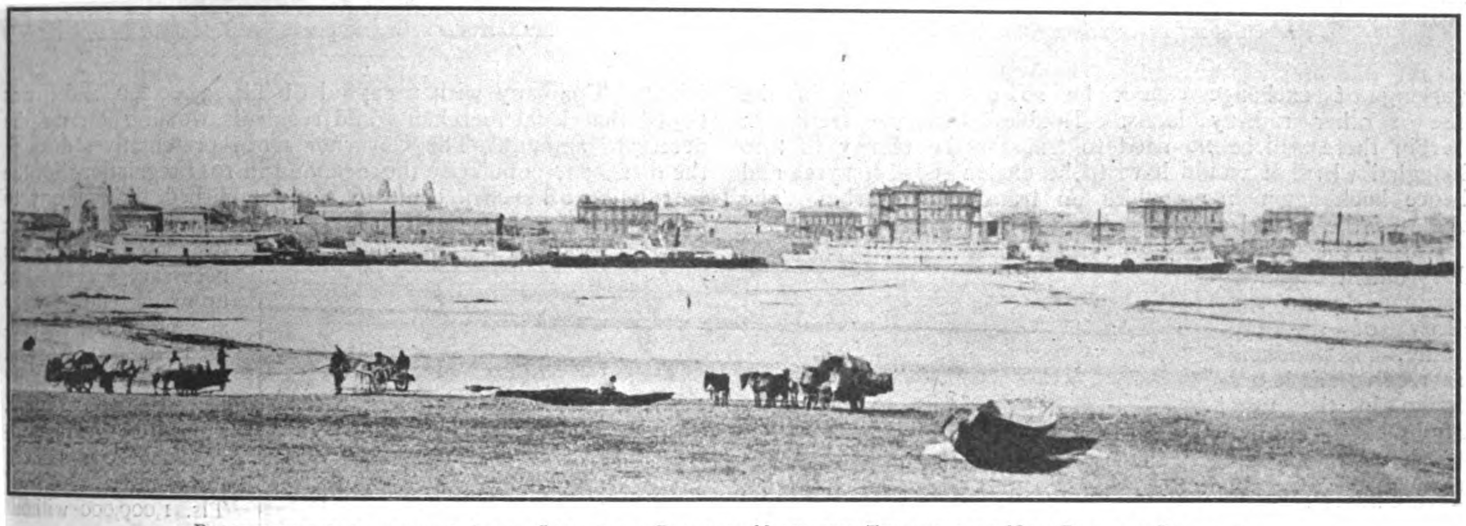


BLAGOVESHCHENSK ON THE AMUR SEEN FROM PROPOSED NORTHERN TERMINAL OF NEW RUSSIAN RAILWAY

# NEW RAILWAYS IN NORTH MANCHURIA

## Russia Consolidates Her Position

An important agreement was signed in Peking on March 27 last between the Russo-Asiatic Bank, represented by Mr. L. de Hoyer, and the Chinese Government, represented by Mr. Liang Tung-yen, the Minister of Communications, and Mr. Chou Hsu-shih, Minister of Finance, for the construction of a railway connecting the cities of Harbin, Mergen, Aigun, and Tsitsihar, in Northern Manchuria.

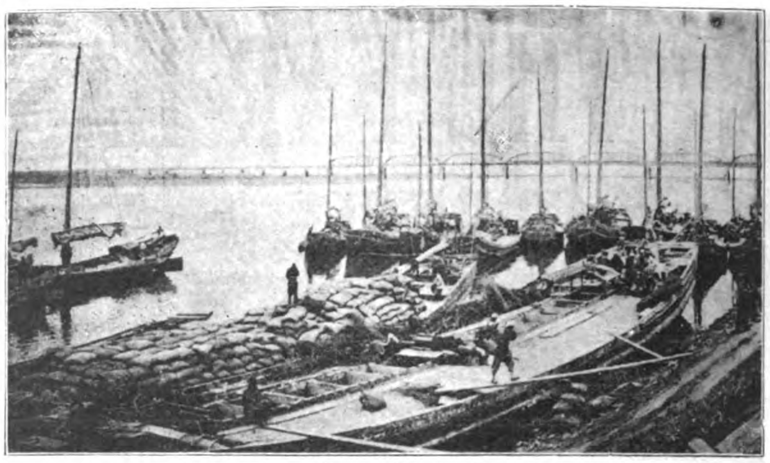
As is well known Harbin is an important city at the junction of the Siberian Railway and the line running south to Changchun and thence to Dalny, while Tsitsihar is connected with the Siberian Railway by a light line which will be taken over under the agreement just signed. Mergen is a little more than half way between Tsitsihar and Aigun, which is on the Amur River. North of Aigun, on the opposite side of the Amur, is the city of Blagoveshchensk, which the new railway is destined to serve. Connection will be made by means of ferry boats with what is now the village of Heiheifu, opposite Blagoveshchensk, where the railway will terminate.

The total length of the proposed railway is approximately 1,000 kilometres. It will link up the Siberian railway with the Amur River, and will consolidate Russian interests, and incidentally develop great areas of valuable territory, in North Manchuria. An interesting point is that it will cover the northern section of what is known as the Chinchow-Aigun project, the agreement for which is held by the American Group of Bankers, but which was rendered void by the energetic protests of Japan that the proposed line would parallel the South Manchuria Railway.

RUSSIAN FARM IN NORTH MANCHURIA

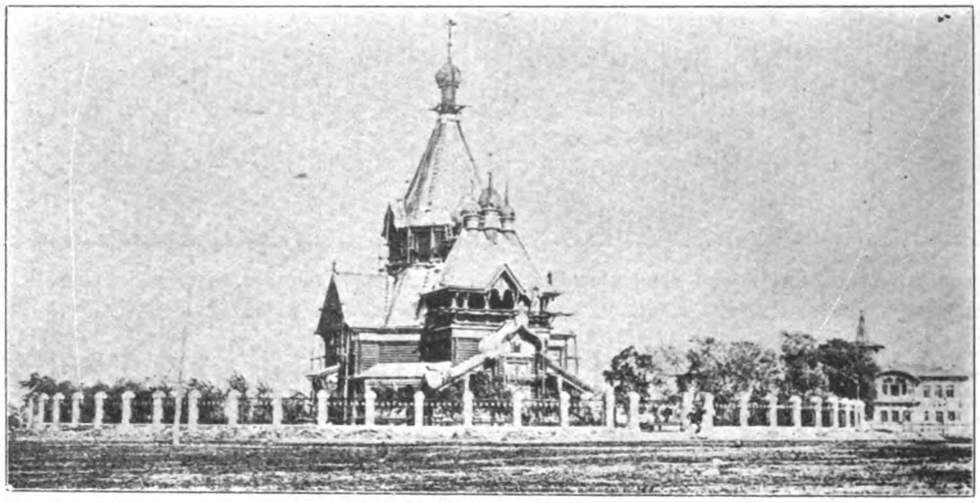
The agreement is for a loan of fifty million Roubles, and any additional amount which might be required to complete the project, the loan to be floated when financial conditions may permit after the war, and in whatever markets the Russo-Asiatic Bank may deem money to be available. The agreement is regarded as an improvement on other railway agreements in China where the interests of the financiers are concerned with control of expenditure, etc., while the Chinese Government gains a distinct pecuniary advantage owing to an arrangement being made whereby the

River Barges in Sungari Near Harbin



Manchurian Grain Boats Near Harbin

working of exchange cannot be so disastrous as in the case of other railway loans. Roubles being current in Harbin there will be no need to transfer the money first to Shanghai where it would have to be exchanged into sycee and thence back again into roubles on transfer to Harbin. The whole of the capital as required will be sent direct from Russia to Harbin, the Chinese Government gaining advantage by the simplicity of the procedure. The bondholders receive ample protection in the usual way by having the line, etc., as security, by the employment of qualified Engineers and Accountants, etc., and in addition by the arrangement that the earnings of the railway shall be deposited in branches of the Russo-Asiatic Bank.

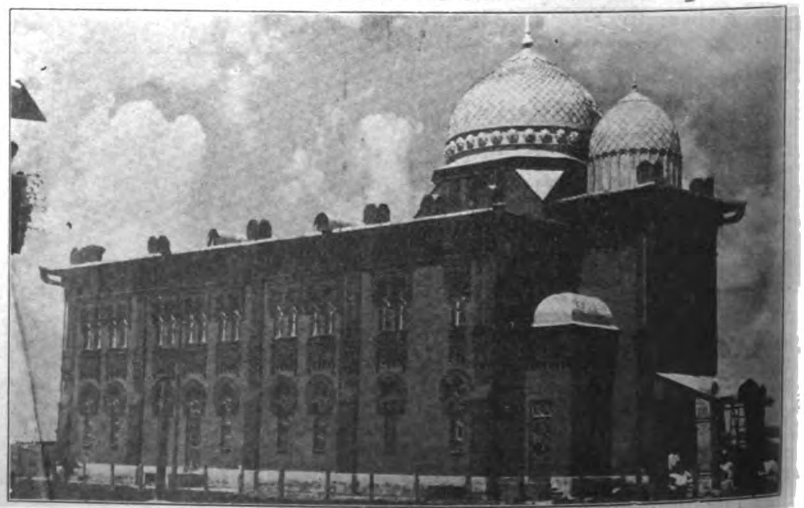


Russian Church in Harbin

The idea of building a railway from Harbin to Aigun has long been entertained by the Chinese authorities in the Province of Heilungchiang (or Tsitsihar) as well as by the commercial people in Aigun, Mergen, Harbin and other centres in Northern Manchuria. In April, 1910, the Provincial Assembly of Heilungchiang drafted a scheme, which was approved by the Governor of Tsitsihar, for the building of a line from Harbin to Heilunfu (or Tunkan, as it is called in Russian) which lies some 210 kilometres northwest of Harbin. It was intended to form a Limited Company with a capital of Tls. 3,000,000, and it was hoped that local merchants and residents would subscribe the necessary amount. The Governor sent representatives through the district to popularise the idea, and in 1911 regulations for the foundation of such a company were published, the company to be called the Lan-Har Railway Company. Engineers were instructed to make the necessary surveys, but up to the end of 1912 an amount not exceeding $100,000 was all that was raised by private subscription, though the Peking Government was induced to promise a subsidy of Tls. 1,000,000 without interest.

In 1913 the question was again brought before the Provincial Assembly of Tsitsihar, some members being energetic and sanguine in their advocacy of the scheme. In their speeches they particularly emphasised two points, one that if the Chinese built the railway themselves foreigners would thus be prevented from asking for the right to construct it, and another that the railway would facilitate the movement of troops and thus serve to check the raiding Hunghutzes, or brigands, who were often used as a pretext by foreigners to interfere in China's administration in Northern Manchuria.

Manchurian Farm House



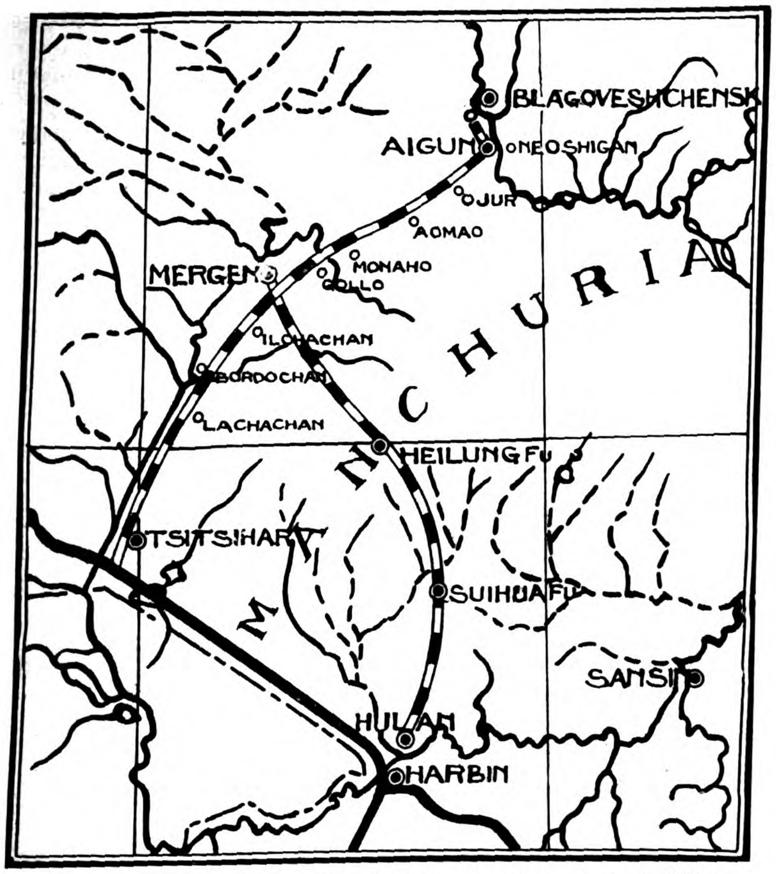
Jewish Synagogue at Harbin

Bridge Over the Sungari at Harbin

The project of 1910 contemplated the building of a narrow gauge railway, while the second one had in view a line of standard gauge, as in use in China. As, however, the most sanguine advocates of the scheme had to admit that they could not raise sufficient capital to carry it out in its entirety they suggested to begin by building the line from Harbin to Hulanchen, about 20 kilometres from Harbin, and from there to Hailunpu, about 175 kilometres from Harbin.

This railway was estimated to cost $7,000,000. It was hoped that with assistance to the extent of Tls. 2,000,000 from the Peking Government the balance could be found locally. The Central Government, however, did not seem to be disposed to advance that sum, probably having some doubt as to the capability of local people finding the balance.

For about two years the scheme showed no signs of development. The Russo-Asiatic Bank then offered to furnish the necessary capital, and the Minister of Communications in Peking entered into negotiations with Mr. L.

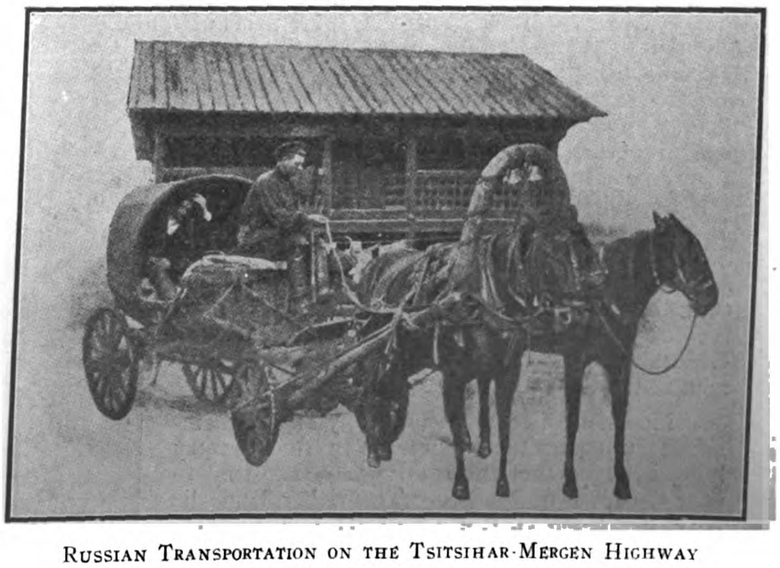



Map of Northern Manchuria Showing the Route of two New Lines from Tsitsihar to Blagoveshchensk via Mergen and from Hulan (Harbin) to Mergen—Existing Lines Shown in Black

DeHoyer, the representative of the Bank in Peking. Negotiations began in August, 1914, and lasted until March 27, 1916, when the agreement was signed.

Apart from its value to Russia as a means of consolidating the interests of that nation in Northern Manchuria, the railway will open up an extensive region of valuable country, and will materially assist the work of colonization set afoot by the construction of the Chinese Eastern Railway. Before the building of that line virtually the whole of North Manchuria was a wild uncultivated country. The very sparsely populated areas about the Sungari River and its affluent the Hulan River were the lands of the Mongolian tribesmen known as the Horlos, while further north came those of the Olots, and still further north towards Mergen those of the Daurs. In the smaller Khingan mountains were tribes living on the chase, and only in the extreme north along the Amur River were there a few settlements of Manchu Bannermen. At this time there was only one small town

Russian Colonists on Amur River Steamer

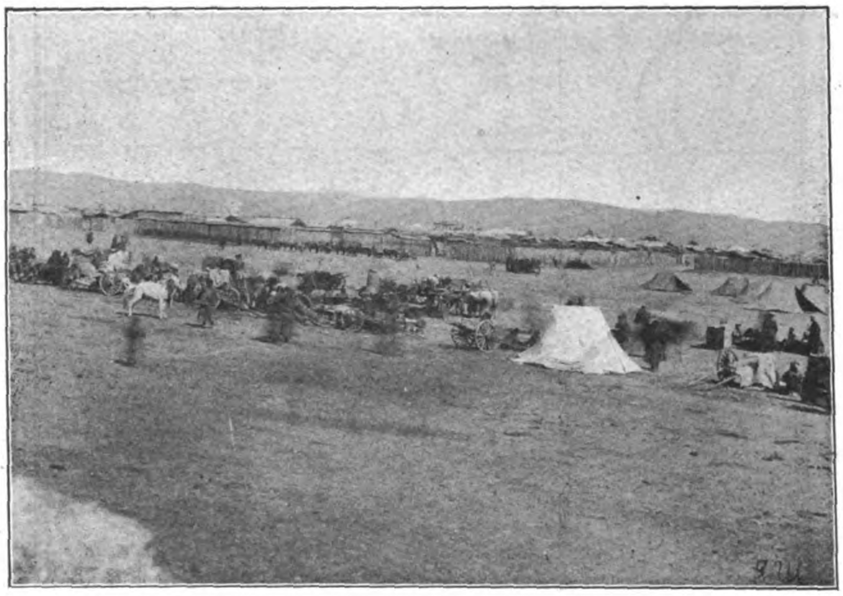


Russian Transportation on the Tsitsihar-Mergen Highway

Main Street of Tsitsihar, the Capital of Heilungchiang

worth mentioning, except Aigun, on the Amur River, and that was Heilungcheng on the Hulan River.

With the construction of the Chinese Eastern Railway great numbers of workmen and coolies were transported from China, mostly from Shantung Province. They earned comparatively large wages, and settled down in proximity to the railway. Thus were created the first districts in the zone of the Chinese Eastern Railway to the north of Harbin, the districts of Hulanfu, Suihuafu and Hailunfu. The advent of Chinese settlers caused the Mongol tribesmen to be pushed gradually farther and farther westward towards the Barga, and with their withdrawal the rich lands watered by the Sungari and Hulan Rivers were put under cultivation.



Mongolian Market Encampment in North Manchuria

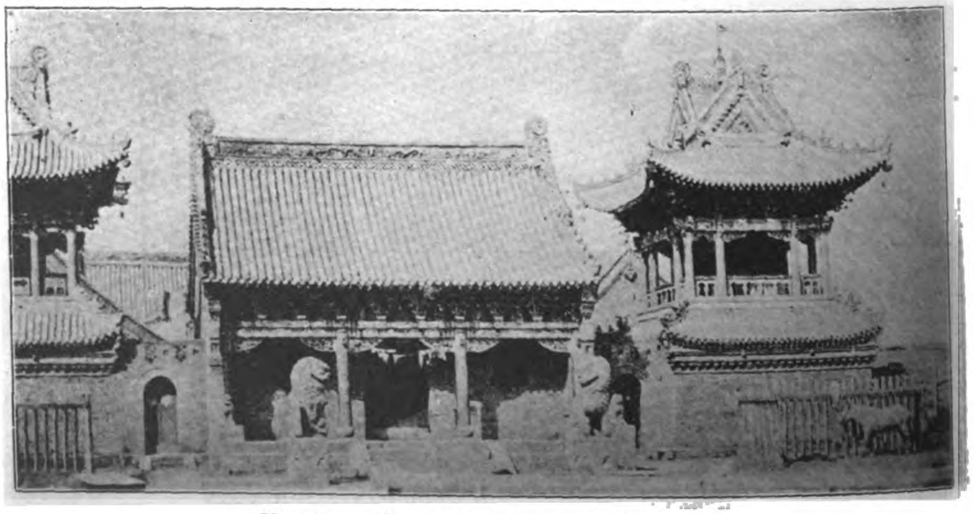
Immigration was developing most satisfactorily when the Boxer rising of 1900 put a stop to Chinese progress in this part of the Empire for six or seven years. In the last years of the Manchu regime a sound and serious scheme of emigration was launched by the Peking Government, in accordance with which, as is well known, Inner Mongolia, some parts of Turkestan and Manchuria had to be colonised by Shantung, Hunan, and other Chinese peasants. The Governor of Tsitsihar had to follow regulations issued by Peking, but the greatest facilities were accorded to colonists, enabling settlers to push northward until Heilunfu was reached. The Province of Heilungchiang, (Tsitsihar) was divided into the six districts of Heilungchiang, Suhuafu, Heilengfu, Mergen, Heiheifu and Aigun, roads were built between the district towns and telegraph lines were erected. In 1909 the old system of government under a Tartar General was abolished and a purely Chinese administration was inaugurated.

Most of the colonists naturally busied themselves in agricultural pursuits in the country lying between the Chinese Eastern Railway to near the town of Mergen. The richer lands lie near the Sungari River and its affluents, the Hulan and the Tunkan Rivers. Further to the north of Mergen the land becomes poorer, but on the whole may still be considered fertile. Wheat, barley, oats, beans, kiaoling, maize and other cereals flourish, the average crop per acre being 1,440 lbs.

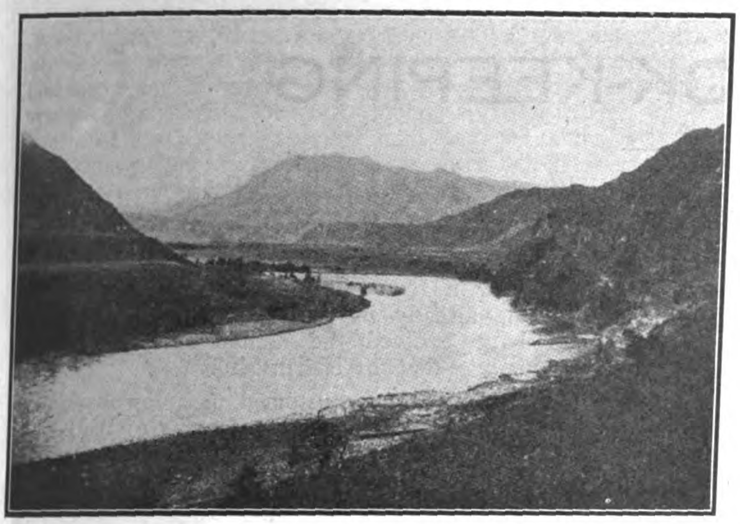
The northern region, which has as its centre the Amur River, is less rich from the point of view of agriculture. The winters are very cold, the summers short and the rainfall heavy. Wheat and oats are, however, grown with some success but the crops are about half that of the southern section. Insofar as other products are concerned there are deposits of graphite north of Suihuafu, and near Mergen on the River Hunhai are coal fields. Between Mergen and the Amur River there are extensive forests, while precious metals exist in the mountains.

Although the location of the line has not yet been made it will probably have a length of 725 kilometers between Harbin and Heiheifu, and will connect the following towns:—Hulancheng, Suihuafu, Heilunfu, Erkeshan, Dadun, Mergen, Aigun, Heiheifu. The railway between Harbin and Heilunfu would pass about 75 villages or settlements, while in the following 200 kilometers settlements of colonists would be tapped, though they are far from being dense. To the north of Mergen the population becomes scarcer. It was estimated about two years ago that the region through which the railway will pass had a population of about 2,000,000 while 3,000,000 acres were under cultivation. The experience of the Chinese Eastern Railway indicates that with the construction of the new line great numbers of people will settle in the vicinity.

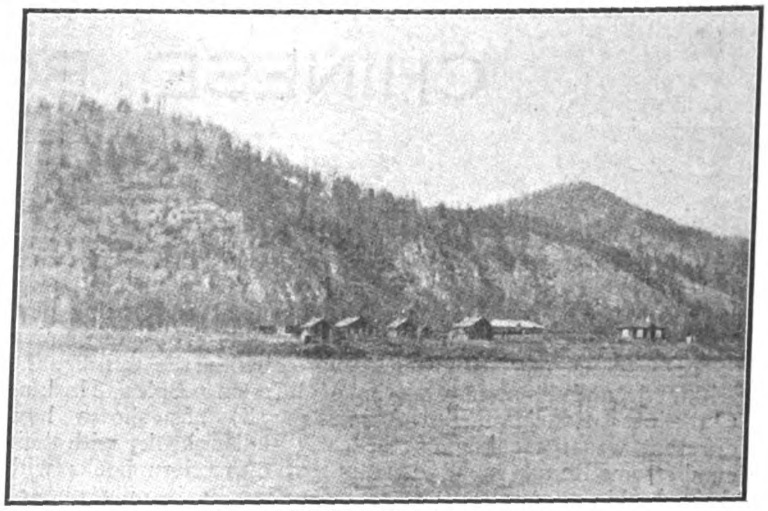
The products of this region have up to the present time been transported to markets in junks and tow-boats down the Hulan and Tunkan Rivers to the Sungari River and Chinese Eastern Railway. To reach the market from Tsitsihar the products go down the Noni River to the Chinese Eastern Railway.



Yamen of Chinese Governor at Tsitsihar



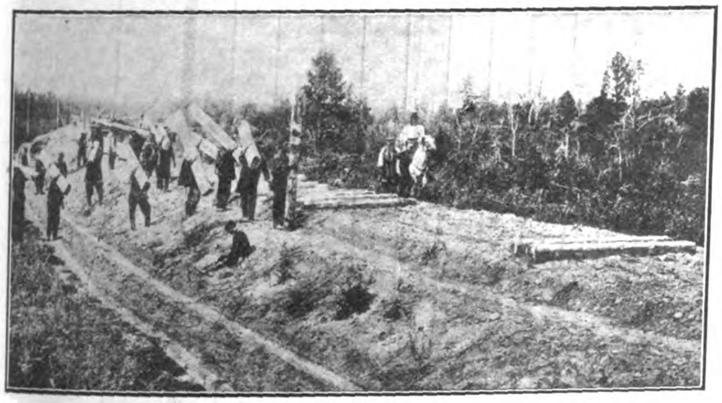
Wide Bend of the Amur near Blagoveshchensk



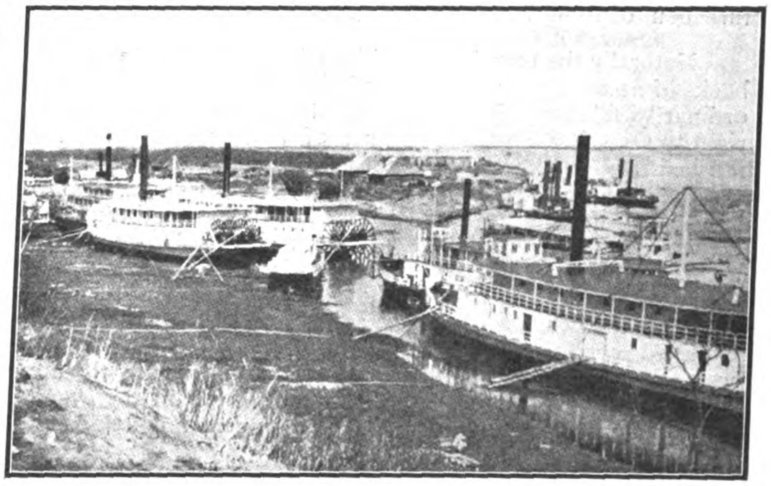
Amur River Settlement

Between Tsitsihar and Mergen the railway will follow the valley of the Noni River, and will tap a country already largely cultivated.

The development so far undertaken in the territory would be sufficient to make the projected railway pay between Harbin and Mergen, but the section between Mergen and the Amur River is not likely to pay until colonists take up the land and develop the natural wealth. It is fair to estimate, however, that within three or four years after the opening of the line there will be sufficient freight to balance expenses. In addition to the products of the country the line will also carry from the south imports such as machinery, cotton goods, tobacco, salt, paper, and other supplies for the colonists. Great need is felt for such imports owing to the present difficult means of transportation causing prices to be excessive.



Railway Construction in the Amur Region



River Steamers Tied up for Winter at Blagoveshchensk

Mongolian Household in Holiday Attire

Mongolian Settlement in North Manchuria

# CHINESE BOOK-KEEPING

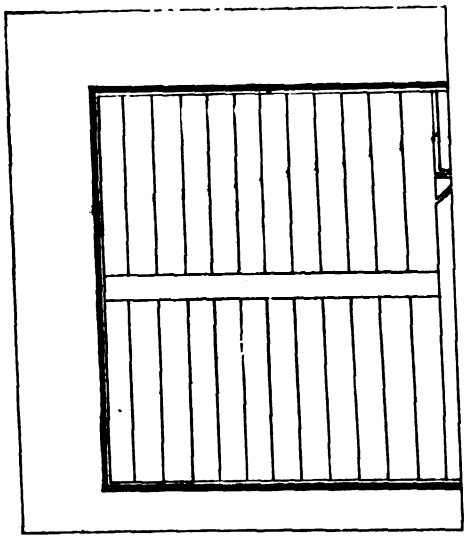
[By Ray Ovid Hall, M.A.]

Bookkeeping, like any other art, reflects the institutions and ideas of a country. Accordingly, the study of the bookkeeping methods of a people yields results of general and sociological interest as well as of technical value to accountancy. The ruling of account books, for instance, varies with the writing, the arithmetic, and the money systems of different peoples. Haskins ("Business Education and Accountancy") has shown how different was the ruling of the early Italian books with their cumbersome Roman numerals from that of modern books with their Arabic numerals. The ruling of books is only one of several details that show similar variations.

Having observed the peculiarities of Chinese dress, street traffic, writing, door knobs, and what not, the foreigner in China comes to look for inverseness and topsyturviness in all things Chinese. He concludes, more or less shrewdly, that the dominant theme in Chinese psychology is, to coin a pun phrase, *wrong-end-tuitiveness*. So in approaching the study of the bookkeeping methods originated by the natives, he naturally expects to find what, from the Western point of view, is a complete turnabout of things. In this, he will not be wholly disappointed.

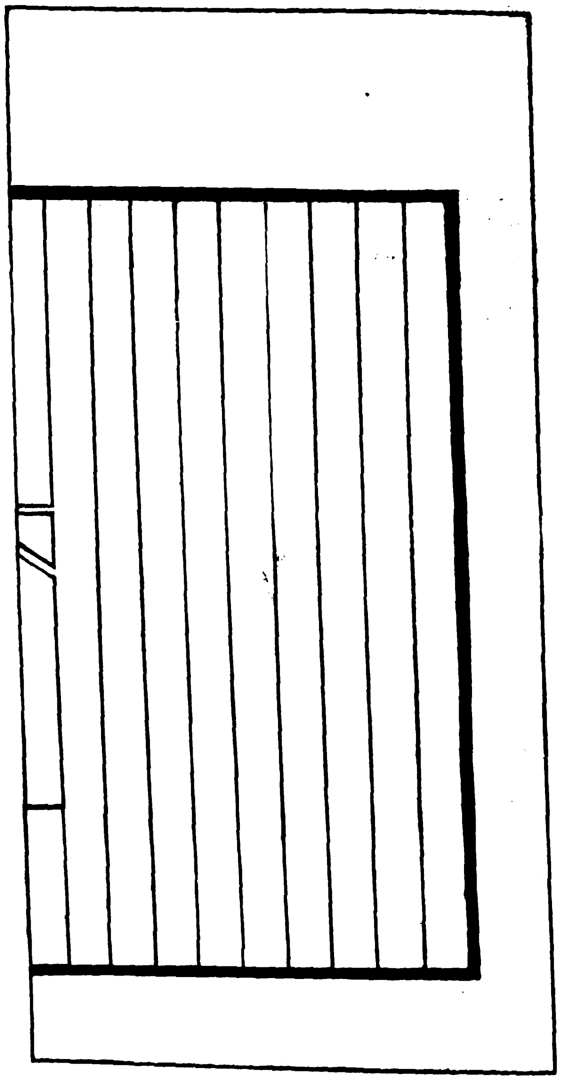
Naturally the turnabout in things is perfect in the Chinese books of account, as in their other books, in that the pages are ordinarily filled up from the back to the front and from the right to the left. Further, the lines of writing are vertical, the finished appearance of an account being described by Dr. Arthur H. Smith ("Village Life in China") as resembling that of "two lines of washing hung out to dry." Again, the name of the account is appended to the upper right hand corner of the account, as if by after thought. But, while in the ruling of the Chinese account the two "sides" are not completely reversed, throwing the debits to the right and the credits to the left, the expected reversal was at least begun. It was arrested just half way around; so that the debits of the account occupy the upper half of the page and the credits the lower half. Another millennium or so of undisturbed development might have seen the turnabout complete.

Below is a quarter sized ledger page illustrating the most common ruling of a Chinese account. The binding of this page is at the left.



Along with the dissimilarity of the Chinese account in form goes a surprising similarity in principle. Entries upon the upper or debit side of the account record things coming into the business or costing value; entries upon the lower or credit side of the account record things leaving the business or producing value. This principle applies to real and nominal accounts, like Expense and Cash, as well as to personal accounts. It is as if the present rather ragged single entry systems in universal use were the remnants of a golden age in Chinese accounting when double entry was the rule. At any rate, to change the present single entry systems to double entry requires no preliminary tearing up of the fundamental things in it. The change requires only the inclusion of a few additional accounts constructed according to a rule already in vogue. In time the Chinese probably would have evolved the double entry system in practically the same way that the Italians did.

To Westerners, who are accustomed to a few books of widely various rulings, the number and uniformity of the books of a Chinese system are surprising. All books, whether of original or of permanent entry, are made similar to the ledger form illustrated above or according to the form below:



This form is used only for auxiliary books,—miscellaneous note books which are not posted and which do not receive postings,—or for certain "books of a single account" (explained later) of which all or nearly all the items are on one "side" of the account. The Furniture Account book is an example of the latter class.

In his "Village Life in China," Dr. Smith mentions that the village butcher kept fourteen different books. The Western trained accountant stands incredulous, he can conceive of no such profusion. Nevertheless it must be said that this village butcher is evidently only a village butcher with no especial love of booklore. Most shops in Peking keep from ten to twenty books. The Bank of China, though generally modernized in its accounting methods, must be the pride of the land; it uses eighty-nine books and registers. A certain pawnshop keeper in

Peking collected his statistics in twenty-two different books. His contempt for the comparatively simple systems of bookkeeping taught his nephew at the Y. M. C. A. School of Commerce and Finance was at first unbounded. The nephew eventually succeeded in introducing a vastly more efficient system of six books. The uncle, in his heart of hearts, doubtless still sighs for the good old days when books were held in higher esteem. After all it is not Chinese but human persistently to fancy that somehow "effect must be proportionate to appliance."

The functions of the legion of books in a Chinese shop is not difficult to explain. One or more of them are what we should term blotters,—books in which to make temporary, hastily scribbled entries during the "rush" of business. Perhaps the rush never comes, but all entries are made in the blotter day book just the same. This superfluous type of book, still extant in American bookkeeping texts of three decades ago, finds warm sanction among the Chinese to-day. The Chinese love beautiful penmanship; and they are inveterate putterers. They are in fact guilty of some pure cases of *blotter ledgers!* A not uncommon method in Peking is to post daily from the books of original entry to a blotter main ledger and to transfer the postings every five days to a permanent main ledger.

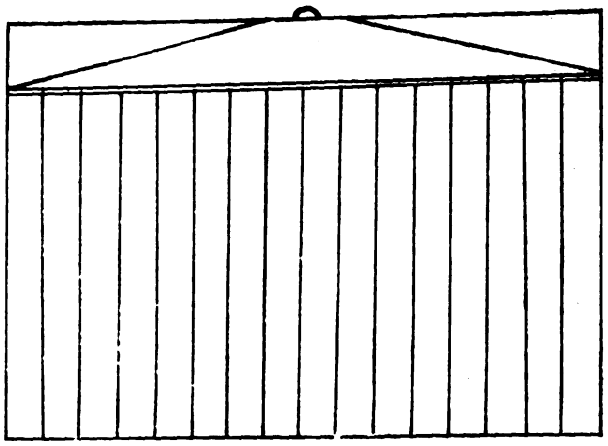
But most of the books of a Chinese system arise from the practice of giving to each account, except personal accounts, a separate book of original entry all its own. Sometimes even a personal account, if of sufficient importance, is likewise favored with a separate book. This system gives a specific meaning to our loosely applied term, "account book." Further, it explains the uniformity of the books of a Chinese system. A certain coal store, for example, keeps accounts with Cash, Purchases, Sales, Expense, Freight, Salaries and Wages, and Proprietary withdrawals; and it keeps a separate book for each account in which items are entered during the day. At the end of each day, the cash expenditures are posted from the Purchases, Expense, Freight, Salaries and Wages, and Withdrawals account books to the lower half of the cash account book. Receipts from cash sales are of course posted in like manner to the upper half of the Cash account book. Such rare receipts or payments upon account as occur in this particular business are entered directly into the Cash account book. Evidently the coal shed manager is letting slip the opportunity of using two more books; perhaps he has not heard of our Accounts Receivable and Accounts payable controlling accounts and should be enlightened.

The items from all the account books mentioned above are posted daily to the "Ti Chang," or ledger. The fact that managers are willing to pay for this laborious transfer of transactions already classified for the sake of having all accounts in one book indicates that they would take kindly to the simpler method by which Westerners usually construct a single book of accounts. To the teacher of foreign accounting this is encouraging.

In most cases the proprietor's account is kept in a separate book. Westerners might term it the "private ledger;" but the Chinese, with characteristic solicitude for the *status quo* call it the "Ten Thousand Year Old Book." I am told that an old law, no longer enforced, required the manager of a business to keep a proprietary account showing the net worth and net gain of the business and to render annual statements to the government. This sounds like the paternalism exercised by the French government in accounting matters. Even now, some of the merchant guilds insist upon proprietary exhibits from their members. (Cf. Jernigan's "China's Business Methods & Policy ") Most systems of books about Peking seem to show the influence of these ordinances. The method current is to make the proprietary account show the loss or gains upon each business account Perhaps no Profit and Loss account has ever been used in China.

The Chinese are prone to discommode themselves, as are we, by keeping a separate book for small payments. In a small shop this petty cash book serves chiefly to add one more volume to the library surrounding the bookkeeper.

The fourteenth book of Dr. Smith's village butcher was possibly a small, ruled blackboard about eighteen inches square hung on a nail back of the counter, in plain view of every one entering the shop. Such a board is common in China. Upon it are chalked short time sales on account to the amount of a few coppers. Classified in Western fashion, it might be termed a petty customers' ledger. Long experience in the particular environment has probably proved the excellence of this device as a sort of silent dun and as an eloquent indicator of the magnitude of the transactions which the business sees fit to record in its paper books. The ruling of this dun ledger, which suggests the facade of the Parthenon is shown below:—



While the system of giving each account a separate book of original entry operates dreadfully to clutter up the bookkeeper's desk, it is not appreciably worse than the tendency of the Japanese to widen their books of original entry to infinity and give each account a special column. This cheap, unintelligent imitation of Western methods, common in Japan, transgresess the axioms of accounting quite as grossly as do the native methods of the Chinese. The Chinese error is preferable at least in that it does not leave acres of unused space in their books, nor conduce so much to the entering of items in the wrong account.

One's first impression of the books of a Chinese system is distinctly unpleasant. In turning their pages, one gets that weary sensation that invariably comes from finding that the leaves of a new book have not been cut: for each page has a double thickness. Since the Chinese bookkeeper makes his entries with a brush, some such precaution is necessary to prevent the ink from soaking through to the other side of the sheet. The books are made of coarse, yellow paper with red lines, and they have paper bindings. They do not give the same sense of durability that our heavy, leather bound volumes do. A shelfful of them might suggest the sociology of a people, but there is nothing about them to suggest the romance of a business. Withal they are unattractive in the extreme.

The cheapness of the paper and bindings of Chinese books of account is, of course, an adjustment to the very low standard of the living of the people. Books in which the average transaction recorded is so small as in China naturally could not be so expensive as those used, for instance, in America. The cheap paper binding is made doubly necessary by the large number of books employed. The retail price of a 7" × 9½" ledger of 100 pages, such as is common in Peking, is 20 coppers, or about 7 cents in American currency.

An astonishing fact concerning Chinese books, to be noticed in the model rulings above, is that there are no columns. The suanpan, or abacus,* which unfortunately is in almost universal use, obviates the need of entering the figures in vertical rows. It is probably this contraption which has prevented the invention of "posting mediums" (books, margins and special columns that save posting). It has also tended to prevent the Western

[*Note: The abacus, by the way, was carefully tested at the Peking School of Commerce and Finance last year and proved to be decidedly inferior in both speed and accuracy for general business purposes. (See "Peking Gazette," June, 1915).]

classification of books into those of original and those of permanent entry. Is it not true that much of our modern aversion to blotters arises from the unceasing search for new posting mediums in the books of original entry? At least it may be said that the abacus has been a most persistent enemy to the improvement of Chinese accounting.

Despite its mal-achievements, the abacus has something original to contribute to the art of accounting. By supressing all columns and demonstrating their uselessness when it is used, it has demonstrated the uselessness of folio columns, or, at least, of folioing. The Chinese do not enter the number of the ledger page in the book of original entry and the number of the page of the book of original entry in the ledger, perhaps confusing the page with the date or amount in the process. With them, the date and nature of a transaction serve as the folio; while a check mark serves to signify that the transaction has been posted. It is remarkable how our practice has thrived so fatly, how not a treatise on accounting or bookkeeping has ever pointed out the waste of time and accuracy which it entails.

What now shall we say of the merits of Chinese bookkeeping? Wherein lie its merits and its demerits? Evidently the merit is that it has stood the test of centuries, stagnant though those centuries were. Crude and cumbersome, like the lathes and drills of this curious people, it is after all workable. However laboriously, it does achieve its purpose of recording and classifying business transactions in a useful way. For a country where labor is cheap, it suffices after a fashion. That it is only a single entry system has not thus far been a serious defect; for, as many accountants will agree, single entry may do very well for small establishments. Considering the hundreds of millenniums that blind, blundering mankind required to discover the polished stone hatchet, the spindle, and the steam engine, the invention of Chinese bookkeeping stands as a tremendous triumph. It is one of the greatest achievements of a tireless, peace loving people.

Clearly there are great glaring defects in Chinese bookkeeping. It is a naive, ill-examined, dead level system with an insufficient variety of devices to be adaptable to the mammoth enterprises of the industrial age. Second, even in the present stage it wastes profligately the stuff that China most needs,—time. Finally, its large number of books of original entry greatly impedes the auditor. "Defective Accountancy," said Haskins, "may become the handmaid of financial corruption." If speaking of China, he should have said *defective Auditing*.

[*Note. The author, who is principal of the Peking School of Commerce and Finance, gathered most of the information in his article from detailed reports made by a large number of the two hundred odd students in his school.*]

## CHINA IMPROVING FISHERIES

China's first fishery school was established at Woosung in 1904 by the Kiang-Chi Fishery Co. and was followed soon by the provinces of Chihli and Mukden, the curriculum in these schools being modeled upon that at Woosung. Fishery training schools for the practical improvement of fishing methods under the Ministry of Agriculture and Commerce were started in 1914 along the coast, in the provinces of Chihli, Chekiang, Fengtien, Fukien and Kwangtung, the province of Chekiang having three schools. The Chinese Ministry of Agriculture and Commerce, to encourage fishery on the high seas, on April 28, 1914, issued regulations to promote fishing on the high seas and a sum of $50,000 was set aside in that year to be made an annual appropriation for the encouragement of the industry. Fishing vessels must be inspected before they can engage in this business. Many fishing boats have since been rewarded for meritorious service, and it is expected that more money will be devoted to this purpose.

The ministry sent commissioners to the various fishing districts to investigate phases of the industry during the last three years, and their reports have been submitted and published. The points emphasized include: Kinds of fishery products, fishing seasons in different places, fishing vessels and the shipbuilding trade, the places where the fishermen come from, the yearly returns of the trade, the total number of ships lost each year, imports and exports of fishery products, duties and levies on this trade, and the best means of developing the industry.

## JAPAN'S BROAD GAUGE

Dr. Soyeda, President of the Railway Board and Vice-President of the Gauge System Investigation Commission, explained in full the proposed broad gauge system bill at a recent meeting of the Investigation Commission held at the Railway Board Office. The gist of his statement was as follows:

The investigations of the proposed broad gauge system were carried out by the Railway Board based on four standards, namely, the ordinary narrow, special narrow, ordinary broad, and special broad gauge, taking into consideration the probable rate of increase in the freight and passenger traffic from 1926 to 1943 inclusive. If the narrow gauge system be adopted for the railway between Tokyo and Shimonoseki, the special narrow gauge is preferable to the ordinary one, but when the special narrow gauge is compared with the special broad gauge, the latter is preferable to the former. The reconstruction expenses for changing to the special broad gauge by 1943 shows an excess of 17,000,000 yen over that of the special narrow gauge, but when the business expenses after the reconstruction are compared, 2,430,000 yen can be saved annually by the adoption of the special broad gauge. On the basis of this fact the Railway Board has decided to adopt the special broad gauge.

The reconstruction expenses of the railway line from Tokyo to Shimonoseki in twelve years are estimated at 297,000,000 yen and those of other lines in twenty-five years at 297,000,000. These estimates are made on the supposition that an annual amount of 20,000,000 yen can be borrowed from the ordinary accounts of the Government, besides the railway profits, and if the loan from the ordinary accounts of the railway profits is increased, the time required for the reconstruction will be reduced accordingly. The estimated reconstruction expenses are the maximum figures, which will be lowered to some extent by the use of old materials and other economies. If the present narrow gauge system is continued and improved, it will cost 280,000,000 yen on the line from Tokyo to Shimonoseki, and 375,000,000 yen on other lines in the mainland, by 1943. The improvement expenses of the present narrow gauge railways, as compared with the reconstruction expenses by the special gauge system, show a decrease of 17,000,000 yen on the Tokyo-Shimonoseki line, and also a decrease of 222,000,000 yen on other lines in the mainland, but the business expenses of the special gauge railways favourably compare with those of the narrow gauge as already mentioned.

In addition to this fact, the broad gauge is, it is needless to say, far preferable to the narrow gauge in view of the national defences and the development of commerce and industries. If the present narrow gauge is to be replaced by the broad gauge, it is advisable to carry out the plan as soon as possible, for by so doing the annual improvement expenses can be dispensed with.

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## JAPAN AND CHINA'S FOREIGN INDEBTEDNESS

On April 6 the Yokohama Specie Bank, the Japanese unit of the Five Powers Banking Group, announced that, under instructions from the Japanese Government, it intended to withhold payment of certain funds belonging to the Chinese Government. These funds represented the surplus of the Salt Administration revenue after making due provision for all the interest and other obligations charged thereon. By the terms of the Reorganisation Loan Agreement, of the surplus salt revenue sufficient has to be retained by the Group Banks collectively, to meet six months' obligations. Any sums not required for this purpose become part of the general revenue of the Chinese Government.

At the end of March in the Group Banks there was $16,800,000, in which any money then in transit is not included. On April 6 the Group Banks were authorized to release $5,800,000, of which $800,000 was refunded as the Chinese Government had been paid $800,000 at Chungking in Szechuan. The Banks, with the exception of the Yokohama Specie Bank, acted upon the authorization. The Japanese Bank explained that its refusal to abide by the terms of the Loan Agreement was due to the probability of the internal troubles in China causing a diminution in the revenues from Salt and Customs, thus endangering the interests of Japanese bond-holders.

As the Group Banks have possession of the surplus funds in a purely fiduciary capacity it would appear that the action of the Japanese Government in ordering a semi-official Japanese Bank to withhold their rendition is illegal. Whether that be so or not, and whether in any event Japan has given proof of good faith either to her associates in the Consortium or to China, it is not our immediate object to inquire. It will be of interest, however, waiving the question of the legality or morality of the action, to ascertain whether it was based on apprehensions possessed of any degree of plausibility. The official explanation was the probable endangerment of the interests of Japanese bond-holders, by a decrease in the revenue obtained by China from Salt and Customs. We will not, as we have indicated, discuss the justice of the action, but we will give a few figures that should convince the most sceptical that the reason alleged to justify it is without a shred of plausibility.

At an exchange of 2/8, and with the existing Boxer Indemnity contribution, the Salt Administration will have to pay during the rest of the year the following amounts;—

| | Shanghai Taels. |
|---|---|
| 9 more instalments of the Reorganisation Loan.. | 7,031,250 |
| 1 more Crisp Loan coupon .. .. .. .. | 937,500 |
| 9 more contributions to the Boxer Indemnity at present rate of Shanghai Taels 928,555 .. | 8,356,995 |
| Chihli and Hupeh Bonds .. .. .. .. | 600,000 |
| Ta Ching Bank Loan 9 months at $60,000 .. | 394,200 |
| | 17,319,945 |

This represents $24,726,000. As the Group Banks held $16,800,000 at the end of March, there was almost sufficient in hand to discharge all obligations for the next nine months. To put it in another way, the collections for three months, during which an internal conflict was proceeding, were only short by some $7,000,000 of the total amount chargeable on the revenue for the full twelve months. When these figures are considered it is obvious that there was no justification for the action of the Japanese Government in vetoing the payment. Even were the internal strife in China to attain much greater dimensions than there seems any reason to apprehend, it is a practical impossibility for the revenue during the next eight months to fall below the amount necessary to meet obligations.

From the fact that Japan vetoed the payment to the Chinese Government, while Great Britain, France, Russia and Germany had no hesitation in permitting it to be made, the natural inference would be that the interests of Japanese bond-holders are immensely greater than those of other nationals. Let us see what degree of authenticity attaches to this inference. Although

Japan is supposed to have supplied one-fifth of the Reorganisation Loan of £25,000,000, in actual fact no bonds at all were issued in Japan. Great Britain and France subscribed £15,000,000; Germany, £5,000,000; Belgium £2,000,000 while £3,000,000 was placed by the Russians in Russia, Germany and Belgium. An investigation of the loans charged upon the salt revenue shows that the only interest that Japan has is her share of the Boxer Indemnity, originally amounting to Yen 55,000,000. Taking the Boxer Indemnity into account, British interests are immensely greater than those of the Japanese. After Great Britain come France, Russia and Germany with interests amounting to £100,000,000, while Japan's total interests amount to the comparatively paltry sum of £5,000,000.

In view of the irrefutable facts adduced above the official defence of Japan's action in retaining the funds of which she is a trustee, is obviously inadequate and unconvincing.

## THE QUEST FOR A CONSTITUTION

One certain outcome of the crisis through which China is now passing, irrespective of which of the protagonists prevails, will be the formulation of a Constitution in which, it is to be hoped, the mistakes of the past will be avoided. There has been no lack of activity on the part of Constitution-makers in China, but their efforts have not stood the test of practice. Even the Manchus, with the prescience that not infrequently attends the "sun-set of life," tried to prop up their tottering fortunes with a Constitution. So desperate were they that the Constitution that they offered practically deprived them of all power and left them only the shadow of sovereignty. In many respects this Constitution was almost as liberal as the Provisional Constitution drawn up at Nanking in 1912. But the offer came too late. On the point that the Manchus had exhausted their mandate the people were almost unanimous, and, consequently, no eleventh hour concession could avert abdication.

The Provisional Constitution of Nanking was in many ways a remarkable document. The powers that it gave the National Assembly were probably greater than those exercised by a legislative body in any country. It should be explained that the Provisional Constitution conferred these powers on a National Council which was to officiate until the convocation of the National Assembly, but in the regulations for the elections for the latter body, promulgated on August 10, 1912, it was explicitly stated that "Prior to the adoption of the Constitution of the Republic the powers and privileges of the National Assembly shall be the powers and privileges of the National Council as defined in the Provisional Constitution." This was also provided for in Article 28 of the Provisional Constitution itself.

A brief explanation of the powers that were thus conferred upon the National Assembly may be desirable. The Assembly was empowered to veto appointments made to the Cabinet by the Provisional President; to impeach the Provisional President or members of the Cabinet; to pass legislation in spite of the veto of the Provisional President. It will be seen that, in the event of a difference of opinion between the President and the Assembly, the former was practically powerless. The right of appointing members of the Cabinet was really held by the National Assembly, as it could constitutionally withhold its concurrence with any proposals made by the President in this connection. By a process of elimination it could obtain a Cabinet composed of men entirely under its domination, and keep it in order by the threat of impeachment. The President was given no power to dissolve the Assembly, and so refer any question in dispute to the people. In short, the Constitution placed Parliament in a position of supremacy, similar to that which Parliament arrogated to itself in Great Britain during the Interregnum, until Cromwell contemptuously swept it and its pretensions out of existence.

It is unnecessary to relate in detail the circumstances which led to the suspension of the National Assembly in November, 1913. From the very outset it was evident that the Kuomingtang party, which dominated the Parliament, was determined to abate no jot of its constitutional powers. Into the merits of the questions in regard to which the President and Parliament came into collision it is not essential to enter; it is sufficient to state that it was abundantly evident that progress was impossible until one side or the other was reduced to impotence. The President prevailed, the Kuomingtang members of the Assembly were unseated and, as less than a quorum remained, the Assembly, in effect, ceased to exist.

Although the President had temporarily triumphed, it was obvious that if the Nanking Constitution were to continue to be operative a repetition of the struggle for supremacy was almost inevitable. Consequently a committee was appointed, to which Professor F. J. Goodnow and Dr. Nagao Ariga acted as advisers, to frame a new Constitution. This instrument made its appearance in May, 1914. By its provisions the relative position of President and Parliament were practically reversed. He was given most of the powers which, by the Nanking Constitution, were accorded to the Parliament. The right of the Assembly to veto appointments made to the Cabinet by the President disappeared, and with it the right to impeach members of the Cabinet and that of passing legislation over the veto of the president. The power of convoking, opening, proroguing or closing sessions of the Assembly was vested in the President.

The most superficial comparison of the Nanking Constitution of 1912 and the Constitution of 1914 shows that the intention of their respective framers was diametrically opposite. The Nanking Constitution sought to curtail the power of the Provisional President and to give almost unlimited power to Parliament. The Constitution of 1914 was designed to curtail the power of the Parliament and to give almost unlimited power to the Provisional President. The verdict that will be given after the dust of disputation has settled, will probably be that both sides failed to accomplish their object because of their inability to recognise that the people desired co-operation between President and Parliament and not conflict.

After her dearly-bought experience of the evil results that attend immoderation, China, it may be hoped, will insist upon securing in her permanent Constitution the judicious balancing of power upon which real progress and security depend. The interests of the country would be just as likely to suffer at the hands of an unrestrained Parliament as at the hands of an unrestrained President. The happy mean is the ideal to be sought, and if this golden fact has impressed itself upon the makers of the permanent Constitution that is shortly to be presented to the representatives of the people, as a result of the trials and tribulations of the last few years, all will yet be well. Even if the framers of the Constitution have not avoided the pitfalls into which their predecessors stumbled, the Citizens' Convention has it in its power to amend the draft, and it is to be hoped that, if necessary, it will exercise these powers with patriotic wisdom.

## THE BANK OF CHINA

The rumours that were set in circulation in regard to the Shanghai branch of the Bank of China some little time ago were so evidently designed to effect a political object that they met with practically no credence in foreign circles. Instead of damaging the Bank, the effect of these rumours being circulated was to inspire the management to submit its books to one of the best known and trustworthy firms of foreign accountants in the Far East. After a careful investigation this firm was able to give the Bank a certificate of perfect financial health.

No inconsiderable progress has been made by China in regard to the adoption of modern banking methods. In the Bank of China and the Bank of Communications she has institutions that come well out of the ordeal of comparison with the great foreign banks operating in China. These two Government concerns showed a firm grasp of financial methods in connection with the issue of the domestic loans which have become a gratifying feature of China's national life. The factor most essential if internal borrowing is to be successful is, of course, confidence on the part of the people in the Government, but scarcely less essential is the organization by means of which

the way of the investor is made smooth. Much of the credit for the success which has attended the issue of domestic loans is undoubtedly due to the managements of the national banks.

The report in regard to the affairs of the Shanghai branch of the Bank of China is of such interest that its republication is entirely warranted. It reads as follows:—

In accordance with instructions received we beg to report that during the past week we have been making an investigation of the affairs of the Bank as shown in a Balance Sheet drawn up on March 4, 1916.

At the commencement we may say that all our requirements as investigators have been promptly and satisfactorily complied with.

Organization. We report that in our opinion your organization is excellent. Full schedules have been supplied, supporting the Balance Sheet items, in a manner entirely satisfactory; and we are confident that no other Bank could have done better. The accuracy of the Schedules is commendable when the rapidity of their preparation is considered. Each Schedule was very carefully investigated by us, and a very full comparison made with the actual books from which they were extracted.

Management.—This scarcely comes within the scope of our duties—but we are convinced the management is sound and careful because the organization of the staff is good, whilst we are satisfied that loans against security have been wisely and carefully made.

Bank Note Issue; Bank Notes of Other Banks; Bank Notes of Branches; Silver in Treasury, in coin and sycee:—

These we investigated on Sunday, 12th instant, a very thorough check being made. We are satisfied that the notes, coins and sycee said to have been in the Treasury on March 4, were in fact actually there.

Government Accounts.—It is very pleasing to report that there is no sign of abuse of privilege, and that instead of the Government being overdrawn (as might, possibly, have been expected) we were glad to find that in fact the Bank had Government Funds in hand to the extent of $608,215.66 made up as under:—

| | Due to Bank. $ | Due by Bank. $ |
|---|---|---|
| Fixed loans— | | |
| Provincial Treasurer of Kiangsu ... ... | 200,000 | |
| Overdraft on current accounts— | | |
| Ministry of Finance. ... ... ... ... ... ... | 685,551 | |
| Interest paid on Government Bond under direction of Minister of Finance ... ... | 160,000 | |
| Temporary advances and sundry debtors— | | |
| Ministry of Finance (Tls. 10) ... ... ... | 13 | |
| Special deposits— | | |
| Provincial revenue, taxes and salt gabelle | | |
| Balance due by Bank of China to the Government. ... ... ... ... ... ... ... ... ... | 608,205 | 1,653,780 |
| | $1,653,780 | $1,653,780 |

Loans and Securities—We have examined these very carefully, and have inspected the securities. We have been able to value certain of the securities ourselves, independently of the Bank, such as cotton (raw, yarn and ginned) piece goods, wheat, silk and rubber shares, and in each case there undoubtedly is a sound and safe margin.

In the case of loans against Government bonds, where being a Government Bank one might expect you to be more liberal than other Banks, we find the following Loans (in dollars) so secured:—

| Loan | Govt. Bonds Face Value. | Market Value. | Margin. | | Per cent. |
|---|---|---|---|---|---|
| 35000 | 60000 | 42000 | 7000 | | 20% |
| 25000 | 40000 | 28000 | 3000 | | 12% |
| 93243 | 141000 | 98700 | 5456 | about | 6% |
| 3147 | 10000 | 7000 | 3853 | over | 100% |
| 2800 | 5425 | 3797 | 997 | about | 35% |

Property, Land and Godowns—These are valued in the balance sheet at $406,881.90, but we have seen a valuation made by Messrs. Atkinson & Dallas in 1911 valuing the properties at Tls. 325,801 at ex. 73=$446,302.74 or a surplus of $39,420.84—and we understand the value of the property has increased since Messrs. Atkinson & Dallas made their valuation, and could be readily sold—we have seen the title deeds with declarations of trust attached, and they are in order.

Investments— $73,754.85—These consist of:—

| | Face Value. | Market Value. | Loss |
|---|---|---|---|
| 8% Military Bonds ... ... ... ... ... ... | 50,000 | 40,000 | 10,000 |
| 6% Internal Loan ... ... ... ... ... ... | 28,175 | 19,722 | 8,453 |
| Chin Hua Bonds ... ... ... ... ... ... | 580 | 580 | — |
| | $78,755 | 60,302 | 18,453 |

and they appear in the statement at their market value which is in order.

Amounts Due by Head Office, Branches and Agencies—As is usual in cases of this sort we have had to assume the accuracy of the figures submitted to us. The balances have, however, been carefully compared with the Shanghai books and agree therewith, and we have no reason whatever for doubting their accuracy.

Cost of Bank Notes $12,049.31—This amount has been allowed to remain as an asset as we understand the cost is being refunded by the Head Office, and in any case it is an expense that quite properly can be written off over a number of years. The original cost of the notes was $26,084.71 (in 1914) and since then over 50 per cent. has been written off.

In conclusion the position of the Bank is as follows:—

| | |
|---|---|
| Total Assets ... ... ... ... | $13,677,732.55 |
| Less Liabilities: ... ... ... ... | 13,642,463.97 |
| Surplus of Assets over Liabilities at Shanghai ... ... | 35,268.58 |

In addition to this surplus you have a secret reserve of at least $39,420.84 between what your godown property cost you and Messrs. Atkinson & Dallas' valuation of 1911. The Head Office balance includes the profits of Shanghai yearly transferred to Peking, that would otherwise appear as Reserves of the Shanghai Office in the balance sheet.

In short we consider the financial position of the Bank in Shanghai to be satisfactory.

**Bank of China, Shanghai Office.**

Statement of Affairs at March 4, 1916.

| Liabilities. | | $ |
|---|---|---|
| Due to the public and to Government department ... ... | | 10,260,439 |
| Bank notes in circulation ... ... ... ... ... ... ... ... | | 3,382,024 |
| Surplus of assets over liabilities at Shanghai ... ... ... | | 35,268 |
| | | $13,677,732 |

| Assets. | | | $ |
|---|---|---|---|
| Due by the public and by Government department ... ... | | | 3,507,068 |
| Amounts due by Head Office, branches and agencies. ... | | | 2,694,970 |
| Cost of Bank notes ... ... ... ... ... ... ... ... ... | | | 12,049 |
| Furniture ... ... ... ... ... ... ... ... ... ... ... | | | 1,250 |
| Property, land and godowns, North Thibet Road, North Szechuen Road and Soochow Creek (at cost) ... ... | | | 406,881 |
| Investments (reduced to market value)... ... ... ... ... | | | 60,302 |
| Reserve against note issue— | | | |
| At Head Office, Peking (in accordance with statutes) ... ... ... ... ... ... | 400,000 | | |
| In Treasury Shanghai ... ... ... | 2,982,024 | 3,382,024 | |
| Cash in Treasury Shanghai ... ... ... ... ... | | 3,084,926 | |
| Deposits and current accounts with other Banks | | 548,259 | 6,995,209 |
| | | | $13,677,732 |

Examined and found correct subject to our report of this date.

LOWE, BINGHAM & MATTHEWS,
*Auditors.*

Shanghai, March 16, 1916.

## CHINESE PLANTS FOR AMERICAN USE

The results of a three years' trip in the Far East by a plant explorer of the United States Department of Agriculture have been summarized in a statement from that department*. Of the many specimens forwarded to this country during the expedition, the specialists regard as most significant the jujube, a fruit new to this country, which may be suitable for use in the Southwest; a wild peach resistant to alkali, cold, and drought, the root system of which offers great possibilities as a grafting host; certain Chinese persimmons larger than any hitherto known in this country; a number of aquatic food roots and vegetables which offer promising possibilities for the utilization of swamp land; some 30 varieties of vegetable and timber bamboos; and a number of Chinese vegetables, bush and climber roses, shrubs, and trees.

This trip just concluded is the third expedition into China to discover new plants suitable for introduction into the United States. The three expeditions together have yielded for planting and testing for commercial adaptability seeds, roots, or cuttings of some 3,000 food and forage plants, flowers, ornamental shrubs and vines, shade and timber trees. The earlier expeditions brought specimens of many cold-resistant and dry-land grains, sorghums, soy beans, alfalfas, and forage plants, and also certain semitropical plants, such as the bamboo, which are now under experimentation to determine their usefulness for the extreme South.

* A full account of the discoveries of Plant-explorer Meyer was published in the Far Eastern Review for July, 1915.

# CHINA REVERTS TO REPUBLICANISM

## Yuan Shih-kai Abandons Absolutism

The immediate effect of the Mandate of Renunciation, by which President Yuan Shih-kai cancelled the monarchy, was, as recorded in our last issue, to bring back to office Mr. Hsu Shih-chang, who resumed duty as Secretary of State. It was hoped that the Southern republicans, as the main object for which they had taken up arms had been achieved, would agree to a speedy cessation of hostilities. No indication that they were prepared to adopt this course was immediately forthcoming.

The Central Government proceeded methodically to make the necessary adjustments in view of the change in the form of government. The Republican Calendar was restored. A special session of the Tsang Cheng Yuan was held on March 25, which was attended by Mr. Hsu Shih-chang as representative of the President, to frame a reply to the Mandate cancelling the monarchy and returning the petitions advocating its restoration to the Yuan. The terms of the reply sent to the President are (*Peking Daily News* translation) as follows:—

On the 22nd inst. this House received a despatch from the President to the effect that "I hereby declare that I still recognize that the memorials and documents transmitted to me through the Acting Li Fa Yuan in connection with the request for enthronement are inconsistent with the present condition of this country. The Bill passed on the 11th day of 12th month of last year on the recognition of monarchy is hereby cancelled, and the State Department is hereby instructed to return to the Li Fa Yuan all the petitions urging enthronement from the provinces and special administrative areas, so that they may be returned to the original petitioners to be destroyed, etc." On the same day we received a despatch calling for an extraordinary session of this House on the 23rd instant; and we also received all the above mentioned petitions, etc.

On the 25th instant a sitting was held in this House, and it was resolved, that all the petitions should be returned on that day. It will be remembered that on the 11th day of the 12th month of last year a Bill was passed by this House to the effect that all laws and mandates which were not in conflict with the monarchical form of State should remain in force, etc., and this Bill was duly promulgated by a special mandate. As now the Bill on the recognition of monarchy has been cancelled, the above Bill should therefore also be cancelled.

A proposal was made that the Tsan Cheng Yuan should ask to be dissolved to show its contrition for having advised the change in the form of government. This was adopted and a message in the following terms (*Peking Gazette* translation) was sent to the President:

Some time ago the Acting Li Fa Yuan, in the name of the principal Representatives of the People, submitted to the President the "designation petitions." Now those petitions are returned to be destroyed. It is clear that the Great President wishes to maintain the Republic and thereby to save the precarious situation. We express our illimitable admiration for such an act. Since this Yuan rashly advised the President to accept the Throne, thus causing complaints to come from many quarters and thereby tarnishing the high virtue of the Great President, this Yuan is no longer capable of representing the real and true will of the people in its official discussions. The Organization law of the Li Fa Yuan, while providing for the maximum length of the extraordinary session gives no minimum limit. It is plain, therefore, that it will not be a violation of the law if the Yuan closes after holding only one or two meetings. It is proposed that this Yuan should request the Government that the discussions of the extraordinary session should be limited to the restitution of institutions made null and void by the adoption of the monarchy. Other matters should be left to the discussion of the organ elected according to law and representing the people, with a view that the expectations of the people may be satisfied and honesty made manifest.

A mandate was issued on March 27 reviving all the Laws that had been suspended when the change in the form of government had been made.

From the tone of the Chinese newspapers in Shanghai and elsewhere which had supported the Yunnan movement from the outset, it became evident that the cancellation of the monarchy was regarded as a sign of weakness. While not unanimous on the point, it was apparent that a large number of the anti-monarchists would be satisfied with nothing less than the resignation of the President and the punishment of those who had taken a prominent part in the monarchical movement. Even more extravagant demands were made in some quarters. It was suggested that the President and his chief supporters should suffer decapitation and confiscation of their estates, while for three generations the Yuan family should be debarred from holding official positions in China. There is no reason to suppose that the section that put forward these demands was representative of any influential body of opinion, but the mere fact that such demands were made showed that the action of the Government in cancelling the monarchy was held to be an admission that it was terror-stricken and unable to resist any pressure that might be exerted. That this opinion was held in more responsible quarters was shown by the action of Mr. Tang Shao-yi, formerly one of the President's closest friends, in sending a telegram to His Excellency couched in decidedly brusque terms, stating that his resignation was imperative.

On the other hand, several of the Military Governors telegraphed to the President assuring him of their support, and announcing that, if those who had taken up arms against the Government did not accept the cancellation of the monarchy as a settlement, they would assist to crush them by military force.

In continuation of the record of the important developments taking place in China it has to be noted that thirty-seven members of the National Assembly of 1913, representing seventeen provinces of China, and the oversea Chinese emigrants, on March 27 sent a telegram to the Foreign Ministers in Peking, couched in the following terms:—

To Their Excellencies the Ministers of the Friendly Nations at Peking:—

Ex-President Yuan Shih-k'ai, by proclaiming himself Emperor, violated his oath of office, and rendered himself guilty of high treason. He can therefore no longer be considered the Chief Executive, but is indeed the common enemy of the people. For this reason, as long as Yuan Shih-k'ai remains in power, the country will be in a state of civil commotion, and the hope of the friendly nations to see peace and order reign in this land will never be realized.

Finding himself in a helpless condition, he has ordered the cancellation of the monarchy. He hoped thereby to deceive both our own people and foreigners, and to thus bring about a compromise until a more favourable opportunity should arise for the gratification of his selfish ambitions.

The crime of high treason, from a legal standpoint, is unpardonable. Moreover, his duplicity in see-sawing between the roles of Emperor and President is child's play. How, then, can we allow him to be so shameless as to revert to his former position? We, the undersigned, voicing the sentiments of the entire nation, have therefore solemnly pledged ourselves to deprive him of his power in order to eradicate the source of all these political upheavals. We cannot sacrifice the future peace and safety of the state to any evanescent compromise which may be suggested. This is also the attitude of the Righteous Armies of Yunnan, Kweichow, and Kwangsi.

We therefore venture to address this communication to your Excellencies, and to ask the favor of your transmitting the same to your respective Governments and peoples, so that they may know that the citizens of the Republic of China are determined to uphold the supremacy of the law and the constitution of the land, and to bring to justice the national betrayer. We will not rest until we have attained our object. We trust the friendly nations will see through the duplicity of Yuan Shih-k'ai and approve the inevitable course to be taken by our citizens.

Respectfully submitted.

On April 1 the Council of State held a meeting in its capacity of acting National Assembly. A despatch from the President relative to the decision of the Assembly to limit its activities to the restoration of republican institutions was read. The *Peking Daily News* summary of the despatch is as follows:—

We have received a despatch from the Acting Li Fa Yuan stating that as the Yuan took a rash step by recommending the

restoration of monarchy, it has lost the confidence of the people, putting the President in a difficult position, and is not now worthy to represent the will of the people. Therefore the discussions of the Yuan should be confined to the problems connected with the cancellation of the monarchy, and the rest of the State affairs should be reserved for the decision of the coming formal Li Fa Yuan, etc. We hereby point out that the right and power for the Acting Li Fa Yuan have already been provided for in the Constitutional Compact. If important questions arise during the time when the formal Li Fa Yuan has not been organized the said Acting House should sit in accordance with the provisions made in Article 67 of the Constitutional Compact, etc.

The Assembly passed bills cancelling the constitutional monarchy and cancelling their own appointment as Principal Representatives of the People.

A Mandate was published on April 3 in relation to the proposal to convert the Citizens' Convention into the National Assembly. We quote the *Peking Daily News* translation:—

Some time ago when we were in a hurry to introduce a Constitutional Government, it was considered necessary that a legislative organ should be organized immediately. We therefore sent a despatch to the Acting Li Fa Yuan consulting its opinion, and a resolution was passed to the effect that the successful candidates of the Final Election of the Citizens' Convention should be considered as successful candidates of the Li Fa Yuan, etc. Later on, on the 27th day of the 3rd month, we received another despatch from the Acting Li Fa Yuan stating that a resolution was passed re-enforcing all laws and mandates promulgated during the time of Min Kuo. Both of the above resolutions were duly promulgated by Mandates.

Among the present laws and mandates of Min Kuo the most important ones are those connected with the Constitutional Compact, such as the Laws on Organization of the Citizens' Conference, and of the Li Fa Yuan, and on the Election of the Members, etc., the enforcement of which will show the spirit and energy of the Min Kuo. When we submitted to the Acting Li Fa Yuan, the bill on the Candidates of the country provided for in the Constitutional Candidates of the Final Election of Li Fa Yuan, we desired to hasten the introduction of a constitutional Government. Such measure, however, was only intended to meet the requirement of the time.

I, the President, have now carefully and respectfully declared that all the laws and mandates of Min Kuo should continue to have their effect; hence it is imperative that the original laws on the Organization and the Election of the Citizens' Convention and Li Fa Yuan should be strictly enforced, and that all the procedures provided for therein should be carefully followed. Thus the principle to enforce constitution and to respect the will of the people will be made known to the country.

It is hereby ordered that the persons some time ago elected in the Final Elections of the Citizens' Convention shall remain as successful candidates of the final election of the Citizens' Convention in accordance with the Laws on the Organization of the Citizens' Convention; and that the Mutual and Single Elections of the said Convention shall be proceeded with as provided for in the law. The procedures for the making of the Constitution Compact shall be carefully followed. As to the election of the members of the Li Fa Yuan, preparations shall be made to proceed to the election without delay in accordance with the provisions made in the Law on the Election of the Li Fa Yuan. As soon as the preparatory works are completed a date shall be fixed for the convocation of the Li Fa Yuan. Thus due respect will be given to the Laws, and the foundation of the nation will be well laid.

While these legislative measures were being taken the position in regard to the relationship between the Central Government and the "Independent" provinces remained obscure. Although no formal truce seems to have been arranged, very little fighting took place. Both sides claimed some minor successes, but it was evident that there was a tacit agreement to abstain from any large scale operations pending a possible compromise. The position in Kwangtung gave rise to some apprehension. The loyalty of the Military Governor, General Lung Chi-kuang, was not doubted, but the fear was entertained that he might not be able to withstand the pressure of the revolutionaries. Owing to the censorship it was difficult to learn definitely what was occurring in Kwangtung, but the large number of people who fled from Canton to Hongkong and Macao, showed that the public feared an outbreak. The troops at Swatow and one or two other places revolted, and announced their intention to cast in their lot with Yunnan, Kweichow, and Kwangsi. In these circumstances General Lung adopted the discreet course of endeavouring to preserve the *status quo* as far as was possible.

No official negotiations were opened between the Central Government and the revolutionaries, but in many quarters efforts were made to find a basis for compromise. The Government, as mentioned earlier, received promises of support from many of the Military Governors, and on April 5 the *Peking Daily News* reported that the Military and Civil Governors, Defence Commissioners, Occupation Commissioners, and Commanders of Army Division of nineteen provinces had addressed the following telegram to the Government:—

We, Kuo-chang, Yao-lin, and others, have forwarded a telegram to Kwangsi signed by the high officials of nineteen provinces and the following is the text of the same:—

### Advice for Kwangsi

"To General Lu, the Shang Chiang Chun, General Chen, the Defence Commissioner, and other gentlemen,—We have now received a clear Mandate cancelling the monarchy. The Central Government has "condemned" its own actions with the hope of restoring peace and tranquillity to the people. It has none other purpose than to effect the salvation of the people and the country. The present situation of our country has become more and more critical every day, and there is every reason to believe that great disaster may overtake us at any moment. Unless all the people of this country should act with one accord, the dismemberment of the nation cannot be averted. If the internal dissension and quarrel should continue outsiders will no doubt interfere; and if the nation should perish the blame will be on us. When we think of the situation we cannot help to shed our tears and break our hearts. You gentlemen, who have been actuated by patriotic motives to resort to extraordinary actions, have now obtained your objects because there will be no change in the form of Government, and the Central Government has employed again the services of men of experience and talents. It is therefore imperative that you should at once lay down your arms. Since the declaration of independence in your province we have not been able to learn the real situation there owing to the interference of communications of your Province with us. However it is not hard for us to guess what has taken place in your province. You may have maintained perfect order and peace, and you may have made excellent preparations to meet every emergency; but your merchants and traders will never be able to get rid of the anxiety of the misery of the coming war and devastation. They will always be in fear nor can they enjoy their food and sleep on account of the coming calamity. You must therefore think of the critical situation and the hard condition of the people, and put forth your efforts to work out their salvation. This is high time for you to cancel or withdraw the declaration independence, and to work together with us for the peace and order of the country. Thus the mind of the people will be settled, and the people will praise your wise decision, which will have great consequence upon this country. Although it is the power of the Central Government to administer the affairs of the State, you may hereafter give your suggestions regarding reforms which should be introduced in all branches of administration, and we, Kuo-chang and others, are also willing to consult with you and to hear your advices and counsels. We hope that we may have a strong and powerful Government. It is our duty to devise means to secure peace and tranquillity for the nation, lest outsiders should avail themselves of the opportunity to destroy our national existence. We have now expressed freely our opinions as we are in a common danger. We have also telegraphed to Yunnan and Kweichow serving them our faithful advice, and we hope that you will also give them advice, so that they may lay down their arms and be reconciled to us.

### Advice for Yunnan and Kweichow

After sending a telegram to Kwangsi, we have also prepared the following joint telegram for Yunnan and Kweichow:—

"To ex-Chiang Chun, General Liu, ex-Defence Commissioner, Generals Tsai and others. When you gentlemen started the revolution we, Kuo-chang and others, sent you a telegram expressing our opinions in most earnest terms, and stating that should there be differences of political opinions compromise should be employed because as soon as a civil war should break out the people would be afflicted with all kinds of misery. However our faithful advice has not been regarded, therefore the districts in Southern Szechuan and Western Hunan have met with unusual calamity from the military operations. We are not going to discuss which side is in the right and which the wrong, but we will point out that before anything has been gained the poor innocent people in the south-west have already suffered great misery for several months. Now the Central Government has cancelled the monarchy which was about to be introduced, and consequently your original object has been realized. If you should continue to resist the Government it will prove that your declaration of patriotism and the love of the people is false, and that you have been actuated by a selfish motive for power and wealth. The situation is most critical and if you do not change your mind but continue to fight the Central Government the people will blame you should any untoward events happen. We, Kuo-chang and others, who are responsible for the protection of the nation, will do our best to maintain the union of the country. As old friends we have tendered our faithful advice, and we hope that you will lay down your arms in an early date so that the country will enjoy peace and order again. We hope you will not try to oblige others but will make your own decision regarding the matter. Should there be any difficulty you may let us know, and perhaps we may assist you to settle it.

A report was circulated on April 5 to the effect that Kuangsi had revoked its declaration of independence. This was refuted by a telegram signed by Lu Yun-ting and Liang Chi-chao which read as follows:—

Yunnan, Kueichow and Kuangsi are united by working in the common cause to uphold the Republic of China. The report which has reached here stating that Kuangsi has formally cancelled its independence is not true. Kuangsi will never conclude peace with Yuan's government separately, nor will she trust the Peking government and cancel independence without the approval of Yunnan and Kueichow Though the province has received many telegrams from Peking requesting the appointment of representatives to attend the peace conference at Shanghai or Peking, so far only one reply has been given, i.e., Kuangsi declares that until Yuan Shih-k'ai resigns there is no chance of peace. This is the Kuangsi republicans' real attitude. We have never sent telegrams to Peking cancelling the Kuangsi independence.

The Kwangsi rumour was counter-balanced by reports that various provinces either had declared independence or were on the point of doing so, and that the anti-Government forces had regained possession of Suifu, Nachi and Luchow. From the confusing cloud of rumour one certain fact emerged on April 7—the secession of Kwangtung from the Central Government. In the circumstances no great surprise was felt that General Lung Chi-kwang had been unable to maintain the loyalty of the province. As already recorded local declarations of independence had been made in several parts of the province, and the forces at General Lung's disposal were insufficient to maintain his authority. Moreover rumours that a large number of Northern troops were to arrive by sea filled the people with apprehension, in view of the many reports that northern troops had committed grave excesses in the other localities to which they had been sent. As far as can be gathered from the somewhat conflicting and fragmentary information that has been made available the declaration of independence was not attended by any fighting as far as Canton was concerned. The exodus to Hongkong and Macao continued, however, as it was generally feared that the incidents which had attended former changes of government in Kwangtung would be repeated. As in Szechuan bands of robbers began to turn the prevalent unrest to account, and there was a justifiable apprehension that the potentialities of Canton to the looter might prove irresistible. One official of note, Mr. Tsai Nai-huang, Opium Commissioner, who a short time before had been appointed Director of Defensive Measures in Kwangtung, was executed as a punishment for recommending that Northern troops should be sent to overawe the province. General Lung Chi-kwang retained his post of Military Governor, and the Civil Governor also remained in office, but the direction of affairs seems to have been assumed by a kind of committee comprised of members of the two sections of the anti-Government party. Apparently there were divergencies of opinion in regard to the precise object for which independence had been declared, and reports reached Peking that these differences led to open conflict as a result of which several of the committee were killed.

What effect the secession of Kwangtung had on the Government's plans is not quite clear. A number of troops in the North were under orders to proceed to Kwangtung, but a difficulty arose owing to the reluctance of the China Merchants Company to permit their ships to be used for this purpose. However, some of the troops had actually started for an unknown destination when a fresh complication arose through Chekiang declaring independence. General Chu Jui, the Military Governor of Chekiang, had maintained perfect order in the province notwithstanding the fact that former adherents of the notorious Chen Chi-mei were doing their best to stir up trouble. Fear of the arrival of Northern troops seems to have led to the final overthrow of General Chu Jui and severance of connection with the Central Government on April 12. Apparently this action on the part of Chekiang was not taken in accordance with any understanding with the other provinces that had already declared independence. A Presidential Mandate on the situation in Chekiang, which was issued on April 14, was, according to the *Peking Daily News* translation, couched in the following terms:—

To-day we have received a telegram from Chu Yin-kuang, Governor of Chekiang, to the following effect: "On the 12th inst. at 4 a.m. a number of troops and people suddenly rushed into the office of the Chiang Chun. In the time of disorder the Chiang Chun disappeared and his whereabouts have not yet been ascertained. Immediately I secretly sent police to give protection to my office, and when the day broke military officials and members of gentry, who were anxious for the maintenance of peace and order of the City, compelled me to assume the title of Tutuh. I firmly refused, but after a long consultation at 4 p.m. the chief officials of various Government organs together with the representatives of gentry and merchants sent in again their joint request to me. Finally they requested me to retain the title of Governor and at the same time act concurrently as Commander-in-Chief of the Chekiang Army so that the peace and order of the locality might be maintained. As they did not allow me to refuse any more, I consented this morning to their request with the hope of controlling the soldiers and the people and maintaining peace and order. The mind of the people has now been settled and normal condition has been obtained, etc."

The said Governor being a man of experience and ability has been highly respected by the troops and the people, and his services to the Central Government are indeed very valuable as he has saved the situation of Chekiang. He is hereby given the brevet rank of Chiang Chun, and is appointed to act as Director of the Military Affairs of Chekiang. At this critical time the said Governor has exerted his utmost to save the general situation by his energy and enthusiasm. It is hoped that he will be able to maintain the situation till the end, as he has already won for himself a great reputation and influence, and to assist in settling the situation of the country. He is hereby ordered to instruct the troops and the people, showing them the general situation of the world of to-day and urging them to love their country, so that they may understand that their duty is to obey the will of the superiors. Thus they will be able to secure peace and order for various localities. By the promotion of the interest of their native lands, they will at the same time serve the interest of the whole country. I, the President, have great hopes of them.

Early in the month a truce for a few days was arranged between General Chen Yi, Military Governor of Szechuan, and General Tsao Ao, the leader of the Yunnanese troops. This was afterwards extended to a month, and in the meantime endeavours were made to find some basis for a compromise. One section of the anti-Government was averse to accepting any terms that did not include the retirement from office of President Yuan Shih-kai, while another was prepared to agree to the President remaining the titular head of the State with greatly restricted powers. It was generally understood that the President was willing to make great concessions to meet the views of the Southerners, including the formation of a responsible Cabinet that would include several of their leaders. The negotiations, unfortunately, made very slow progress in consequence of the absence of a common understanding among the leaders in the independent provinces.

In spite of the disturbed state of the country, revenue, particularly from the taxes on salt, continued to flow into the Treasury satisfactorily. A sum of over $5,000,000, representing the surplus revenue from salt taxation after making provision for loan charges, was placed at the disposal of the Central Government, but the Yokohama Specie Bank, acting under instructions from the Japanese Government, refused to hand over the portion of this amount which had been entrusted to its care. This incident is dealt with in our editorial columns. As a result of the representations made by the Japanese Government it is understood that the British, French and Russian banks were instructed not to pay further sums available from surplus salt revenue until sanction had been obtained from their respective Governments.

The unofficial report that the formation of a responsible Cabinet had been decided upon was confirmed on April 21 when a mandate in the following terms (*Peking Gazette* translation) was promulgated:—

It is a recognised principle that centralisation should be the policy of the administration as it establishes direct responsibility. In view of the necessity of promptly attending to the multitudinous affairs of the State, I the Great President some time ago assumed full control of the powers of administration and appointed a Secretary of State in order to assist me in the work of government. During two years I have been labouring with my utmost ability but the success achieved has been insignificant. Examining the root of this failure, I find that it has been due to the absence of a Cabinet and the consequent lack of direct responsibility. The fact that I have merely assumed the appearance of an unlimited control of all powers of the State has been the cause of dissatisfaction on the part of the people. In these circumstances I have decided to effect drastic changes with a view to a thorough and energetic reform. In accordance with Article 21 of the Constitutional Compact, the mandate for the organisation of a responsible government is hereby promulgated; and the Secretary of State is hereby authorised to take full control of the affairs of the State and to organise a

**government with the Ministers of the Metropolitan Ministries as members thereof who are to be mutually responsible to and for one another. This is intended in the sense of a step towards the formation of a responsible government and the beginning of administrative reform. I hope that the members of the government to be organised hereunder will work unitedly and faithfully in order to remedy the difficulties of the day. In this I have great hopes.**

Simultaneously mandates were promulgated, one on the organisation of the Government, the other placing the official system under the direct control of the Government, as follows:—

#### Mandate on the Organisation of the Government

Art. 1. The Government shall consist of Ministers of State.

Art. 2. The Secretary of State and all the Ministers of the Ministries shall be called Ministers of State.

Art. 3. The Ministers of State shall assist the Great President and shall bear responsibility;

The Secretary of State shall be invested with power by the Great President to take full control of the affairs of the State;

The Secretary of State shall counter-sign all laws and mandates issued and other documents connected with the affairs of the State.

Art. 4. All affairs of the State shall be decided and enforced at meetings of the Ministers of State at which the Secretary of State shall be the Chairman.

Art. 5. The Secretary of State may issue governmental orders within the limits of his power and authority or when specially invested with power to do so.

Art. 6. The State Department [Cheng Shih T'ang] shall be the central organ of the affairs of the State and under the control of the Secretary of State. Officials of the State Department shall be fixed by separate systems.

Art. 7. This mandate shall come into force on the day of promulgation.

#### Official System Under the Direct Control of the Government

Art. 1. The following bureaux and department shall be under the direct control of the State Department. Their organisation shall follow the provisions of their respective official systems:—

The Bureau of Law Compilation;
" Important Affairs;
" Civil Appointment;
" Statistics;
" Printing and Engraving;
The Department of General Affairs.

Art. 2. To each Bureau and Department shall be appointed a Chief who shall, under the direction of the Secretary of State, control the affairs of his Bureau or Department and supervise the officials thereof.

Art. 3. The State Department shall have eight Councillors of State, who shall, under the direction of the Secretary of State, consider and discuss all laws and mandates.

Art. 4. This official system shall come into force on the day of promulgation.

The attitude of General Feng Kuo-chang, the Military Governor of Kiangsu, had been from the outset a matter of doubt. While it was known that he was not inclined to join in any military anti-Government operations, and had, indeed, in effect aligned himself on the Government side, there were indications that he considered that a certain detachment would not be indiscreet in the circumstances. Consequently no great surprise was felt when a Reuter telegram from Shanghai dated April 21 reported that General Feng had announced the neutrality of Kiangsu on April 17. Some days later it was denied that General Feng had taken any steps in the direction reported.

On April 22 it was announced that General Tuan Chi-jui, formerly Minister of War, had consented to form a responsible Cabinet. Later on the following cabinet was announced:

| | |
|---|---|
| Premier .. .. .. .. .. | Gen. Tuan Chi-jui. |
| Minister of War .. .. .. .. | Gen. Tuan Chi-jui. |
| Minister of Foreign Affairs .. .. | Lu Chen-hsiang |
| Minister of Interior .. .. .. | Wang Yi-tang. |
| Minister of Finance .. .. .. | Sun Pao-chi. |
| Minister of Navy .. .. .. | Liu Kuang-hsiung. |
| Minister of Justice .. .. .. | Chang Chung-hsiang. |
| Minister of Education .. .. .. | Chang Kuo-kang. |
| Minister of Agriculture and Commerce | Chin Pang-ping. |
| Minister of Communications .. .. | Tsao Ju-lin. |

When this report closed on April 21 little progress had been made in the direction of the arrangement of a compromise.

General Tuan Chi-jui, Premier and Minister of War

Much doubt continued to exist in regard to the attitude of the Independent leaders on the question of the President remaining in office. Reuter's Correspondent at Chengtu in a message dated April 15 stated that he learnt on good authority that General Tsai Ao had expressed to General Chen Yi his willingness to agree that the President should retain office on condition that a responsible Cabinet was appointed and control of the Army given to the Cabinet. On the other hand the *Peking Gazette* reported on April 19 that General Chen Yi had sent a telegram to Vice-President Li Yuan-hung, Mr. Hsu Shih-chang and General Tuan Chi-jui in the following terms:—

"I beg humbly to report that I have delegated Liu Yi-ching and Lei P'ao to proceed to Yungning for the purpose of coming to a peaceful settlement on the basis of maintaining the present government. Reports have been received from my delegates, stating that in reply to our counter-demands, Tsai Ao states that Yunnan and Kueichow have telegraphed that they are not satisfied with article 1 providing for the continuance of the Great President in office. As to Kuangsi and Kuangtung, no reply has been received by Tsai Ao from these provinces owing to the interruption of the telegraphic service. Since the views of the opposing parties are so divergent, the prospect of a peaceful settlement is very remote. One shudders at the thought of our future. Chen Yi, being a man of little reputation, his words certainly carry no weight. It is therefore impossible for him to shoulder the great responsibility alone. Careful consideration has led him to the conclusion that the only solution is to get Kiangsu, Chekiang, Kiangsi, Hupeh, Hunan, and Shantung to take joint action for the purpose of actually and earnestly discussing with Yunnan, Kueichow and other provinces the question of a decision to settle the future. As the matter concerns the general situation as a whole, I beg that the Central Government should give this suggestion its support and appoint a central locality and at the same time issue telegraphic instructions to the Chiang Chuns and Governors of the provinces to send delegates to the conference. I further beg that general instructions be given in order that the question may be speedily settled. The situation is serious and every moment is precious. I respectfully beg that a decision be promptly made."

The same paper also reported that General Lu Yung-ting had sent a telegram, similarly addressed, in the name of himself;

Tang Chi-yao, Tutuh of Yunnan; General Tsai Ao; General Lung Chi-kuang, Tutuh of Kwangtung; Liu Hsien-shih, Tutuh of Kweichow, and Chang Min-chi, ex-Civil Governor of Kwangtung. This read as follows:—

"I have to acknowledge the receipt of three telegraphic communications which have reached me, contents of which I have persued with care and respect. Deeply struck by the sight of the dangers besetting the country and earnestly desirous of peace, you have expressed your views so forcibly that the words have stabbed my heart and have even reached my bones. Yun-ting may have little virtue but be assured that he cannot be insensitive to your appeal. I have delayed replying to your telegrams, because, the matter being of grave importance, I have had to consult and secure the views of Yunnan and Kueichow, who preceded me in the Righteous Movement, before a definite reply could be despatched to you. I am now in receipt of telegrams from the Tutuh of Yunnan and the Tutuh of Kueichow as well as from Tsai Sung-po [General Tsai Ao.] Substantially these telegrams state that Hsiang-cheng [the Chief Executive who is referred to by the name of his native district in Honan] has violated the provisions of the Provisional Constitution and thus he has invited war into our midst. As he has utterly disregarded his moral responsibility and therefore forfeited his dignity and honour besides abusing the trust of the country, the simple cancellation of the Imperial title is inadequate to satisfy in a perfect sense the expectation of the people and of foreigners so long as he clings to the desire to remain in his office of President. To persist in this desire can only increase the dangers of the country. However much we may wish to arrive at a compromise on the subject, we find that it is impossible for "this vital step" to be avoided. Yung-ting and others therefore humbly implore you to submit to Hsiang-cheng our request for his immediate retirement from the Presidential chair in accordance with the provisions of the Provisional Constitution so that Vice-President Li Yuan-hung may assume the authority of the State, issue orders for the cessation of hostilities, speedily convene Parliament and reform the internal administration. Our salvation from the destruction that is otherwise inevitable lies within this brief moment; and as Hsiang-cheng has avowed that he has no wish to convert the country into his private property, he surely will no longer hesitate to sacrifice the empty title of President for the sake of saving the people from the dangers of fire and water. A word from you. Gentlemen, will suffice to uphold the crumbling Heavens and in fear and trembling I await your orders."

At the moment of writing it is impossible to say whether this telegram is to be taken as a genuine expression of the views of the Independent leaders.

Quite a flurry was caused in the ranks of the Independents by the announcement early in April that a loan agreement had been signed in America by the Chinese Minister at Washington, Dr. Wellington Koo, and the banking firm of Lee, Higginson & Co., of Boston, New York and Chicago, the proceeds to go to the Central Government for the suppression of the so-called rebels. Lack of information caused many misleading statements to be published, among them being allegations that the loan was contracted upon most ruinous rates for the Government. As a matter of fact the loan was granted on terms of a surprisingly liberal character considering conditions in the outer world as well as in China, and that money was available to China at 6% with an issue price to the public of 97% secured on Treasury Notes, is the highest testimony to the excellent credit of the country—testimony which the Independents as well as the Government should be pleased to see tendered at this time. The loan was to have been an advance of $5,000,000 United States currency in connexion with an Industrial Loan which had been under discussion, but the full amount was not issued. A sum of $1,000,000 gold was transferred by the Bankers after the Mandate cancelling the Monarchy had been published, but as Kwangtung declared independence several days later and it was thus seen that the trouble in the country had not been settled by the cancellation the Bankers withheld any further advance.

The Independents in Shanghai, however, did what they could to emphasise their objections to the loan, and a telegram was sent to the American Minister in Peking, as well as to the State Department, Washington, on their behalf by Mr. Tang Shao-yi, one-time Premier, declaring that they would not recognise the agreement as valid. The protest came after the Bankers themselves had decided not to make the full advance, so virtually the warning was unnecessary.

The Central Government found finances becoming increasingly and tighter as April drew to a close, and the most serious problem confronting them was the one of money. Further advances from the salt revenue could not be looked for, provincial contributions were scarcely to be expected, and other avenues to capital seemed to be closed to them, placing the Exchequer in dire straits.

## JAPANESE LOAN FOR MANCHURIA

To provide funds for the construction of the projected railways (53½ miles) between Ssuping-kia, a station between Mukden and Changchun, on the South Manchuria Railway, and Chengchiatun, in Eastern Inner Mongolia—the agreement for which was recently signed with the Yokohama Specie Bank—a loan of Yen 5,000,000 was floated in Japan between April 7 and 10. The Yokohama Specie Bank announced the particulars regarding the loan, which bears interest at 5 per cent. per annum and was issued at 86.50 per cent. The term of the loan is 30 years, the bonds to be redeemed by drawings after standing unredeemed for ten years. The railway, and the receipts from the railway, constitute the security for the loan. Japanese accountants and engineers will be employed, and all receipts from the railway when constructed will be lodged with the Yokohama Specie Bank.

## SESAMUM GROWING IN INDIA

According to a forecast based upon reports received from provinces which contain on an average 78 per cent of the entire area under sesamum in British India, the total area so far reported for the present season is 3,167,000 acres as against 3,509,000 acres (revised figures) at this time last year, or a decrease of 10 per cent.

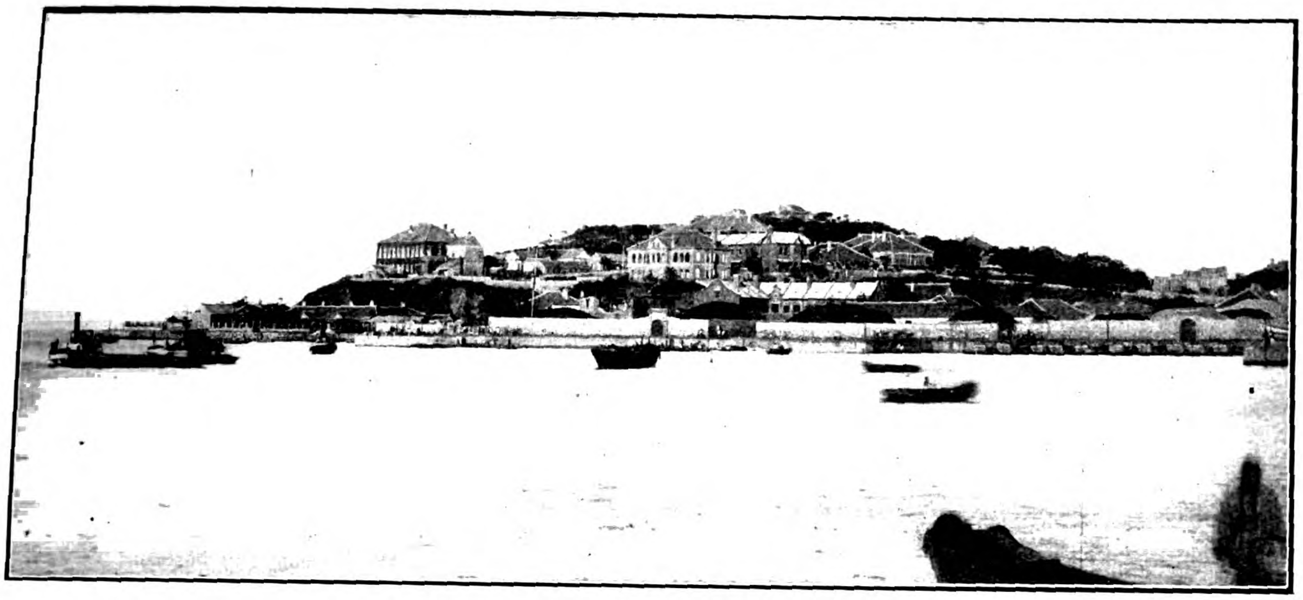
The crop was seriously damaged in early growth by heavy rain and floods in the eastern parts of the United Provinces and in parts of North Bihar, and by deficient rain in the western parts of the United Provinces, in the northern parts of the Bombay Presidency, and on unirrigated lands in the Punjab. The present condition of the crop is reported to be generally from fair to good.

## MINING SUPPLIES IN CHOSEN

The former provision of the Chosen customs tariff allowing the free admission in reasonable quantities of machinery, apparatus, explosives, and chemicals imported by mining companies for use in gold, silver, and copper mining has been extended by an order including the free admission of all these articles, as well as basic crude ores to be used as solvents, when imported by refiners.

## TURN TO CHINESE INDIGO

The price of artificial indigo in Hongkong has so far advanced, and that of the native Chinese indigo has so far declined, that the prices are practically the same at present, the result being that the Chinese turn to the use of the native dye because of its fast quality and particularly rich hue. English dye exporters are not making quotations for this market. Previous to the war, the trade was largely among German firms and with German dyes, but placed with the trade through British traveling men.



CHEFOO CITY—SHOWING PRESENT OPEN ROADSTEAD

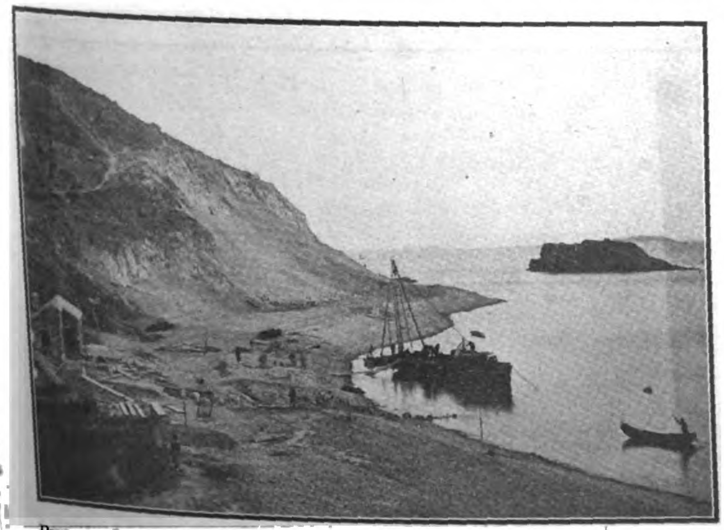
# IMPROVING CHEFOO HARBOUR

## Construction of a Breakwater and Mole.

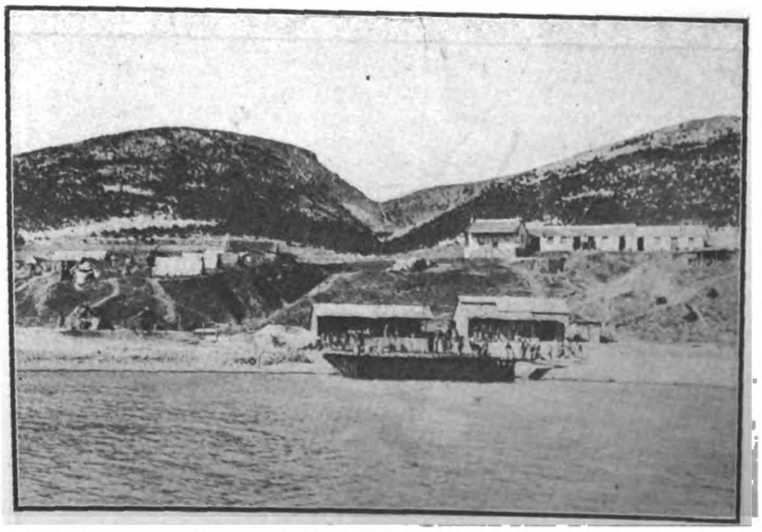
One of the most important engineering works which the Chinese Government is at present proceeding with is the improvement of the Chefoo Harbour. Lying as Chefoo does on the south coast of the Gulf of Chihli, and being exposed to the full force of the Northeastern storms, the harbour is anything but safe, and far from convenient, even in normal times. The anchorage being exposed to the prevailing winds the movement of cargo is always attended with difficulty, due to the fact that vessels must anchor in the open roadstead, without any direct connection with the shore and without any accommodation for the transportation of cargo to and from the interior. The loading, discharging and transportation of cargo between ship and shore can only be effected by cargo boats, with an average capacity of 15 tons, worked by coolies in fair weather. When gales prevail the movement of cargo is rendered impossible, causing considerable loss to shipping and merchants. To remove these disabilities and provide means for the proper handling of products from the interior, such as silks, fruits, farm produce, etc., a scheme for harbour improvement has been adopted and is now well under way.

The importance of Chefoo has developed gradually since its opening as a treaty port in 1862. It was then a mere fishing village, but expansion of trade has caused it to become one of the chief ports of call for steamers plying between Tientsin and Shanghai. It also became the centre for the embarkation of Shantung emigrant coolies for Manchuria and Siberia, where they go to seek employment. The average number per year who thus set out in the spring and return in the autumn is 100,000, though large numbers remain in various parts of the country as permanent settlers.

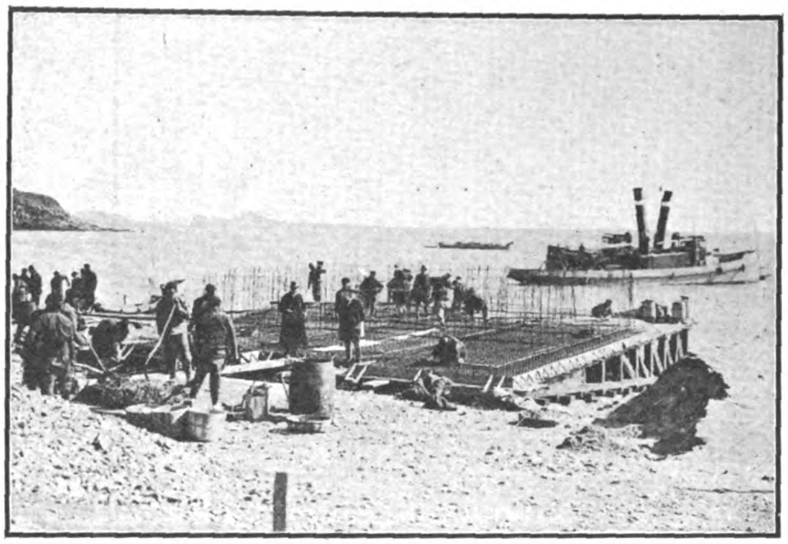
During recent years Chefoo has suffered greatly by the competition of Tsingtao, which is connected with the capital of the province and with Tientsin by rail. Agitations have long been afoot for railway connection between the interior of the province and Chefoo, but chiefly owing to lack of capital no plan has materialized. Trade consequently failed to expand



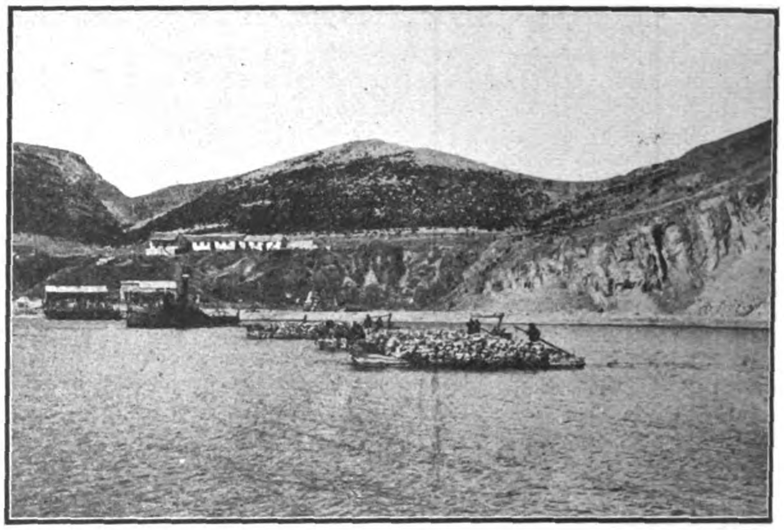
PILEDRIVER PREPARING FOUNDATION FOR SLIP FOR THE REINFORCED CONCRETE CAISSON—POWDER MAGAZINE ON ISLAND AT RIGHT



SLIP ON WHICH REINFORCED CONCRETE CAISSON IS BEING BUILT—COOLIE QUARTERS AND WAREHOUSES SHOWN IN BACKGROUND



CONSTRUCTION OF REINFORCED CONCRETE CAISSON TO FORM HEAD OF BREAKWATER



STONE QUARRIES ON THE BLUFF—STONEBOATS AND TUG PLACING STONE IN POSITION

along lines natural to it but despite this it totalled in 1912 Taels 34,400,583, consisting of Taels 21,536,852 in imports and Taels 12,863,731 in exports.

As the only essentially Chinese port worth developing on the north coast, and as the only one capable of competing with the port of Tsingtao, which was built up by the Germans and is now held by Japan, Chefoo has much to commend it to the consideration of the Government of China, and the regrettable feature is that the responsible authorities have been so long in recognizing the necessity of providing the facilities that should exist for shipping in an up-to-date harbour. Tsingtao, which is 200 miles south of Chefoo, has shown steady and remarkable progress both in shipping and trade—progress which must be attributed principally to the excellent modern accommodation offered. Tsingtao has its breakwaters, wharves and railway, and its prosperity proves the incalculable influence of the three essentials. The pity of it is that the Chinese have been so slow to recognize that their own port of Chefoo has suffered tremendously as a result of the rise of Tsingtao. Ships preferring a safe harbour—with facilities for handling cargo—to the open unprotected roadstead of Chefoo, with its primitive methods of lighterage, went more and more to Tsingtao, and as a result the products of the interior were attracted in increasing volume to this centre to the consequent loss of Chefoo.

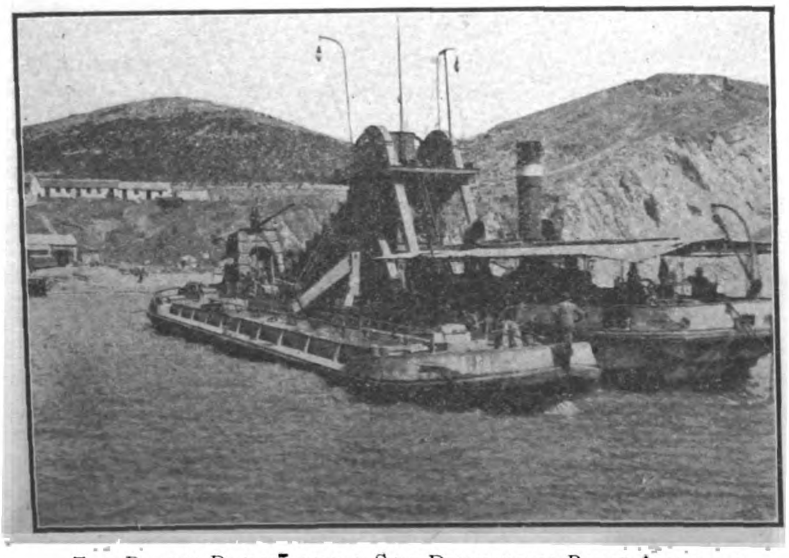
Whether the belated efforts now being made will enable Chefoo to recover its trade or not remains to be seen, but the natural vitality of the vicinity will, it is hoped, justify the expectations of those who have so long agitated for improvements, and whose wishes are now beginning to materialize.

In 1910 the Works Department of the Maritime Customs prepared a scheme for harbour improvement. This was one of several projects, but it provided the idea which has been embodied in the present plans, which were put into execution in 1913 under the aegis of the Chefoo Harbour Improvement Commission. This body was formally created to supervise the improvement work and consists of the Superintendent of Customs as Chairman, a representative of the Consular Body (the Senior Consul being nominated), the Commissioner of Customs (ex-officio treasurer), and the Chairman for the time being of the Foreign and Chinese Chambers of Commerce.

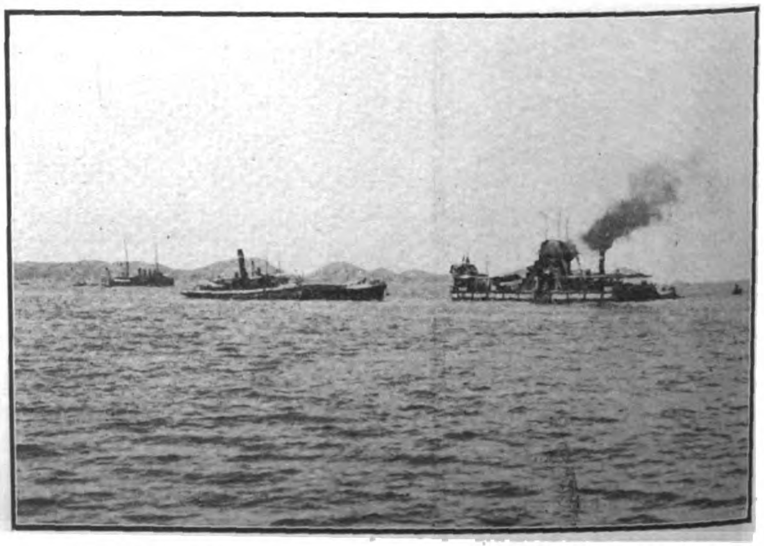
To cover the cost of construction a tariff of surtaxes was put into operation from July, 1913, under instructions from Peking.

Through the courtesy of the Government of the Netherlands, their Engineer, Mr. O. C. A. van Lidth de Jeude, C.E., was permitted to go to Chefoo to advise the Commission, on their request, as to the best means of providing the port with the protection it requires. Accompanied by Mr. B. van Exeter, C.E., he arrived in October, 1913, studied thoroughly the harbour conditions, and presented final plans in May, 1914. These plans were approved by the Commission, and by the high authorities; in July, 1914, a loan for the necessary funds was guaranteed by the Minister of Finance, and negotiations therefor were authorised.

Owing to the war, execution of the work and financial arrangements were postponed until the Commission, convinced of the urgent necessity to carry out the scheme, decided to call for tenders before May 31, 1915.



THE BUCKET DREDGE WITH A SELF-DISCHARGING BARGE ALONGSIDE



THE BAY OF CHEFOO—SHOWING DREDGER, TUGBOAT AND BARGE

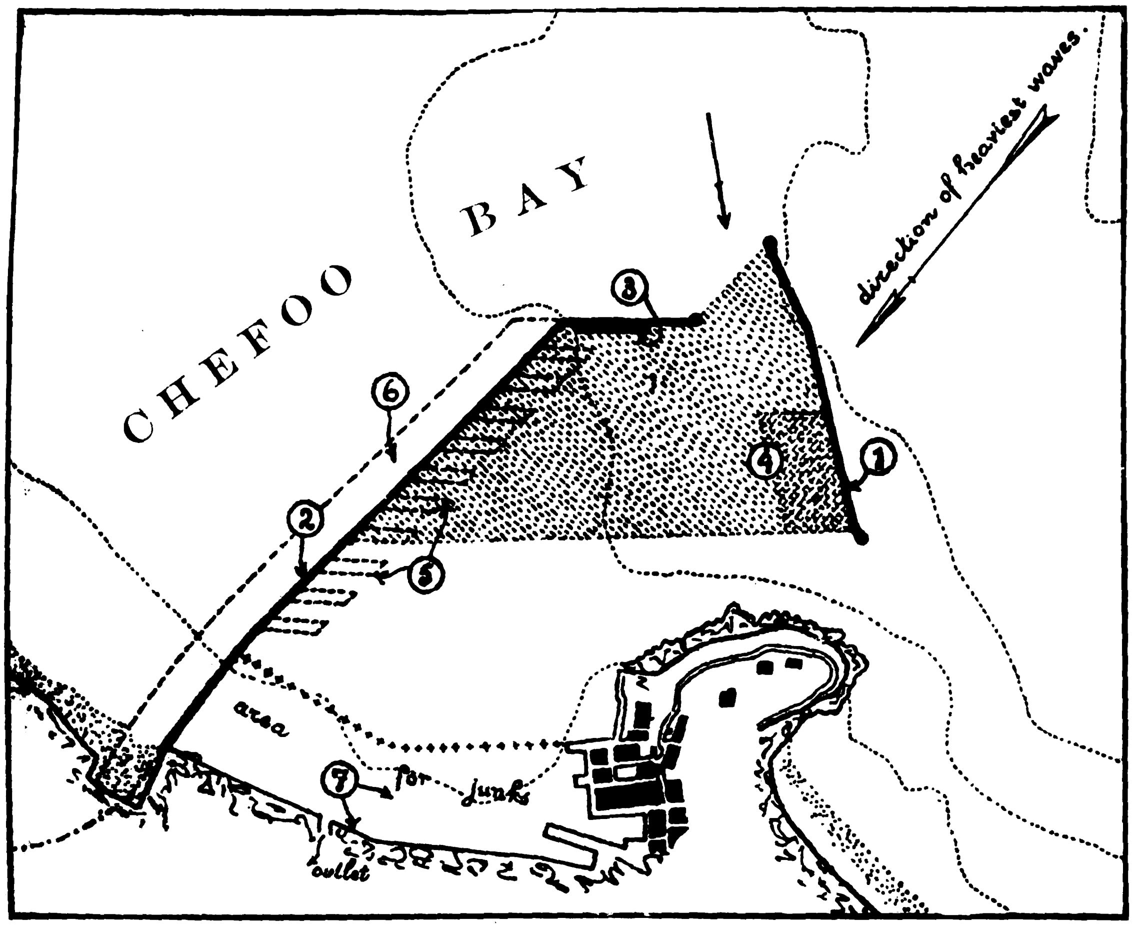
The offer of the Netherlands Harbour Works at Amsterdam was accepted and the contract, amounting to Haikwan Taels 2,677,000, was signed on June 9, 1915, actual work being started in the beginning of August, 1915.

The works to be executed consist of an eastern breakwater, a western mole, with quaywall, and dredging in the shelter formed by the breakwater and mole; these works to be completed in four years.

The breakwater, situated off Tower Hill, with a length of 2,600 ft., will protect the harbour, preventing the heavy north-eastern waves entering from the open sea.

The mole, giving further protection against the north-western waves, will be connected with the shore (and so with the future railway). On the northern part a quaywall will be projected 600 ft. where vessels can come alongside. The total length of the mole will be about 6,000 ft.

The eastern breakwater will consist of a foundation of rubble stone whereupon a wall of masonry in cement mortar will rest, with a caisson of reinforced concrete at each end Before the rubble is dumped a channel to receive this stone will be dredged to about 32 ft. below low water. The dredged material, being soft mud, is transported to sea. Upon the outer berm of this rubble foundation blocks of masonry, weighing about 4 tons, are to be deposited in regular rows to protect the rubble from being washed away by the waves breaking against the quaywall. The wall to be erected upon the rubble mound, will consist of blocks of masonry for the lower part, supported at both ends by the caissons as mentioned and of monoliths built in situ for the upper part. The blocks and caissons will be prepared on shore and be deposited in a bed of broken stone, to be flattened by divers. The blocks will be placed in sloping bond showing in cross-section, three rows: the outside row built up by three blocks, the inner row by four blocks. The monoliths will be surmounted by a parapet on the seaward side.




PROPOSED MOLE AND BREAKWATER AT CHEFOO

WORKS TO BE EXECUTED AT PRESENT: (1) Breakwater (2) Mole with (3) Quay-wall. (4) Dredging, darkly dotted area to 25 feet, lightly dotted area to 20 feet.

WORKS TO BE EXECUTED IN FUTURE: (5) Lateral piers. (6) Quay for tracks and godowns. (7) Improvement of existing works.

SCALE: About four inches to the mile.

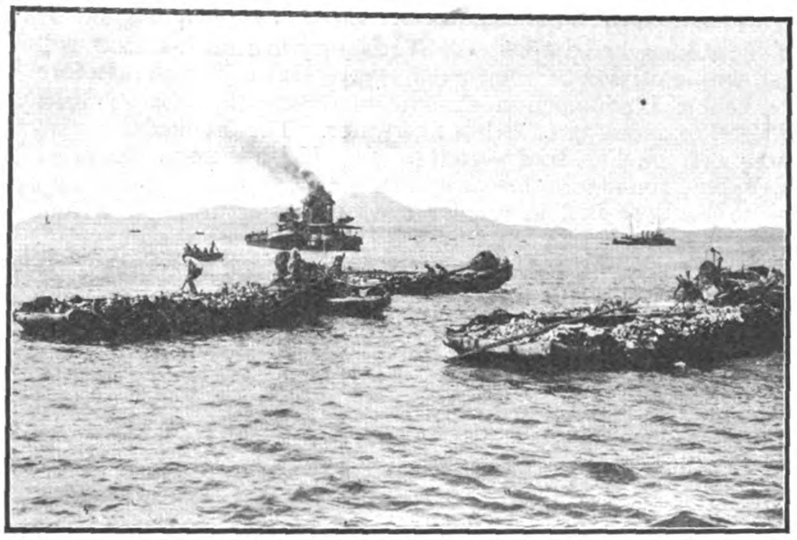
The main entrance of the shelter will be formed between the northern heads of the mole and the breakwater with a width of 450 ft. between foundations, and will be sheltered by the overlapping end of the breakwater.

A sufficient depth for shipping within the shelter will be formed by dredging about 22 ft. below low water over an area of about 100 acres.

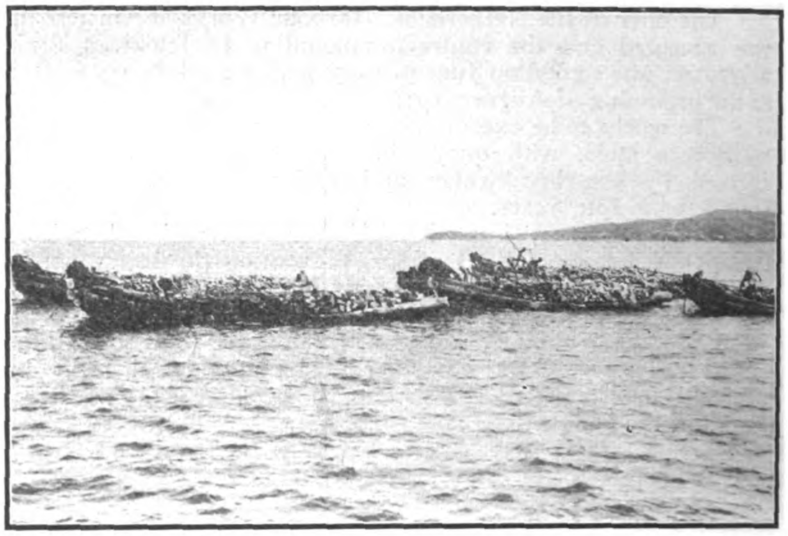
An area of 450 to 900 ft. is to be dredged to a depth of about 27 ft. below low water, offering an anchorage to ocean going steamers visiting the port. The area for anchorage may be increased to meet future expansions, the western mole offering the opportunity to construct wharves by building out lateral piers when required. The mole can also be enlarged to the west by reclamation, thereby forming a sufficient area for sheds and railway tracks, so that cargo may be transhipped directly from the steamers into the wagons and the sheds.

The western mole will consist of a mound of sand covered by clay, brushwood and stone, surmounted by a parapet of masonry. Before the sand is dumped a channel will be dredged in the mud bottom under the inner slope of the mound to reach the sand bottom. The lower slopes, the berms and the bottom under the toe of the outer slope, will be protected by mattresses of brushwood, covered with rubble. Upon the crown rails will be laid. The quaywall on the northern part of the mole will be of similar construction as described for the wall of the eastern breakwater and will be provided with fenders, ladders and bollards.

It is evident that for works of this magnitude many preparations must be made, and a big plant and machinery are required. The dredging plant consists of one bucket dredger, two powerful



Junks Carrying Stone for the Rubble Mound Under Breakwater —Dredger Forming Channel



Junks Discharging Stone along the Site of the Eastern Breakwater

tugboats and four barges with which the channels under the breakwater and the mole have already been dredged for the greater part; while the dumping of sand to form the mound for the western mole has also been started. The daily output amounts in average from 3,000 to 4,000 cubic yards.

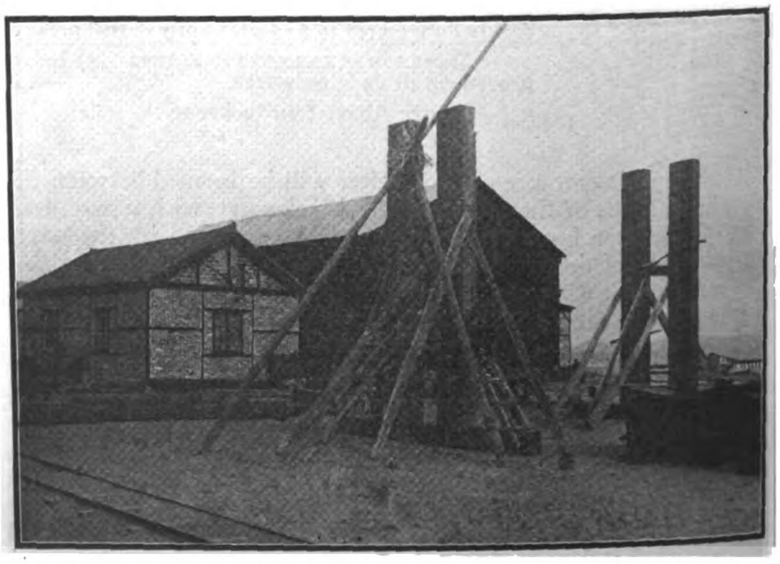
The channel under the breakwater has been filled partly with stone, transported in junks from the quarries on the Bluff to the dumping place, towed by a tugboat. A quantity of about 800 to 1000 tons of stone per day is to be transported in about 40 junks, weather permitting. The stone is blasted by dynamite, from 500 to 800 coolies being required for boring, blasting and carrying the stone in the quarries. A village of coolie quarters has been created in the vicinity of the quarries in consequence.

Another important work is under execution on the Bluff, namely, one of the caissons of reinforced concrete forming the heads of the breakwater. The floor and walls of this caisson are carefully built up on a strong slip. When the walls are completed to a height of about 10 ft. above the floor the caisson will be launched into the water, towed by a tugboat to a safe place in the bay where it will be anchored. While floating the walls will be built up over a height of another 15 ft. When completed the caisson will be towed to its place in the breakwater, sunk in the exact position and fil ed with concrete. The total weight of this caisson when filled will be about 2,500 tons so that there will be no risk that the strength of the waves will remove it. From an engineering point of view the construction of the caisson is most interesting and forms a vital part of the breakwater. Its completion will take several months.

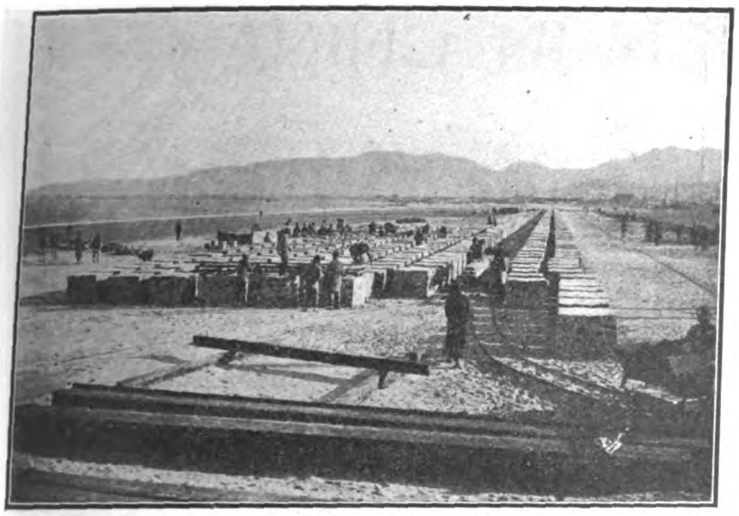
The principal preparatory works on shore are being executed on the West Beach where an extensive blockyard has been prepared for the manufacture of all blocks for the breakwater and the quaywall. The smaller blocks of 4 tons, of which 5000 are to be made, have been under construction since the autumn of last year; 1500 have been completed.

The large blocks forming the walls of the breakwater and quaywall have a maximum weight of about 33 tons. About 4600 are to be made, work being started in the spring of this year. The blocks are being placed in regular rows and over the full length of the blockyard heavy rails have been laid on a solid foundation of concrete to carry a travelling crane to lift the blocks and to put them upon blocktrucks. These blocktrucks have to carry the blocks to a blockjetty, made on the shore, upon which a powerful crane with gear lifts the blocks from the trucks and puts them on lighters which are to be towed to the breakwater. A floating crane lifts them into the water in the right position which is controlled by divers. It is evident that for the handling of these heavy weights extremely powerful machinery is required. At the end of the blockyard godowns, workshops, dwelling house, carpenter shop, coalyard and water supply have been erected. The godown for cement contains 3,000 to 5,000 casks, the godown for stores contains steelware, rope, etc., all kinds of articles and spare parts in large quantities. The workshops are divided in two parts, one for the blacksmiths and one for the fitters, equipped with all necessary machinery and tools.

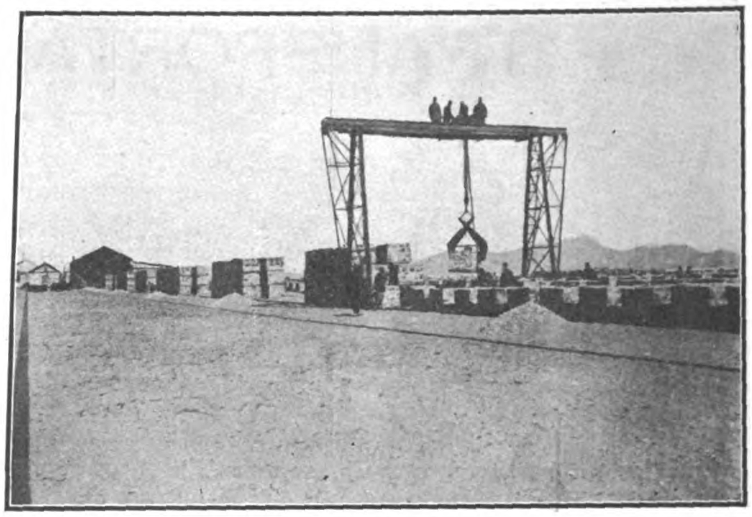
Blockyard at the West Beach—Showing Blocks of 32 Tons Under Construction



Carpenter Shop and Godown—Travelling Crane for Large Blocks Under Construction



CONCRETE BLOCKYARD ON WEST BEACH—SHOWING CONSTRUCTION OF SMALL BLOCKS

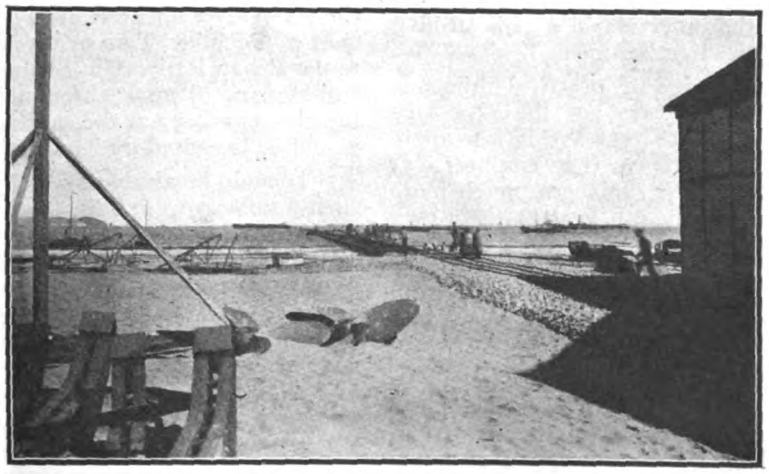


TRAVELLING CRANE LIFTING SMALL CONCRETE BLOCKS ON THE WEST BEACH

The coalyard has a capacity for at least 4000 tons and is connected by a small railway with a jetty on the beach. This jetty has a length of over 1000 feet, and the water at the end of the jetty offers a sufficient depth for the tugboats. A double track has been laid on the jetty which is used daily for discharging and transporting cement, coal, stores, etc.

In the vicinity of these installations the mattresses of brushwood are prepared on the beach. About 250,000 bundles of brushwood have already been stored there and this quantity is gradually increasing, the total consumption being over 2,000,000 bundles. The mattresses—so-called "zinkstukken"—being a special Dutch work, are made on the beach to be floated, and at high water are towed to their place at the site of the western mole, where they are sunk in the right position by ballasting with stones.

Since the building of this breakwater, mole and quay wall, together with the dredging operations, will convert Chefoo from an open roadstead into one of the safest and most convenient harbors on the coast of China, the mercantile community, not only foreign, but Chinese, is preparing for much greater volume of shipments than in the past, and, according to frequent notices in the Chinese Press, the Chefoo-Weihsien Railway project must soon become an actuality instead of as now, an indefinite prospect. The hinterland of this portion of Shantung province is exceedingly rich in agricultural products and proper shipping facilities are expected to lead to great extensions of cultivated land.

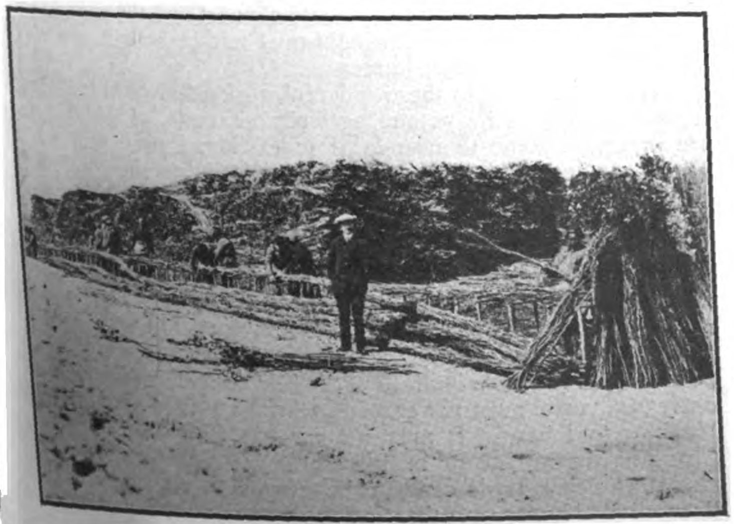


JETTY ON WEST BEACH LOOKING TOWARD BAY

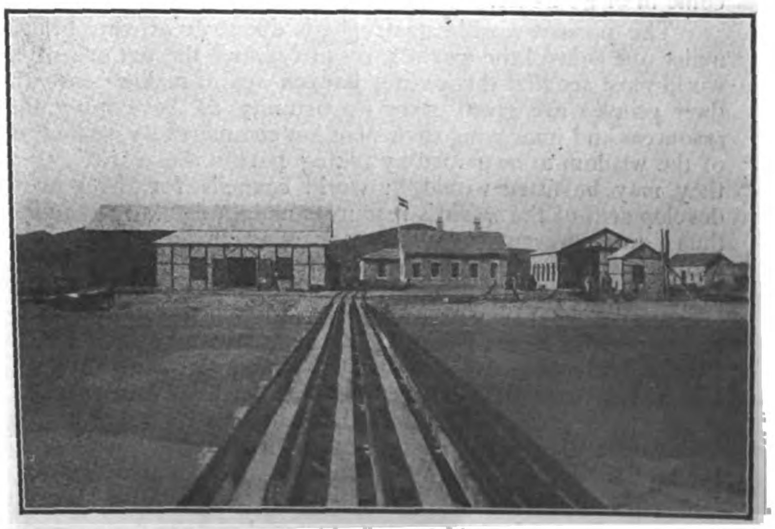
To carry out the various works on the west beach a large crowd of coolies is required, and the aspect at present is that of an ant heap. The works on the beach are under the supervision of the superintendent, who lives on the spot.

Up to now operations have been carried on at full speed and activity will increase when, within a few weeks, the suction dredger, tugboats, barges, pile-drivers and floating crane will have arrived to complete the plant already present.

The works are managed by a technical and a financial manager, two or three civil engineers, and a further foreign staff of eleven members.



BUNDLES OF BRUSHWOOD STORED ON WEST BEACH—COOLIES PREPARING THE WOOD FOR THE MATTRESSES



LANDWARD VIEW OF JETTY—SHOWING GODOWNS, WORKSHOP AND DWELLINGS ON THE WEST BEACH

# TRANSPORTATION IN CHINA

[Extract from Address by Mr. Sidney J. Powell, A.M.I.C.E., F.R.G.S., Before the Engineering Society of China]

China is full of heart-breaking instances of waste of power and misdirected energy, which, under an honest and really patriotic administration, could be turned by engineers into channels of national content and wealth. When one has actually seen what has been done in countries like Egypt and India by railways and improved waterways, in bringing contentment and well-being to the inhabitants, to turn to China and see her infinitely superior resources running to waste makes one despair.

The world now is too much everyman's land for China to stand out. Transportation facilities have opened the whole world up to universal trade. It is for China to do her own developing. If she does not do it herself, it will be done for her.

While there is yet time, let her do it herself by honest administration of funds for the country's welfare; if not, she will lose inevitably those "sovereign rights" of which she is so tenacious, but which she has no right to retain if she does nothing to deserve them. It is modern justice, and modern justice will prevail.

No country in the world, calling itself a civilized country, has such poor means of transportation as China, and this is the result of China's attitude in the past towards Western nations. Whilst the West has been for the last two centuries hurrying up the passage of people and merchandise from point to point, China has stood aloof, content to let the outer world go on rushing about while she drowsed on and lived on her means.

To get paying results a knowledge of practical things is absolutely necessary and the Chinese have not the necessary technical knowledge, or, rather, do not as yet know how to apply that knowledge. The Chinese have very few engineers at present, but they have a great respect for engineers, much more so than for commercial men, whom they can beat at their own game. They realise that technical men know something and apply their knowledge in a way which, in its results, is startling to a people who have been used for so many centuries to getting about on foot or in wheelbarrows and to grinding their corn and weaving their cloth by hand power.

There have arisen in China many enlightened Chinese who know now that it is the duty of their nation to take their place in the world in endeavoring to improve the lot of the struggling agriculturist and merchant who have been handicapped so much by the lack of means of getting the result of their labors on to a market. A nation which takes no pains to improve the lot of its inhabitants is doomed to extinction nowadays. They must all come in or go under.

The present world catastrophe is due to an attempt to bring under one control the world's resources and the nations of the world must see that this cannot happen again, making sure that their peoples are given every opportunity of developing their resources and improving their position commercially, so that, out of the wisdom to be gained by taking part in the world's trade, they may be fitted to aid in world councils for the peaceful development of the world's resources and, in the unity of opinion thus gained, prevent any upstart taking advantage of the world's confidence. The only protection against war is a healthy and prosperous population. China is a very long way behind in the question of the amelioration of the masses, the sufferings of some of her population are intense. The industrious poor in Europe have opportunities for betterment provided for them—those in China hardly any, and the way to provide forthe betterment of the masses is to provide them with cheap and speedy transportation. This can be effected by railways and improvement of waterways for boat traffic.

After referring to the number of utilities created by railways, the production of raw material and the concentration of finished goods which they make possible, Mr. Powell pointed out that the railway systems at present working in China covered a mileage of over 4,000 miles and there were some thousands of miles under construction or projected. Some of these existing railways had been built at great cost and were over-capitalized, largely owing to the ridiculously high cost of obtaining permission to build them and this, whilst an evil and tending to arrest development, had its bright side in proving that railways in China are paying concerns despite adverse financial conditions. If they were not, there would not be such a scramble to get and pay for concessions to build them.

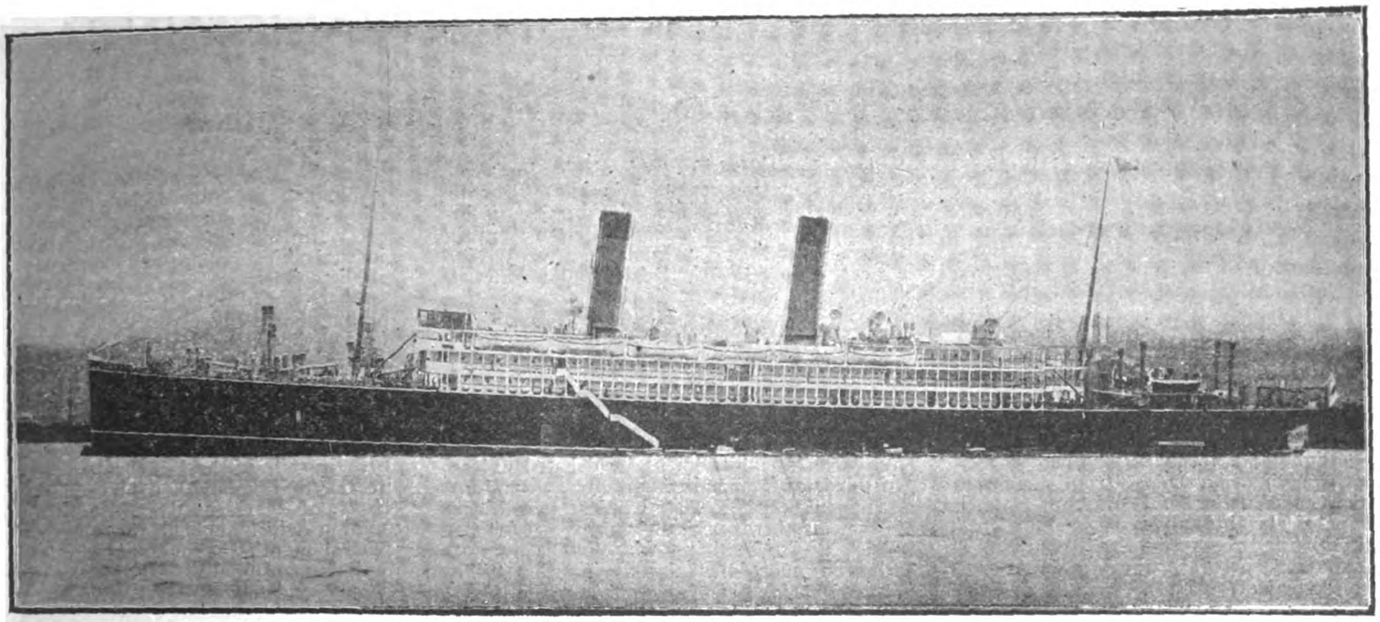
Mr. Powell then proceeded to speak of a number of rich districts which might greatly be benefited by having narrow gauge railways built as feeders to the existing regular (4 feet 8½ inch) gauge railways or to the waterways. These narrow gauge feeder railways only cost from £800 to £1,000 per mile as against about £10,000 per mile for the broader gauge road and the light gauge road could carry, if worked up to its fullest efficiency, as much traffic as any railway in China was at present carrying. When the light railways began to approach their full carrying capacity they could be converted into wide gauge roads, and the latter given double tracks.

He advocated two or three such railways connecting the rich pastoral district north of the Great Wall in Chihli, to feed the Chinese Government Railway which runs along the coast of the Gulf of Pechili. Two or three in Northern Shansi, connecting to the Pehan Railway in Shansi and the main trunk line in Chihli and Honan. Two or three in Southern Shensi, connecting with the above railway at the capital Sianfu. Every province in fact would be benefited by having these inexpensive railways.

It could be an excellent object lesson for the rest of China if such a railway were built from Wuhu to Shanghai. This railway could bring most of the down river traffic into Shanghai, cutting off the roundabout route via Chinkiang—avoiding the dangerous passage through the quicksands at the Lanshan Crossing and the navigation and heavy pilotage charges up the Whangpoo to Shanghai. Such a railway would effect a saving of at least two days in the down journey from Hankow.

Another instance of the lack of economy in transportation in China, the lecturer said, was the way in which cargo was handled at Shanghai, Tientsin, Hankow, etc., especially in respect of the amount that went backwards and forwards over the foreshore when sold to an up-country buyer. The remedy was that the railways should be connected to the wharves and should have large areas with bonded godowns and open storage places to which all their roads would connect and the cargo that the railways and steamers brought in should be bought and sold out of these rail-connected areas.

After referring to the wonderful work achieved in India and Egypt by light railways and agricultural roads, of which there are in Egypt some thousands of miles, Mr. Powell dealt with water transportation; and, in passing, referred to the possibility of installing hydro-turbines in the Yangtze Gorges which would furnish power for operating locks and supplying cheap power for railways in central China; such works being combined with locking facilities on the river itself, thereby removing the great navigation dangers and opening up a great waterway to the richest province in China, namely Szechuan. In spite of the natural advantages enjoyed by China in the matter of waterways, there were intolerable limitations to their use. For example, the draft of a vessel must not exceed 6 ft. if it was to proceed beyond Hankow to Ichang. It must not exceed 2 ft. if it was to get to Changsha during several months of the year, and Changsha was almost as rich a trade centre as Canton, it is certainly a much finer city. Numerous other instances were quoted, pointing to neglect of opportunities which if taken might prove of inestimable advantage.



THE PALATIAL TOYO KISEN KAISHA LINER CHIYO MARU SHORTLY BEFORE HER UNTIMELY END ON THE ROCKS OFF HONGKONG

# THE WRECK OF THE CHIYO MARU

The Chiyo Maru, one of the three big T.K.K. liners, carrying 229 passengers, went aground on the rocks of Lema Island, eighteen miles off Hongkong, in a dense fog at 4.30 a.m. on March 31, and despite efforts of a fleet of salvage vessels has broken in two and has been abandoned. It was seen at once that the vessel was badly damaged, as her oil tanks were punctured by the rocks. The weather conditions prevailing made salvage seem an impossibility but hope was not given up until the vessel's back broke in two, six days later.

The Chiyo was on the way from Manila to Hongkong and apparently was somewhat ahead of her schedule time. The route which she was taking as she neared Hongkong is a new one used since the beginning of the war and is by way of Lion Pass instead of the Green Island channel on the other side of Lema Island. The fog prevented seeing any distance ahead and the liner crashed into a ledge of rocks on the south side of the island.

Passengers who were among the last to leave the ship and who had time after the first fright of shipwreck had passed, to examine the vessel's location, say their escape was almost miraculous as the liner struck a narrow ledge of rocks on which she wedged fast. Ten yards to either side and her bow would have crumpled up against precipitous cliffs with more than 50 fathoms of water at their base. The boat ran sixty feet over the ledge of rocks, which is an indication that she was going at a fairly good speed.

The passengers were asleep at the time of the shock. A wireless message asking for aid was sent out at once and the British destroyer Whiting came immediately. Most of the passengers were transferred to the destroyer at once, as far as is known here, and they were immediately taken to Hongkong. While press report gave credit to the passengers for courage, some of those who were lowered in boats soon after the accident saw they had need of fortitude as their boat hung against the side of the ship for more than an hour while the crew tried to fit the rudder and the overlocks.

The Chiyo was in command of Captain Bent, for many years a skipper in the T.K.K. service, who was on his second voyage with the boat. He succeeded the late Captain Greene who was recently transferred to the Tenyo. Although Captain Bent has made in public a statement regarding the cause of the accident, some of the shareholders of the T.K.K. stated they were inclined to blame Captain Bent as despite a dense fog and the difficulty of the approach to Hongkong, the steamer was running at the speed of 14 knots an hour.' Passengers stated that the Captain had given orders that he must be called immediately if any fog were encountered, and that the ship was kept at high speed by the Japanese officer in charge despite the fog and the difficulty of the new passage into the harbour. The vessel was five miles off her course.

The Chiyo Maru was a triple-screw turbine steamer of 22,000 tons, the same in type as the Shinyo Maru and the Tenyo Maru. She was built in 1908 by the Mitsubishi Dockyard and Engine Works at Nagasaki and was made to conform with Lloyd's requirements and the regulations of the Japanese government. Her maximum speed was 21.6 knots an hour.

With the Chiyo out of service the T.K.K. will suffer much financial loss and many passengers planning to cross the Pacific will be occasioned much delay. The shortage of vessels for both freight and passenger traffic on the Pacific is keenly felt just now. The statistics given in the report of the T.K.K. at its recent general meeting show that the profits of one voyage to America and return for a vessel of the type of the Chiyo is approximately 350,000 yen. There was a large list of passengers to be taken on at Hongkong and about forty passengers had engaged passage at Yokohama. This means that the Chiyo would have carried a capacity passenger list with four or five persons to the cabin. Passage across the Pacific just now is not easy to get and space in the larger liners is now practically reserved far into July. The disaster to the Chiyo will tend to make the situation worse.

Of the 4,800,000 yen, the original cost of the vessel, 3,351,000 yen has been paid. The insurance upon the vessel is reported to be 3,950,000 yen, of which 3,150,000 yen is on the hull and engines and 800,000 yen on her equipment. The companies concerned are the Tokyo Marine and Lloyds.

# 25 YEARS OF CONSTITUTIONAL IMPERIALISM IN JAPAN

[ADDRESS BY PROFESSOR E. W. CLEMENT BEFORE THE ASIATIC SOCIETY OF JAPAN]

Readers must not expect to find in the Japanese political system such popular rights and privileges as they enjoy, or such as the English enjoy, under a constitutional monarchy. It must be remembered that the Japanese Constitution was framed principally from German models, as best suited to the conditions in Japan at that time. The American Republic and the British Empire were too radical in their political constitutions to be followed by a nation emerging from centuries of feudalism and absolute imperialism. The modifications of imperialism could not be too extreme or too sudden but must be slight and gradual. The people, as a whole, must be educated up to the point where they could understand and appreciate, not only political rights and privileges, but also political duties and responsibilities. Fukuzawa, the great commoner of Japan, once wrote as follows: "Owing to the peculiar customs which have for so long existed, we are not at all sensitive about our privileges and our rights." The Japanese people needed to be gradually educated up to an appreciation of popular rights and duties. Thus the Constitution was to be, in a sense, the schoolmaster to lead them to constitutionalism.

### The Imperial Prerogative

The sovereignty of the Emperor is the fundamental principle of the Japanese Constitution. Article I reads as follows:

The Empire of Japan shall be reigned over and governed by a line of Emperors unbroken for ages eternal.

The late Prince Ito, the chief compiler of the Constitution, in his "Commentaries on the Constitution of the Empire of Japan," says of this article: "It is meant that the Emperor on his Throne combines in himself the sovereignty of the State and the government of the country and of his subjects."

The "divine right of kings" was carried to such an extreme in England that Charles I. lost his head; but, in Japan, the "divine right of the Emperor" is acknowledged to a degree of which no Stuart ever even dreamed. Uyehara, in his "Political Development of Japan" sets forth that very vividly and asserts that the Emperor of Japan can use "more effectively than Louis XV" the latter's famous expression "L'état c'est moi."

It is really unthinkable that any Japanese Emperor could ever suffer the fate of Charles I of England. It was this idea of Imperial sanctity that made people discredit at first the report of the anarchist conspiracy of 1910. It must, however, be acknowledged that even the Emperor is not always exempt from being the subject of discussion. And yet, on the whole, he is generally considered sacred, so that attempts to drag him into politics are resented. An apparent attempt to utilize an Imperial Rescript by the new young Emperor for partisan purposes is believed to have ruined Katsura's last ministry in 1913. And the failure of Saionji at that time to make the Seiyukai yield to what was said to be the Imperial desire in that case is thought to have compelled him to give up the leadership of that party and retire to private life.

Dr. McLaren, in a lecture before the Asiatic Society of Japan, spoke as follows on this point:

"The tremendous prestige of the Imperial name had been used continually for the defense of the government. . . . The divine descent of the Monarch had been made to bear the whole burden of the oligarchical form of government. . . . The oligarchy and the monarchy had been merged into a single governing power, which continued to exist through the reverence of the people for the Throne.'

This idea of the sacredness of the Imperial name has given rise to some ridiculous instances of so-called *lèse majesté*. For instance, the Ministry was censured in 1893 "for its carelessness in maintaining the dignity of the Crown." What happened was that an English lawyer, counsel for the Japanese government, in a case before the English consular court at Yokohama, merely used the name of the Emperor in his plea!

There is one peculiar constitutional provision which requires special notice under this topic of "The Imperial Prerogative." The Constitution cannot be amended unless a project to that effect is submitted by Imperial Order to the Imperial Diet. Then, in neither House can an amendment be debated unless two-thirds of its members are present, and no amendment can be passed unless two-thirds of the members present approve (Article LXXIII). Ito explains why the Diet cannot initiate an amendment by saying that "the right of making amendments to the Constitution must belong to the Emperor himself, as he is the sole author of it." But, just as the late Emperor, now known as Meiji Tenno, granted the Constitution in response to a desire or a demand, so doubtless any prudent Emperor will heed public opinion with reference to amendments.

It may be said, in general, concerning the Imperial authority in Japan, that, while nominally and theoretically it is not limited, yet practically it is somewhat limited. Uyehara says:—

"Neither custom nor law, written or unwritten, nor the Constitution limits his ultimate sovereign power. He is the Supreme Lord and Absolute Master of the Empire."

Yet the Emperor does not interfere in the actual administration of affairs; he reigns but he does not rule. The late Emperor took a deep personal interest in the affairs of State, but never showed the slightest desire to exercise "personal rule." It is, therefore, not difficult for an Emperor, unless he is a man of strong personality, to be at the same time an "absolute monarch" and an absolute figurehead. That was often the case in old Japan; and it is not an impossibility even in New Japan. Uyehara affirms most positively that "it is not the personality of the Emperor . . upon which the strength and the value of the Japanese monarchy chiefly depend," and he claims that it is "the unique history and tradition of the Imperial Throne." But we make bold to say, even in opposition to a Japanese, that the personality of the Sovereign is of special importance. It is possible that, in general, the Imperial personality weighs more than the individual personality. But, in the case of the late Emperor, Meiji Tenno, his own personality, in the sense of his individuality, was no small element in the loyalty and patriotism of thousands of his subjects. And it is not an indivious comparison to state that the feeling toward the present Emperor does not seem as yet to be the same as that toward his illustrious father, Mutsuhito the Great.

### Public Opinion

One of the most significant phases of the political progress made in New Japan during the past 25 years of constitutionalism has been the development of an expressive public opinion. During the feudal system, there was, from one point of view, no public opinion; or, at the best, it was very narrow and local in its sphere of action. But along with the granting of popular rights and privileges, with the spread of education, with the growing importance and power of the press there has been a most gratifying evolution of public opinion. It is true, "and pity 'tis, 'tis true," that often the most evident manifestation of that opinion has been in mob violence. But, in spite of that unfortunate, though perhaps inevitable, concomitant, public opinion, as expressed in the press and on the platform, can no longer be ignored, but must always be taken into consideration. And the Japanese press, in spite of the existence of "yellow journals," is a creator and expressor of sound public opinion.

There can be little, if any, doubt that it was nothing but the power of public opinion which overwhelmed the Katsura Ministry in February, 1913, after less than two months of official life. And it was likewise the fact that public opinion held the Yamamoto Ministry responsible for the naval scandals which forced that Cabinet out of power in March, 1914, in spite of the fact that it was supported by the Seiyukai with a big majority in the House of Representatives. And it was public opinion which upheld the Okuma Cabinet several months against that hostile Seiyukai majority and finally, in the election of March, 1915, completely turned the tables and gave Okuma a big majority. Of course, public opinion is likely to be more or less fickle and sometimes even unjust. In 1913 the Seiyukai members of the House of Representatives were the popular idols on account of their resolute opposition to Katsura; in 1914, because they supported the Yamamoto Cabinet, they were in danger of suffering personal indignities at the hands of a mob, and had to be specially protected from violence. Verily, the populace are iconoclasts as well as hero-worshipers.

It goes without saying that public opinion in Japan would be more powerful, as well as less violent and more regular, if a larger number of people possessed the electoral franchise. The number of electors has, it is true, increased considerably in 25 years, as may be seen from the following statistics:

| | |
|---|---|
| 1890 ... ... ... ... ... ... | 453,474 |
| 1892 ... ... ... ... ... ... | 460,914 |
| 1894 ... ... ... ... ... ... | 464,278 |
| 1896 ... ... ... ... .. ... | 467,607 |
| 1898 ... ... ... ... ... ... | 501,459 |
| 1902 ... ... ... ... ... ... | 983,193 |
| 1904 ... ... ... ... ... ... | 737,788 |
| 1908 ... ... ... ... ... ... | 1,558,676 |
| 1912 ... ... ... ... ... ... | 1,550,978 |
| 1915 ... ... ... ... ... ... | 1,546,241 |

The increase in 1902 was due to the lowering of the property qualification. The decrease in 1904 was due to the lowering of the land tax. The increase in 1908 was due to the extension of the electoral franchise to the Hokkaido and several new urban districts. The increase in 1915 was due to the extension of the franchise to Okinawa prefecture.

One discouraging feature has been that so many of the electors did not exercise their privilege. An improvement in this respect would doubtless follow the complete establishment of party government and a wider extension of the franchise. The election in March, 1915, indeed showed a marked improvement. Whereas the average rate of non-voters among the electors was almost 12 per cent in 1898, almost 14 per cent in 1903 and 1904, over 14 per cent in 1908, and over 10 per cent in 1912, in 1915 it was only about 8 per cent. These figures are eloquent.

The following are the full statistics of the election of 1915:

| | |
|---|---|
| Number of electors ... ... ... | 1,546,241 |
| ,, ,, von voters... ... ... | 121,548 |
| ,, ,, voters ... ... ... ... | 1,424,693 |
| ,, ,, invalid votes ... ... | 7,557 |
| ,, ,, valid votes... ... ... | 1,417,136 |

These figures show that a larger proportion of the electors than ever before appreciated the value of the "precious one vote."

Woman's suffrage is fortunately not yet an issue in Japan; but universal male suffrage has been discussed. A bill to that effect once passed the House of Representatives but was

shelved in the House of Peers. Indeed, it may not be wise to pass too suddenly to such an extreme as universal suffrage; it may be better to extend the franchise gradually by reducing the amount of the tax qualification required for eligibility to vote. It is hoped that the Okuma Cabinet, if it survives till the next regular session of the Diet in the winter of this year (1916), will introduce an electoral reform bill to round out the quarter-century of Constitutionalism in Japan.

It is certainly desirable to ascertain what conclusions and inferences may fairly be drawn from what has been recorded above. In the first place, it is quite evident that when one writes of the government in Japan a capital "G" should be employed. There is nothing small or weak about the administration, whether national, provincial, municipal, or what not. It all centers about the national administration in Tokyo; it is a case of centralization; it is a centripetal form of government; it gravitates around and toward the Imperial Palace in Tokyo. It was with good reason that Dr. W. E. Griffis called his first great work on Japan "The Mikado's Empire;" for the Empire belongs to the Emperor. And it is also with good reason that Dr. Griffis gave the title of "The Mikado" to his most recent work. Moreover, a book, "Japan to America," compiled by Mr. Naoichi Masaoka, and published by Putnam (1914), includes a contribution of a few pages by Mr. Itchiro Tokutomi, the able editor of the Kokumin Shimbun, Tokyo, on "Centripetal Mikadoism." We quote here some of Mr. Tokutomi's expressions:

"But our imperialism, our democratism, our socialism—all these centre upon a single principle and it is 'centripetal Mikadoism,' as we express it and advocate it. Rome was at one time the center of the Roman Empire; hence the adage, 'All roads lead to Rome.' In a like manner the Mikado is the center of our nation. Considered as a body politic, it has him as its sovereign: considered as a distinct race, it has him as its leader; considered as a social community, it has him as its nucleus. Who can, then, contradict me when I say that all our 'isms'—social, racial and political—are included, involved, implicated, by this 'centripetal Mikadoism?'"

And he attributes Japan's "great socio economic revolution" to the "automatic process" of that "centripetal Mikadoism."

Another natural inference from these studies is, that custom is more powerful than law. Or, to express the idea in another way, it takes a long time for a new law to establish itself against an old custom. The feudal system had been so strongly intrenched in Japan, that, even after it was nominally abolished, it persisted in fact in many survivals which die hard. It is true that there is a strong popular demand for more representative institutions; it is also true that the mass of the people are somewhat contented with the *status quo* and are rather submissive in spirit. They still endure official surveillance and hold officialdom in awe; they take off their hats when speaking to a policeman. The survival of absolutism may be seen in the tendency to establish government monopolies and to nationalize industries. The survival of feudalism is evident in the political party system, where clannishness still prevails and loyalty to men is stronger than fidelity to principle.

Another conclusion one may reach is that nominality does not correspond with reality. The Japanese have a common expression, *yumei mujitsu*, which means literally "having name without reality." A certain thing may be so only in name, not in reality · nominally so, but not really so. This is a criticism which some have brought against Japan's present political system; that it is only nominally, not really, Constitutionalism. This may be true to a certain extent; the same political phrases do not connote exactly the same things in all countries. But there is another phase of this nominality. Theoretically and nominally, the central government, for instance, has control over each prefectural government; the Emperor appoints the governor of each prefecture, and the Minister of Home Affairs has the authority to dissolve a prefectural assembly, but he rarely exercises that authority. Both the Minister and the governor, though they are centralizing officials, prefer to respect local public opinion in local affairs.

The political campaign of the special election of March 25, 1915, calls for comment in this connection, because it illustrates some points in the evolution of popular institutions in Japan. The conduct of a political campaign had become too formal and had fallen into the hands of professional canvassing agents; so that, to some extent, the yen had become mightier than the pen. The cost of election had grown to be enormous, except in the very few cases in which a candidate was so fortunate as to meet with little or no opposition. It was, of course, a matter of discussion as to what constituted the legal expenses of a campaign; and it required no little care and ability to steer clear between the Scylla and the Charybdis of parsimony and bribery. It seemed to demand several thousand yen for an "average man" to carry on a campaign in a strictly legal manner. This sum would include such items as printing, postage, advertising, rent of offices, carriage hire and speech-making expenses.

House to house canvassing is one special feature of a campaign and is here dubbed "the submarine attack" It has been carried on by teachers, family doctors, female hair dressers, *et al;* and it has been especially utilized, in a few cases, by female members of the family of the candidate. This feature of women as campaigners has been strongly discussed, pro and con, by the press.

In the campaign of 1915, speech-making was a more prominent feature than ever. Ozaki, Minister of Justice, and the Premier himself actually "took the stump!" One unique feature of the campaign was the sight of Okuma, on a trip westward by rail, making short speeches from the car window at important stations! Another unique feature was the fact that, at many places where the presence of Ozaki or Okuma was impossible, their "tinned speeches" were heard from the phonograph! And an opposition candidate went one better by letting Ozaki speak through the machine but stopping it every few minutes to answer Ozaki's points! There certainly never has been such a "popular" campaign.

It may be added that the landslide to Okuma was the popular response to this campaign. It was a personal victory for the "grand old man," because he was not afraid to appeal to the people. The Army Increment Scheme, which had been the principal issue in bringing about the dissolution, was scarcely mentioned in the campaign. Even the important negotiations with China cut little figure; although they probably had more weight than the Two Division Increase. The result of the election was not so much pro Doshikai as anti Seiyukai. It was not that the electorate loved the Doshikai more but the Seiyukai less. It was a question chiefly of Okuma or Hara (present leader of the Seiyukai). It was because the people trusted Okuma. And, when Okuma's great victory was announced to him, he remarked:

"Now we can witness the dawn of real Constitutionalism in Japan."

Dr. Ukita, editor in chief of the great monthly magazine, Taiyo (Sun), has discussed in quite an interesting manner the change of methods in national elections. According to a summary of his article, he expressed the opinion that there have been three periods, those of robbery, jobbery and beggary. In the first period, violence was used to a large extent; in the second period, bribery rather took the place of violent method; and in this third period, the methods resemble those of begging an election.

If we turn to consider the work of the Diet, we find one phase quite in line with what is going on in the national assemblies of other countries. The real business of each House is being done in the committee rooms rather than on the floor of the House. Uyehara remarks on this point:

"The government has invented a doctrine called 'the principle of *fugen jikko*, or practice without discussion.' But the discussions in each House are not necessarily checked; the oratorical displays are not shut off; but the decision is often left to the calmer consideration of a committee instead of the excitement of a debate"

The House of Peers is a troublesome element in the political world of Japan. Uyehara claims that it is "a great obstacle to the proper development of constitutional government." But he rightly acknowledges that "the real usefulness of the House of Peers" will be more evident, if "Ministers become responsible to the House of Representatives."

In spite of the fact that mob violence is too frequent, there has been a great growth of the power of public opinion. There is even a trend toward democracy, not so much in form as in spirit. Some writers go so far as to assert that there is no public opinion, in the true sense of the word, that there is only mob opinion. But others believe that they see in mob violence only an unfortunate mode of expression of real public opinion; and they think that, with less official repression, there will be less public violent expression. They write about "the awakening of the people;" of the "tendency toward popular government" as "steadily growing strong;" and they claim that "on the whole, it must be admitted that Constitutionalism has made marked headway." They assert that the time has passed when the Japanese nation would follow the lead of one man "as sheep follow the shepherd." The development of such public spirit is no small result of the past 25 years.

In conclusion, it is interesting to notice how the Japanese seem to have united and harmonized various forms of government. They have not adopted but rather adapted what they found useful in other political systems and have harmonized all with Imperialism. The Emperor is still nominally and theoretically the head of the Empire, the sole sovereign; but he has voluntarily given away some of the administrative functions to an Imperial Diet, partly representative in its nature; and he has permitted a large measure of local self-government. In other words, the Japanese have evolved a form of constitutional government which theoretically recognizes the "divine right" of the Emperor to be absolute in his realm, but in practise gives to the people an increasing measure of administration with such representative institutions as an Imperial Diet and local assemblies. McLaren says:

"A Constitution which is obviously a compromise measure, or a system of government, which combines the three hostile elements of an absolute monarch, a bureaucratic oligarchy and a representative legislature, is not likely to be permanently satisfactory to a nation."

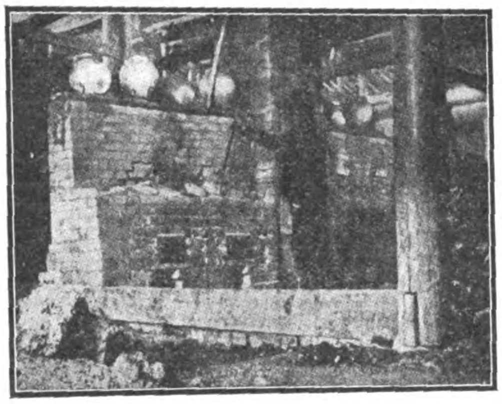
The Tokyo Nichi-Nichi Shimbun says:

"Our political system is neither monarchical nor democratic, neither bureaucratic nor parliamentary, neither militaristic nor anti-militaristic. These six elements are put together in an unharmonious conglomeration."

This is the record of twenty-five years of "Constitutional Imperialism in Japan." It is "imperialism" in origin, in essence, and in substance, in theory and in fact; but it has been, is being and will be, greatly modified by "constitutional" elements. It may never be reversed to "Imperial Constitutionalism;" but it is quite likely that the "imperial" features will grow smaller and weaker, while the "constitutional" elements will grow larger and stronger. This will come not by revolution but by evolution.

# ANTIMONY PRODUCTION IN CHINA

[By F. L. Cole in Mining and Scientific Press]



Stirring Antimony in Furnace

The high prices for antimony have directed attention to China as a source of supply. Owing to the mining being entirely in Chinese hands, there has been little accurate information published regarding ore occurrence or smelting methods. The first record of antimony ore in the Chinese customs returns was in 1895 when a small quantity was exported from Shanghai. In 1904 the returns show that *regulus, crude, and ore were exported. These three, together with antimonial refuse, which is also called 'ash-and-slag,' being the residue from producing crude antimony, have since then become regular articles of export. Antimony oxide has recently appeared in the customs returns, but it is probably the natural oxide or oxidized ore. The first recorded exports were from Hunan province, which has continued to be the leading producer. No proof exists that the ancient Chinese mined antimony, but they produced iron, copper, lead, zinc, and other metals for many generations. Local tradition has it that two Swiss jewelers at Shanghai, on being shown samples of antimony ore, immediately traced the source, and started the trade in 1895.

Exports first were made from Shanghai by a few foreign merchants. The foreign merchant in China used to handle everything that gave a profit and in early days the profits were not small. The ore was brought from the interior to the merchant, who sampled it, paid as little as possible, and shipped the cargo to Europe or America. The business gradually grew and the headquarters of it moved up the Yangtze river to Hankow on the arrival of German metal-buyers, who brought out men familiar with the trade. Later, the centre moved to Changsha in Hunan, 250 miles farther inland. Now buyers go direct to the mines with hard money in hand and compete with each other for ores and products from the opulent mine-owners, who make their own prices.

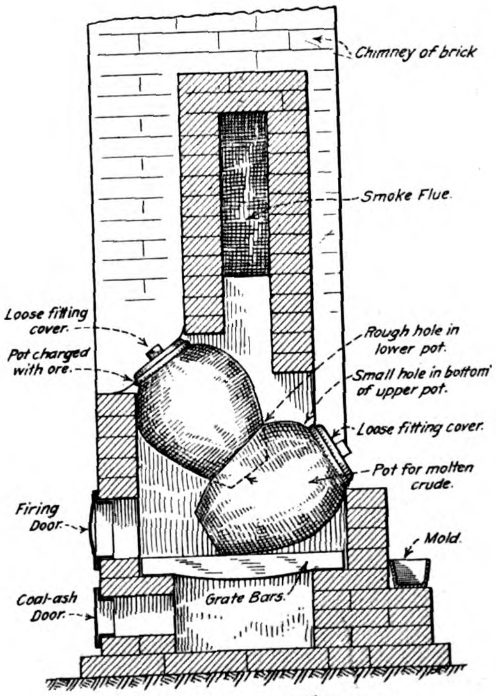
Antimony is known to occur in nine provinces: Chekiang, Kwantung, Kwangsi, Yunnan, Szechuen, Kweichow, Hunan, Hupeh, and Kiangsi. Of these Hunan is the principal producer, but the production in Kweichow, Yunnan, and Kwangsi is growing. It is reported by the native press that the duties in Kwantung on antimony have been remitted for three years from last October in order to stimulate exploitation.

C. Y. Wang, in the 'Mineral Industry' for 1913 mentions the localities of occurrence in Hunan, Kwangsi, Kwantung, and Kweichow. A. S. Wheler, mining engineer for the Board of Agriculture, Commerce, and Industry, Peking, in the September, 1915 issue of *The Far Eastern Review*, has given the best general description of the Hunan deposits. There is little reliable information regarding the other occurrences although the general geologic conditions are somewhat similar.

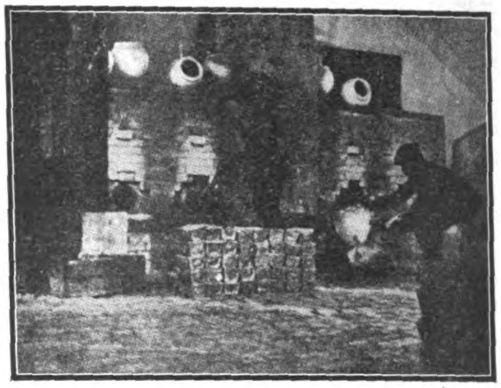
The Hunan deposits may be generalized as fissure-veins with quartz gangue cutting shale, quartzite, and schist: and scattered deposits in limestone. With the exception of the Pan Chi mines (described by Wheler, and also in the *Mining and Scientific Press* of July 10, 1915) none of these deposits has been exploited to any depth. The entire output of Hunan is 6,000 tons of ore per month.

W. R. Schoeller[1] described the Hunan ores and gives interesting information as to their purity. No careful study has been made as yet. The ore is principally stibnite, which in favorable places both at surface and underground is more or less oxidized.

The mines, like all Chinese underground workings, are mere gopherings, with no apparent system except to get out the visible ore above water-level as quickly as possible, in any manner, and with no thought of development. A pinch in a vein or a fault is enough to cause work to be abandoned. Native-made black powder is used, and antiquated clumsy tools that add to the general inefficiency. The working-places are impossible for any but natives and the output per man is decidedly small. The ore is carried or dragged to the surface in bamboo baskets, and small amounts of water are handled in hand-operated bamboo plunger-pumps that work in relays, the sump of one being the discharge of the other. Open-flare oil-lamps, the smoke of which, together with the general insanitary conditions underground, make it anything but pleasant.




Crude Antimony Furnace



Pouring Crude Antimony

The purpose seems to be to obtain the least possible results and provide the most work for the greatest possible number of people. But when the cost of the labor is considered, the results are not as bad as would be supposed. Until recent prices stimulated search, only high-grade ores were mined, but at present all possible grades are utilized and all old waste-dumps are being carefully sorted. Each outcrop has numerous companies working on various lengths, usually units of 10 Chinese feet (said feet varying with each locality) and the working of each company is called a 'mine.' So reports of a large number of mines in a district are apt to be misleading. Actual work is done on a kind of co-operative basis by contractors, wages seldom being paid for day's work. The Chinese insist on having a gamble with everything they undertake, so there are innumerable combinations of leases and sub-leases, which the foreign brain is incapable of comprehending. Theft is not unknown, but unless carried on in too open a manner, no attention is paid, as "everybody is doing it." Payment for labor is usually at a price or at so much per picul (133⅓ lb.) of clean ore, at the pit-mouth. The ore so received is sold to the nearest crude smelting-plant, which also absorbs the local high-grade output.

Hunan province, being rather independent, pays little attention to the various lengthy rules and regulations made by the Central government at Peking. The discoverer of an outcrop can apply for a prospecting-right over a given area through the local officials and the provincial guild to the provincial mining department. This permit entitles him to open the property; after a time, application is made for a working-permit accompanied by fixed payments. This permit necessitates a survey. Recent rules require any exploiter or company to show that there is actually a certain amount of capital available for the proper opening of the mine. This is obviated by forming a company and giving the shares a cash value equal to the requirements, with very little, if any, actual cash in the treasury. This rule is held over the heads of the small people but those in power can cheerfully dodge its ramifications. A tax of 5% on the value of the ore at the mine is collected, and a guild-tax and a 5% export-tax are collected by the customs on the market-value of the ore or products before they are exported. There are probably local taxes on smelting-plants, and various transport-dues along the roads and rivers.

As mining has been done profitably for some years in Hunan, the local rules are more helpful than otherwise to the industry. Transport of ore from the interior to steamer connections is done by coolies overland and by boats on the rivers.

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*'Regulus' means antimony metal of 99% purity; 'crude' is the artificial antimony sulphide of much lower purity.—Editor.

[1] Journal of Society of Chemical Industry, London section. No. 6. Vol. XXVII, 1908; No. 10, Vol. XXXII, 1913; No. 4, Vol. XXXIII, 1914.

SMELTING METHODS. The furnaces for producing 'crude' metal are simple in construction and are made with no regard to economy either in fuel or the recovery of oxide from the escaping fume. They are built in units of four, occupying a floor-space of 12 by 2½ ft., and standing 5 ft. high. One furnace can be repaired while the other three-fourths of the unit is working. The bricks used are local and the cost of one unit varies from $20 to $40. The grate-bars and doors are also made locally, the grates consisting of 12 to 16 bars, a half-inch thick, 14 in. long, and spaced about a half-inch apart. The smoke and fume go to a common flue at the top of the furnace and are carried down in the centre to a common underground flue connecting with a chimney that serves all the furnaces.

The pots used are made locally; they average 12 in. inside diameter, 18 in. high, and the hole at the top is 7 in. They hold 50 lb. of ore. As shown in the sketch, the lower pot is cut on one side to receive the bottom of the upper pot. The upper pot has a small hole about a quarter-inch wide and an inch long cut in the bottom for the liquated sulphide to drop into the lower pot. These pots never join tightly and much fume escapes. The pots last up to two weeks, depending on the care of the operators, and become broken from the stirring of the ore in the upper pot.

When the furnace is hot, the upper pot is charged with lump and fine ore mixed, the greater pieces about the size of a dollar. Cheap local coal is used and the fire raised after charging. The tops of the pots are loosely covered, usually with a round cast-iron cover that collects oxide on its lower side. As soon as the temperature is high enough the ore begins to liquate, forming a pasty mass, and is frequently stirred with iron rods until it is considered to be finished, when it is in a more or less dry state. Meanwhile, when enough liquated sulphide has collected in the lower pot, it is dipped out with cast-iron spoons into molds which form brittle bricks of 10 lb. weight. The bricks are then weighed and boxed for shipment. The residue, left in the upper pot, is removed by spoons and thrown into a square iron box formed by two L-shaped castings; when cool the refuse is in a solidified lump. This refuse contains from 12 to 30% of antimony and silicious gangue, depending upon the grade of ore and the care used in smelting. The operation requires two to four hours during which time the furnace is surrounded by fumes that are unpleasant and injurious. Since the value of the tri-oxide has become known it is occasionally collected from the flues and chimneys and sold to plants producing regulus.

The smelting is done by contract, the contractor furnishing the labor, fuel, and pots, and keeping the furnaces in repair. There are at least twice as many men employed as necessary. Prices vary with local conditions but 'crude' is usually smelted for $15 per ton. It is packed for shipment in cases bound with strap-iron and holding 224 lb. net, and about 240 lb. gross and measuring 10 by 10 by 22 inches. The cases are poorly made, and as the metal is brittle there is often loss by breakage. Cargo is usually re-packed in Changsha or Hankow and the cases bound in sacking before ocean shipment.

The smelting of 'regulus' in Hunan is on an entirely different basis from that of 'crude' smelting, as it is practically controlled by a monopoly. In 1908, C. Y. Wang[2] obtained in France for the Wah Chang Mining & Smelting Co. the rights for China for the Herrenschmidt volatilization process; furnaces were installed in Changsha by French engineers and they have since been operated by Chinese. This process converts sulphide ores into tri-oxide, which is smelted for regulus in reverberatory furnaces. The best results are obtained on low-grade ores. The Wah Chang Co. also obtained from the Peking government the sole right to produce regulus in Hunan. This company owns some low-grade mines and also purchases ores. His Herrenschmidt furnaces have been erected in Yunnan near the treaty port of Mengtze by the Pao Hua Co., also connected with the Wah Chang Co. The latter produces regulus from crude, after converting it to tetra-oxide by a slow roast and also from oxide ores by direct smelting. There are at present several other plants in Hunan smelting oxide ores direct, but they all either sell their product direct or through the Wah Chang Co. This company's monopoly is contrary to the letter and spirit of various treaties with foreign powers, but so far they have succeeded in keeping their rights and have even had them extended.

The reverberatory furnaces used in smelting of oxide ores vary in size from a capacity of 300 to 1,000 lb., the size holding 500 lb. being most used. They usually have a low roof sloping downward toward the chimney and a deep bed with its lowest point opposite the one working-door. The hearth sometimes consists of a square cast-iron box lined with ground fire-brick and kaolin mixed, which is put in wet and well beaten; at other times the lining is used without the iron box.

The same lining is generally re-used and is unsatisfactory, lasting from one week to two months, and an extra number of furnaces must be kept in repair to assure a constant output. The furnaces are fired with soft coal and are connected to a common chimney through flues, generally underground, that are occasionally cleaned for the condensed oxide. The oxide is mixed with soda-ash and charcoal in varying proportions, usually about 10% each. When the charge is melted the furnace is cooled a little to thicken the slag, the slag is entirely removed and the molten metal skimmed clean. A 'starring' flux is then added composed of soda-ash, powdered crude, a little charcoal, tri-oxide, and sometimes small quantities of powdered oxysulphide ores. This starring flux is varied according to the kind of material being melted and is used over again until it will no longer produce the 'star.' As soon as the flux is melted, samples are taken of the metal; when it gives a good star the refining is judged to be complete and the charge is ladled out with cast-iron spoons into molds, producing a cake 8 by 8 by 4 inches and weighing 40 lb. A little slag is put in the mold before the metal is added, and the metal is kept covered with slag. The whole operation takes from four to six hours. Oxide ores are smelted in the same manner, being broken by hand to one-quarter inch size; the charge is more frequently rabbled and the operation requires 10 to 12 hours. Regulus is boxed for shipment in boxes similar to those for crude, except slightly smaller and weighing (net) ten cases to the long ton.

With careful manipulation the losses in smelting oxide are not over 6% and with oxide ores from 10 to 15%. Some of the loss is condensed as oxide in the flues and recovered. The star is no guarantee of purity and can be produced on 95% regulus as well as on 99%. With the naturally pure oxide ores and with the oxide from pure sulphide ores or the residue from 'crude,' the production of 99% (or better) regulus is only a matter of careful manipulation. As far as known, no one in China is producing regulus from crude or sulphide ores by the precipitation methods. The smelting of antimony refuse is being done at several plants, and with one exception the processes used are practically similar. The operation is to heat the refuse with charcoal or coke in small brick shaft-furnaces, lined with fire-brick, using a light blast and condensing the fume in chambers and scrubbing-towers. Numerous difficulties arise, the principal being the length of time required to oxidize the refuse and the difficulty in handling large charges, since the charge agglomerates, having to be constantly punched with bars. The condensers are various, but condensing seems to be the least difficulty; the best results are obtained in small furnaces with easily removable gratebars, completely closed, and with an air-blast sufficient to oxidize the antimony and not melt the gangue, which is principally silica. These furnaces are opened and the scoria removed several times a day through the grates. Charging is done in small quantities at frequent intervals. With a high scrubbing-tower no suction is needed for the condensers. Two furnaces 9 ft. high and 3 ft. interior diameter connected to brick condensing-chambers, in all 50 ft. long, thence to a 40-ft. wooden scrubbing-tower, will handle per day three tons of refuse containing 25% of antimony. Refuse containing less than 15% antimony is hardly worth treatment. The oxide obtained is quite pure and contains from 65 to 80% antimony. Whenever the fume comes in contact with water, sulphuric acid is produced, causing trouble with pipes and tanks for the precipitating of oxide from the scrubbing-towers. One plant has a blast-furnace with a capacity of 20 tons of refuse per day; it is intended to condense the fume, charge limestone and iron for flux, and produce crude metal to be refined in reverberatory furnaces. A mechanical roaster for successfully handling the refuse in larger quantities would be satisfactory. Flotation would probably produce a high-grade concentrate. However, the supply of refuse being limited and coming from many sources and the amounts remaining in the old dumps having been well collected, there is not enough supply available to warrant any extensive installation for this particularly interesting branch of the industry, and it would hardly be profitable with low market-prices. From the average quality of refuse, a ton of regulus is produced from six tons of refuse. One plant is smelting under contract to produce regulus containing 65% of the antimony contents of the refuse.

Constant careful supervision, preferably foreign supervision, is necessary to prevent theft and to obtain good results in smelting. Skilled labor with competent supervision in China is more of a problem than is generally supposed. The actual cost in making one ton of regulus by the Herrenschmidt process, including power, labor, supervision, fuel, and fluxes is not over $25. One plant quotes $35 for custom smelting of oxide ores. The actual cost of smelting oxide ores of 50% antimony, including the above items, without power, is not over $15 per ton of regulus. Depreciation, repairs to plant, and other charges vary with the size of the plant. The price of ore varies with the market price of the metal. When the price is $125 per ton, regulus can be made and sold at a profit of at least 50% and at the present prices there is a profit of from 100% to 500%, depending on how fortunate the producer has been in securing his ore. There is much room for technical improvements in all the processes, and these may come with low prices and competition.

The present scale of wages and prices for materials, with normal freights and prices, render it difficult to see how any other country can compete with China in producing 'regulus' and 'crude.' The Wah Chang Co. has an output of 15 tons of regulus per day, and several other producers bring the total for Hunan to 20 tons per day. At or near Hankow there are five plants supplied with ores from Hunan. Three plants are working on refuse, and two on oxide ores, with a combined production of 10 tons per day. The plant near Mengtze, Yunnan, was producing two tons per day in September; there is some production from Wuchow near Canton, and ores are being shipped to Japan from Canton.

MARKETING. Up to the beginning of the War, the export of antimony was principally in the hands of the New Chinese Antimony Co., a branch of Cookson & Co. of England, together with French interests, and a few German firms who were interested in ores and metals besides antimony. The New Chinese company had an agreement with the Wah Chang Co. for all of their output and the latter could sell only to it. Differences arose in this agreement at the beginning of the War, resulting in cancellation of the agreement, but the Wah Chang pays the

[2] 'Antimony' by C. Y. Wang; 'Metallurgy of Non-ferrous Metals,' William Gowland.

New Chinese a percentage on all sales for one year and can sell to anyone. Having experienced a boom at the time of the Russo-Japanese war, the Chinese dealers were confident that another boom was coming, and the Wah Chang Co. immediately absorbed several independent producers and strengthened their political fences so that in a few months they virtually controlled the Hunan market, not only for regulus, but for crude and ore as well. Huge profits have been made that will stimulate mining in Hunan. Buyers from all sources came into existence, as nearly every foreign firm in China wanted antimony and the local prices jumped daily. Few of the would-be buyers knew anything about antimony and consequently there were some sad mistakes. The home brokers and buyers wanted firm offers for a few days, but the Chinese wanted cash, as the time lost in telegraphing might result in the loss of a sale on a rising market, which was often the case. Formerly regulus, crude, and ore were purchased on contract for forward deliveries with part payment in advance or in some cases full payment in long-term native drafts that could be discounted locally, so the dealer often had the cargo and had turned it for a profit before the drafts came due. With the rising market, however, matters changed completely, so that producers and native brokers often sold to the nearest cash buyer regardless of the contracts hanging over them, with the result that the foreign merchant who had contracts and had sold forward on the strength of them was left holding the bag. The result has been that, with the exception of a few reliable producers, all business is cash and there are numerous cases for settlement involving large sums in which foreign consuls are writing demands and pounding tables in vain, as there seems to be no remedy for the recovery of money advanced or cargo that should be delivered. The Wah Chang Co. opened an office in New York, where it sells its own output, and the export business has resolved into the hands of a few foreign firms. Japanese have been the largest buyers of crude as they ship to Japan and convert it into regulus for the Russian and American markets, having the advantage of their own shipping companies and financial organizations. Some ore is being produced in Japan and a little from Korea; also there is some produced from Indo-China but the bulk of the Japanese regulus is made from Chinese crude.

Since the war very little ore has been exported from China except that which was bought previously; the high freight-rates and the difficulty of getting shipping space for bulk cargo preventing ore shipments abroad. Chinese regulus suffers in the market from either lack of advertising or astute competitors, as analyses show it to be as good or better than other brands.

The table below shows the export of antimony from Changsha for 1915 to November 1, the 1914 statistics for all of China being not yet available. The ore and refuse went principally to Hankow for refining.

| | |
|---|---|
| Antimony regulus .............. | 5,255 long tons |
| Crude antimony .............. | 13,502 " " |
| Antimony ore .................... | 743 " " |
| Antimony refuse .............. | 3,839 " " |

## N. Y. K. NEW VESSELS

The N. Y. K. has now 92 vessels with a total tonnage of 430,000, although the Yasaka Maru, 11,900 tons, and Takata Maru, 7,500 tons, have been lost. The fleet will be increased shortly by the addition of nine new vessels with a total tonnage of 54,800, which will be launched or placed in service this year. The company has now under construction three ships of 7,500 tons each, three of 7,300 tons each, two of 7,400 tons each and one of 30,000 tons. At the end of this year the company will have 101 vessels with a total tonnage of 484,800.

# JAPANESE COTTON INDUSTRY

[By Mr. E. F. Crowe, British Commercial Attaché at Yokohama.]

Imports of raw cotton again increased in 1915. Detailed Customs returns are not yet available, but up to the end of November, 1915, imports amounted to 6,736,000 piculs valued at 200,657,000 yen as against 5,666,000 piculs valued at 199,737,000 yen for the same period in 1914. American cotton showed a proportionately larger increase from 1,043,000 to 1,439,000 piculs, while Indian cotton rose from 3,982,000 to 4,642,000 piculs. For this the increased demand for medium and finer counts referred to later is responsible.

The disturbed conditions in China which discouraged forward transactions in yarn prevented the mills from buying more than their immediate requirements during the first part of the year. But the Indian market not being influenced by the conditions which operated to send American prices up did not show the same power of recovery for some time and when trade prospects began to brighten in March and April Japanese spinners came forward and bought largely until prices went up and sales were checked. The mills adopted a similarly cautious attitude in their purchases of American cotton, but were able to take advantage of the slump in prices in the summer of 1915 to lay in stocks before the big rise in September. The prices of yarn moved in close sympathy with those of raw cotton, but the mills being well supplied with capital were little affected by its immediate fluctuations. Twenty counts which were quoted at yen 94 in January were at yen 122 by the end of the year.

The state of the Chinese trade in one sense determines the welfare of the Japanese spinning industry, as though the home demand is larger, it is steady enough to cause little anxiety, raised or depressed by temporary conditions but expanding constantly. The China market, on the contrary, is very sensitive and has shown itself liable to sudden fluctuations in recent years. Time and again when the Japanese export trade to China has apparently been on the eve of striking development, a change in the situation has upset calculations. In April, 1915, exports of yarn and piece-goods to China seemed to be booming. The steady rise in American cotton had been reflected in the recovery of the price of yarn and with a rising market, and China apparently ready to buy, the outlook was promising. All expectations, however, were falsified by the crisis which arose between the Governments of Japan and China and the boycott which followed its settlement. Not till August did trade recover from the blow which had been dealt it.

At the same time, conditions in China favoured the local spinner, first the abundant crop of Chinese cotton and secondly the fall in the price of silver. Chinese competition in the coarser counts was accordingly severe. In medium and finer counts and in piece-goods, however, Japanese merchants profited by the stoppage of German goods and possibly also by some slacking of imports of Manchester goods to advance their position. The net result was that while exports of counts up to 20 declined slightly for the first eleven months of 1915 and counts over 20 grew, the total was only slightly in excess of that for 1914. The exact figures were:—

| | 1914. | 1915. |
|---|---|---|
| Up to 20 ... | 129,825,000 kin. | 126,337,000 kin. |
| Over 20 ... | 18,056,000 " | 23,901,000 " |
| | 147,881,000 " | 150,238,000 " |

Over 86 per cent of these exports went to China and Kwantung and 12 per cent to Hongkong.

If, however, these figures are compared with the same period in 1913 then it will be seen that the growth has been striking, the export then amounting to 124,000,000 kin.

The home demand was good and would have been better but for the low prices of rice and raw silk in the first half of 1915. The high price of dyes which raised the cost of the finished goods also checked sales after a time. Raw silk, however, recovered and the price of rice also rose in sympathy with the general appreciation in prices. Furthermore, the burst of prosperity which has followed the sudden expansion of exports and the general tone of optimism are regarded as ensuring increased sales.

Conditions being as stated, while the spinning mills realised good profits in 1915, it could not be regarded as one of their best years, though spinners of fine counts were very successful, particularly as in addition to causes already stated the demand for fine counts for knitted goods was great. In August, 1914, the panic in the yarn market caused by the outbreak of war brought many dealers to the verge of bankruptcy. Meanwhile the output of yarn had increased considerably with the installation of new spindles and during the whole of 1915 it was necessary to curtail output, 20 per cent of the spindles being sealed during the first seven months and 10 per cent during the remainder. The mills have agreed to resume normal working from February 1st, 1916. The present output is about 160,000 bales per month and it is estimated that full work will bring this up to 165,000 bales. Now the home consumption has gone from 85,000 to 95,000 bales per month. Exports averaged 50,000 bales in 1915 in spite of adverse conditions making a total of 145,000 bales. The balance of 20,000 bales should, it is expected, be covered by increased sales at home and in China. With regard to the latter, the decreased crops and the rise in the price of silver if maintained will render the position of the Chinese spinner much less favourable than in 1915, or so it is supposed. Other factors are the rapidly increasing trade in piece-goods and in knitted goods. That the outlook is regarded as promising is shown by the fact that extensions at present planned amount to at least 300,000 spindles. There are now some 2,800,000 spindles in all.

In the export of cotton piece-goods, the effects of the war were favourable to Japan and the mills are reported to have made big profits in the sale of shirtings and drills. From May, 1915, the diminution in stocks in Shanghai created a demand for Japanese goods which increased steadily during the year. The mills, however, adopting the view that prices would go higher, showed no anxiety to push sales. This attitude appears to have been justified by results and prices of shirtings and jeans were maintained at a high level. In the case of the latter, Japanese goods had with difficulty succeeded in obtaining a footing prior to the war, but, as a result of the altered conditions, they assumed a position of some importance. Jeans were also sent, though in small quantities, to India with which a considerable trade in shirtings was done. Japanese mills, therefore, had every reason to be satisfied with their trade in piece-goods; ordinary sheetings and drills have been done in good quantities in the past but the export of shirtings and jeans constitutes an advance of some importance. Besides grey shirtings, bleached and dyed goods were the subject of enquiry. It is reported that at the beginning of 1916 the mills stand in the comfortable position of having sold their output for six months ahead and there is a general impression that the position that they have gained in the cotton piece-goods markets of China and India is one which they will keep.

Two other lines of export are imitation nankeens and cotton flannel. Both of these benefited by the war.

[*Note.*—1 Kin=about 1¼ lbs.; 1 Yen=about 2*s.* 1*d.*]

# THE FOREIGN TRADE OF JAPAN

The total volume of the import and export trade of Japan in 1914 was yen 1,186,837,186 (£121,564,804), being a decrease of yen 175,054,671 (£17,930,418), or 12.9 per cent. on the total trade of the preceding year. Of this volume the exports amounted to yen 591,101,461 (£60,545,064), showing a decrease of yen 41,358,752, (£4,236,275) or 6.5 per cent. on the figure for the preceding year, but an increase of yen 64,119,619 (£6,567,624), or 12.2 per cent, on that for 1912, while the imports amounted to yen 595,735,725 (£61,019,740), showing a decrease of yen 133,695,919 ($13,694,143), or 18.3 per cent. to the figure for the preceding year and of yen 23,256,452 (£2,382,105), or 3.8 per cent. on that for 1912. If we take the year 1914 as being divided into two periods by the outbreak of the European war, we find that the exportation of raw silk, *habutaye*, cotton yarn and thread, cotton fabrics, copper, coal, and timber was very prosperous during the first seven months, that is, the period prior to the outbreak of war, and showed an increase of yen 31,005,430 (£3,175,810), or 9.2 per cent. on the corresponding period of the preceding year; but during the last five months the effects of the war were felt, and the exportation of the principal articles of export of this country, with the exception of tea, fell off and showed a decrease of yen 72,364,182 (£7,412,085), or 29.5 per cent. on the corresponding period of the preceding year. On account of a falling off in the importation of rice, sugar, worsted, cotton tissues, iron, machinery, and petroleum, there was a decrease of yen 32,946,386 (£3,374,617), or 7.1 per cent. in the first seven months of 1914 compared with the same period of the preceding year; while in the last five months not only was the importation of German and Austrian products suddenly stopped, but the import trade generally was restricted by inconveniences in exchange and communication, and business-men, fearing a financial crisis which is often unavoidable in time of war, refrained from engaging in new enterprises, with the result that there was a falling off in the importation of building materials, raw materials for manufacture, and machinery, thereby causing a further depression in import trade, which was less in those five months than in the corresponding months of the preceding year by yen 100,749,533 (£10,319,526), or 37.6 per cent.

### Trade with the Various Countries

The volume of exports to the United States was the largest, the amount exported being yen 196,530,008 (£20,130,008), an increase of yen 12,050,626 (£1,234,930), or 7 per cent. on the preceding year. China came next with direct exports valued at yen 162,370,924 (£16,631,253); but as the amount exported to that country by way of Kwantung Province and Hongkong was by no means inconsiderable, the total volume exported to the republic directly and indirectly did not probably fall short of yen 189,000,000 (£19,358,804), an increase of yen 3,000,000 (£307,283) on the preceding year. Next in point of prosperity came the export trade with Great Britain, France, British India, Italy, and Australia. The export trade with Germany fell off on account of the war by yen 3,169,610 (£324,656), or 24 per cent. when compared with the volume in 1913; but exports to Russia in Asia, on the other hand, rose to yen 10,413,147 (£1,066,593), an increase of yen 6,141,734 (£629,083), or over 140 per cent. on the preceding year.

In import trade the imports from British India take the first place on account of the large importation of raw cotton and rice, the amount being yen 160,324,460 (£16,421,639), which, owing to a falling off last year in the importation of rice, shows a decrease, compared with the preceding year, of yen 12,849,401 (£1,316,132), or 7 per cent. Next in order come the imports amounting to yen 96,771,077 (£9,912,023) from the United States, those from Great Britain amounting to yen 92,302,307 (£9,454,298), and those from China which came up to yen 58,305,783 (£5,972,118). All these show a decrease on the preceding year; but most marked is the decrease in the imports from Germany and Austria-Hungary, the rate being 34 per cent. in the former and 51 per cent. in the latter; from August direct trade with these two countries was entirely cut off with the exception of importation of goods which had been shipped prior to the outbreak of war and those stored in bonded warehouses.

If we add to the volume of Japan's trade with the various countries the volume of the trade with their colonies and dependencies, we find that imports from Great Britain and its colonies and dependencies amounted to yen 273,247,066 (£27,988,023) and exports thereto to yen 117,896,767 (£12,075,875), making a total of yen 391,143,833 (£40,063,898), or nearly one third of the total foreign trade of Japan. The import and export trade with the United States, Hawaii, and the Philippine Islands amounted to yen 312,394,814 (£31,997,830), and that with China to yen 220,676,707 (£22,603,371), the trade with these three countries and their dependencies coming up altogether to yen 924,215,354 (£94,665,098), or 78 per cent. of Japan's entire foreign trade, so that they hold important positions in her foreign commerce.

### Trade at the Commercial Ports

Of the thirty-seven open ports of the country, Yokohama exported yen 269,452,464 (£27,599,351), or 45 per cent. of the total export trade; the raw silk and *habutaye* exported from the country passed almost entirely through this port, and a large quantity of other silk fabrics and silk goods was shipped from it, for which reasons its exports exceeded those of other ports. Next to it in volume of exports came Kobe with yen 167,522,636 (£17,158,930), Osaka with yen 19,965,938 (£2,045,062), Shimidzu with yen 7,963,143 (£815,645), Moke with yen 6,290,997 (£644,371), and Wakamatsu with yen 6,169,409 (£631,923). The principal exports of Kobe were cotton yarn and thread and other cotton goods, matches, copper, and straw plaits; Osaka exported various goods for Chinese consumption; Shimidzu having behind it the chief tea district of the country, its principal export was manufactured tea; and Moke and Wakamatsu exported little else than coal.

In the volume of imports, Kobe held as usual the first place, the amount for 1914 being yen 281,959,911 (£28,880,458), or over 47 per cent. of the total import trade; Yokohama came next with yen 178,781,276 (£18,312,125), the total imports and exports of the two ports being yen 897,716,287 (£91,950,864), or more than 75 per cent. of the total trade of the country. After Yokohama in volume of imports came Osaka with yen 41,406,054 (£4,241,120), Moji with yen 32,274,349 (£3,305,782), Yokkaichi with yen 21,934,996 (£2,246,748), and Nagasaki with yen 13,001,368 (£1,331,698). On account of the general depression of trade, the imports and exports of the various ports in 1914 showed on the whole a falling off when compared with the figures for the preceding year, with the exception of Tsuruga, Shimidzu, and Nagoya, which showed an increase on the preceding year, the first on account of a great increase in its export trade with Russia, the second on account of a brisk export of tea to the United States, and the third on account of a flourishing trade in cotton yarn and fabrics.

### Entry and Clearance of Vessels

The number of vessels engaged in foreign trade which entered or cleared from the open ports of the country in 1914 was 19,565, with an aggregate tonnage of 47,192,489 tons, of which steamers numbered 18,973 with an aggregate tonnage of 47,098,639 tons, being a decrease, compared with the preceding year, of 841 vessels, or 4.2 per cent. and 2,392,578 tons, or 4.8 per cent. Of these vessels, Japanese steamers numbered 12,713, with an aggregate tonnage of 23,566,448 tons, being an increase on the preceding year of 188 vessels and 426,544 tons; the tonnage of Japanese steamers amounted to 54 per cent. of the total steam tonnage being an increase on the preceding year of 3 per cent. Foreign steamers, on the other hand, fell from 7,289 vessels and 24,351,303 tons in 1913 to 6,260 vessels and 21,532,181 tons in 1914, their tonnage declining in these two years from 49 to 46 per cent. of the total steam tonnage. This falling off in foreign shipping was, it need hardly be said, due to the European war. The German and Austrian vessels having shortly after the outbreak of hostilities been swept out of the Eastern seas, there was a marked decrease in their number in 1914 as compared with the preceding year, the decline in German steamers being 225 vessels and 705,671 tons, a decrease of 24 per cent. in tonnage and that in Austrian steamers 30 vessels and 114,964 tons, a decrease of 39 per cent. in tonnage. British steamers also showed a decrease of 583 vessels and 1,379,259 tons, a falling off of 9.4 per cent. in tonnage and French steamers similarly fell off by 41 vessels and 158,105 tons, a decrease of 19 per cent. in tonnage, while American steamers increased by two vessels and decreased by 83,502 tons or 3.2 per cent. The Netherlands and Swedish shipping also showed a decrease.

## THE KOREAN TARIFF

The Yokohama Chamber of Commerce in an extraordinary general meeting passed two memorials to be presented to the Premier and the Minister of Agriculture and Commerce. One of these proposes the abolition of the existing customs tariff of Korea, and the other the establishment of a trade information bureau in the Department of Commerce.

The tariff regulations in Korea are those which were in force in pre-annexation days. This tariff the Japanese government declared at the time of annexation would be in force for ten years. According to the resolution, the members of the Yokohama Chamber of Commerce understand that the Japanese government made the promise for fear that the abolition of the Korean tariff might cause anxiety in countries which had trade relations with Korea.

Six years have now passed since the annexation, and the economic relations between Japan and Korea have undergone a considerable change. The war has also worked a remarkable change in the economic condition of Japan. It is argued, therefore, that it is essentially necessary to place the economic markets of Japan and Korea under one and the same law, and to remove all barriers from the economic and trade relations between the two countries. The Yokohama Chamber of Commerce wishes that the government would abolish the existing tariff system in Korea, and adopt there the same tariff system as is in force in Japan.

In the other memorial the Yokohama organization proposes to establish a bureau or section in the Department of Agriculture and Commerce, such as the one the British Board of Trade has at present; this bureau or section to collect all necessary information from all parts of the world and help Japanese traders in their work of extending trade with foreign countries both during and after the war.

# ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

## RAILWAYS

**Manila Railroad Purchase.**—Commissioner Clyde A. DeWitt of the Board of Public Utilities is in the United States, with authority from the governor general to carry on negotiations for completing the purchase of the Manila Railroad Company's lines on Luzon. It will be remembered that the memorandum agreement between the chief executive and the president of the local company, which outlined the terms governing the transaction, summarised in *The Far Eastern Review* for February, was signed late last fall and formally ratified by the legislature in February, the latter body conferring upon the governor general the right to negotiate the purchase for the government of the Philippine Islands. The deal is now practically closed, and while the final papers will probably be signed in Manila, it is understood that there are certain formalities remaining which require the presence of representatives of both contracting parties. Mr. DeWitt, under the authorization just granted him, will be empowered to act for Governor General Harrison in conference with the railroad company's directors in the United States.

**S. M. R. Traffic Returns.**—The South Manchuria Railway traffic returns for March totalled Y2,405,397.35, a daily average of Y77,593.46, and a decrease of Y16,025.48 per day from the corresponding month last year. The total traffic receipts for the fiscal year, ending in March, amounted to Y24,653,742.62, and the net increase on the preceding fiscal year decreased to the nominal sum of Y35,619.28.

The Railway's calculation of the increase for the last fiscal year is at a wide variance from the above. According to their calculation, the total traffic receipts for the fiscal year amounted to Y23.737,817.41 as against Y23,216.721.52 for the preceding fiscal year, yielding an increase for the last fiscal year to the amount of Y521,095.89. The comparison of the detailed figures is as follows:—

| | Fiscal year 1915 | Increase over 1914 |
|---|---|---|
| No. of passengers ... | 3,661,824 | 44,277 |
| Passenger receipts ... | Y 4,701,002 | 594,734 |
| Goods tonnage ... ... | 5,843,139 | 157,191 |
| Goods receipts ... ... | 17,574,906 | 24,756 |
| Warehouse receipts ... | 244,580 | 67,441 |
| Sundry receipts ... ... | 1,156,428 | 34,162 |
| | Y23,737,817 | 521,095 |

The S. M. R. Co. estimates for the current fiscal year as approved by the Government under date of April 20, are as under:—

| | Receipts Yen | Expenditures Yen |
|---|---|---|
| Railway: Main & Branch Lines ... ... | 22,180,254 | 7,385,285 |
| Railway: Mukden-Antung Line ... ... | 2,103,008 | 1,388,520 |
| Shipping ... ... ... ... | 1,466,937 | 1,447,226 |
| Electricity ... ... ... | 1,192,425 | 708,732 |
| Gas ... ... ... ... ... | 207,867 | 152,833 |
| Harbour ... ... ... ... | 2,376,048 | 2,141,942 |
| Mining ... ... ... ... | 14,849,049 | 13,135,674 |
| Hotels ... ... ... ... | 138,237 | 309,880 |
| Railway Area ... ... | 1,307,742 | 2,716,121 |
| Sundry profit & loss ... | 50,000 | 200,000 |
| Interest ... ... ... ... | 335,000 | 5,808,510 |
| General expenses ... ... | — | 340,047 |
| Emergency fund ... ... | — | 501,000 |
| Total ... ... ... ... | 46,367,567 | 39,469,582 |
| Net profit ... ... ... | | 6,897,985 |
| | Y46,367,567 | Y46,367,567 |

**Shantung Railway Returns.**—The monthly traffic receipts of the Shantung Railway for February amounted to S. Y310,000, giving a daily average of about S. Y10,700. Compared with February, 1913, under the German regime, the daily average was about Y9,000 and that for the same month in the succeeding year amounted to about Y12,000. The aggregate returns since the Line passed under Japanese management reached about S. Y3,500,000, promising to attain S. Y4,000,000 by the end of the present fiscal year.

The estimates of expenditures for the Railway during the current fiscal year amount to Y3,300,000. Among the new undertakings may be counted the construction of a medical station at Tsinan, a Primary School at Tzuchuan (at which place a warehouse belonging to the Tzuchuan Colliery is now doing duty as the school-house), and housing accommodation for the Railway people along the line.

**Siam Railway Receipts.**—Approximate receipts in Ticals for February from the Broad gauge (872 klm.) lines compared with actual receipts of February, 1915 (Siam Calendar 2457) is as follows:

| | Year 2458 | Year 2457 |
|---|---|---|
| Passengers | Tc. 358000. | Tc. 250849. |
| Goods | 188000. | 224251. |
| Others | 4400. | 3699. |
| Total | Tc. 550400. | Tc. 478799. |
| April to Feb. | Tc. 4,252,744. | Tc. 3,887,914. |

The considerable fluctuation in Traffic Receipts is due to the Phrabad and Phrathen festivities falling in the month of January last year and Feb. this year.

**Novel Railroad Bridge for Java.**—A bridge built for the Holland government railroad over the Serajoe River in Java has been made complete in the shops in Holland, and so carefully has this been done that no field work will be required in erecting the steel structure other than that of connecting the members. The bridge site is far from any kind of shop facilities, and to make sure that the structure would go together properly it was first erected as carefully as if on its permanent location, in the yards of the manufacturing company in Holland. Following this it was taken down and shipped by steamer to Java. The bridge is of unusual design, consisting of three arched spans of steel connecting with short, straight trusses over the piers. It has a total length of 698 ft. 10 in., and weighs 580 tons. It is designed to carry a single-track railroad having a gauge of 3½ feet.

**Japanese Railway Estimates.**—According to the practical estimates of the Imperial Japanese Government Railways for the next fiscal year, as adopted at the recent conference of the Directors of the District Departments, the aggregate receipts were put at Y122,020,702 and the aggregate expenditures at Y100,874,818, the net profit amounting to Y21,145,884.

**Double Track Open Soon.**—The double track line, which is being built between Ofuna junction, on the Tokaido main line, and Taura, near Yokosuka, is nearly completed and will be open for traffic by the end of May. The work of improvement between Yokosuka and Taura, which was planned to be made this time, was postponed owing to the increasing cost of materials.

**Canton-Wuchang Line.**—On the Canton-Wuchang Railway work is proceeding apace. The workmen's train runs daily now to within a few li of Sienlin. A new extra-mural Wuchang will be built within a few years as it is now seen that the full running of the railway will necessitate wide expansion of the existing city.

**Tasmania Railway Project.**—Recently an offer was made by two of the leading business men of Hobart to construct a railway from Hobart to the west coast of Tasmania. There has been a demand for this railway for a number of years, but as the State of Tasmania had not been in a financial position to construct it, some years ago it offered certain grants to a syndicate as a bonus for the work. The syndicate did not take advantage of this offer, and now the business men mentioned have offered to construct the road if the Government will give them the same terms that were offered to the syndicate. The railway would develop a large and rich section of Tasmania. It would be about 140 miles long, and would cost between Gold $4,000,000 and $5,000,000. An Australian firm had offered to build the road for Gold $30,000 per mile for the old syndicate, if the latter would furnish the rails.

**Canton-Hankow Railway Bridges.**—The contract for the supply of bridge girders for the Canton-Hankow Railway (Hupeh-Hunan section), a part of the Hukuang Loan Railways, has been awarded to Messrs. Jardine, Matheson and Co. (Ltd.), and the Yangtze Engineering Works (Ltd.). The Yangtze Engineering Works (Ltd.), a Chinese concern, has been awarded the contract for the supply of 209.7 tons of the girders, short spans, at a total bid of Gold $23,890, delivery to be completed in 5 months. Messrs. Jardine, Matheson and Co. (Ltd.), tendering on behalf of the United States Steel Products Co., were awarded a contract for the supply of 18 spans of 150 feet and 6 spans of 200 feet at an aggregate tender of Gold $475,304, delivery to be made not later than September 30, 1916.

The time of delivery was a factor in awarding the contract, as it was the desire of the railway to complete the line from Hankow to Changsha during the current year. It was specified that the bridges should be shop erected, which is contrary to the best practice prevailing in the United States. Under the resolutions of the May conference of 1915, American manufacturers are entitled to tender for all bridges provided for by the Hukuang Loan, under the recognized standard practice prevailing in the United States. Therefore a protest was filed against the specifications, and in the award of the contract, the American manufacturers agreed to shop erect one span of each class.

**New Road to Open Mongolia.**—There are three inlets into Mongolia: one from Changchun going up the Sungari to Taonanfu; the second from Ssupingkai on the South Manchuria Railway to Kailu via Chengchiatun; the

third from Jehol to Chihfeng. The proposed construction of the Ssupingkai-Chengchiatun Railway, although only 53 miles long, is an initial step of great commercial importance taken for the opening-up of the neglected Mongolian resources. Seen from an agricultural point of view, the arable land in Eastern Mongolia includes a fertile country in the Taoerh Valley, the region in the Upper Liao Valley, and the zone about Chihfeng and Wutancheng, the total area amounting roughly to 9,861,000,000 *tsubo* (about 8,200,000 acres). All this vast area is already under cultivation. Land available for cultivation or for stock-raising is estimated at 21,000,000,000 *tsubo* (about 17,500,000 acres).

These lands produce an immense quantity of produce like beans, kaoliang, and millet for principal products. One-third of the produce may be put down as for exportation, and the new Ssupingkai-Chengchiatun Line will play an active part in carrying the export produce. Then there are live stock and accessories, including cattle, horses and sheep, their hides and skins, hair and wool, etc. In addition, the fish to be caught in the Liao, the Taoerh, etc., together with soda and other minerals may be taken into reckoning.

Although the Y5,000,000 Ssupingkai-Chengchiatun Railway Loan has already been issued in Japan, (see page 439 this issue), the actual construction work is likely to be deferred to next year owing to insufficient supply of materials.

From a reliable source, it is learned that the survey work will be started shortly and will be completed by the end of June. Construction work may begin immediately afterwards.

**Extension of Area at Fushun.**—The Railway Area included in the Fushun Collieries comprises about 2,500,000 *tsubo* (about 2,100 acres) at present. An extension of the same Area has become necessary to the amount of about 1,100,000 *tsubo* for use as the ground for gathering sand for a sand-flushing enterprise, etc. Negotiations with the Prefect of Fushun in the matter have been taken up.

## SHIPPING

**New Pacific Mail Liners.**—The Pacific Mail Steamship company has bought the Dutch liners Venezuela, Ecuador, and Colombia for use in the Pacific trade. The purchase price is not known. The Venezuela, Ecuador and Colombia are new vessels, completed in the latter part of 1915 for the Royal West Indian Mail line of Holland. They each have a registered tonnage of about 5,500 gross and 3,500 net. The Venezuela and Columbia were built at Amsterdam and the Ecuador at Flushing The Venezuela is slightly larger than the other two.

**Hongkong Shipyards Busy.**—The large shipyards of Hongkong, under certain conditions, can build ships as cheaply as any yards in the world according to a report by U. S. Consul General Anderson. Usually the necessity of obtaining much of the steel plate work from abroad serves to counteract many advantages the industry has in Hongkong, but despite the high freight rates on steel the Hongkong yards are now building ships in competition with the shipyards of Europe. All the shipyards in Hongkong capable of building ocean vessels have work to their full capacity. In the two larger yards fourteen new vessels are now under construction including three new ships for the Blue Funnel Line and three new ships for the China Navigation Company which are on the ways at the yard of the Kaikoo Dockyard and Engineering Company, while the yard of the Hongkong and Whampoa Dock Company (Ltd.), is busy with six new ships for Messrs. Brunsgaard Kiosterud & Co. and two for Messrs. Hans Kiaer & Co., of Drammen, Norway. Two other vessels of the same class will be started as soon as room can be made for them and three others are contracted for. There are also under construction two vessels for the Siam Steamship Company.

According to reports from Siam, the last named vessels will be built to British Lloyd's highest class, carry a deadweight of 1,000 tons and run 10½ knots, having accommodations for 20 first-class and 8 second-class passengers. The boats are expected to be ready in 12 months. The company now has a fleet of 5 steamers for the trade on the west coast of the Gulf of Siam.

**New Spanish Mail Liner.**—Plans and specifications have been approved for the construction of a new 11,000-ton passenger and freight steamer for the Compania Transatlantica for use on the Liverpool, Barcelona and Manila run. The construction of the new steamer will begin in April at the company's shipyards at Cadiz and under favourable conditions the new liner should be ready for her maiden voyage the latter part of this year.

**Panama Canal Open Again.**—The American Ambassador officially notified the Japanese government on April 4 vessels below 30 feet draught would be able to pass through the Panama Canal after April 15, but that the passage of ships might be delayed somewhat owing to the dredging work which may be done later to widen or deepen the canal.

**Merchant Marine.**—According to reports made the Japanese Department of Commerce by 39 shipyards, 300 vessels (with a gross tonnage exceeding 1,000,000 tons) are under construction. Of these vessels 58 are government ships, 56 are oil tank steamers, and 31 are ocean going vessels.

**Furukawa to Ship Own Coal.**—The Furukawa Mining Company has opened a shipping department. The ships to be used in the new department will be the Tenno Maru, 3,300 tons, recently launched, the Kalo Maru, 3,000 tons, to be finished in August, and six other chartered vessels, including the Osaka Maru, Yodo Maru, Prometheus, Simon and one other foreign steamer. The Company will run these steamers between Kobe and Shanghai and Hongkong mostly for the transportation of coal.

**New Nagasaki Wharf.**—The Nagasaki Customs authorities have planned the construction of a wharf at Deshima, capable of accommodating a 5,000-ton steamer, or if used for smaller vessels two of 3,000 tons or three of 1,000 tons. The cost is estimated at Yen 1,101,388, including the dredging operations and other necessary work. The construction will take two years. It is stated that the Government will be approached by the Customs authorities and also by the Municipality for an appropriation.

**Japan's Coastwise Subsidies.**—The renewal of the Government's subsidies to the different coasting services for the two years ending on March 31st, 1918, has been announced as follows:—

To the Nanyo Yusen Kaisha (South Seas Mail Steamship Co.):—Y220,000 for the South Seas Line and the Javanese Line.

To the Nisshin Kisen Kaisha:—Y538,000 for the China Line.

To the Osaka Shosen Kaisha:—Y100,000 for the Dairen Line, Y157,000 for the Direct Vladivostok Line, Y47,000 for the Circuitous Vladivostok Line.

To the Nippon Kisen Kaisha:—Y47,500 for the Kabafuto Line.

An annual subsidy of Y40,000 has been granted to the O. S. K. steamer *Taigi Maru* which is to ply between Kagoshima and Nawa (the capital of the Loochoos) on condition that not fewer than six trips per month be undertaken.

**Japan Traders Suggestions**:—The Japan Foreign Trade Association, has petitioned the government authorities to increase the number of vessels, especially on the American and Indian lines. The association presented four suggestions to the government: The government should allow the shipping companies to increase their rates in a degree that would not disturb foreign trade and let them increase the number of boats.

The duty of the Japanese navy is not confined to the defence of the country, but it is its duty to protect and improve our trade. Let old warships be sold and used for the transportation of merchandise. Naval shipbuilding yards should be utilized as much as possible for the building of merchant boats.

**Japan's Shipyards Hampered.**—The British Government's prohibition of exports of pig-iron and steel railway materials and shipbuilding materials, has caused a panic among Japanese merchants and shipbuilding firms. Orders issued by various shipbuilding yards in Japan for material for constructing vessels amounted at the end of 1915 to 107,000 tons. Of this quantity 36,000 tons were ordered from the United States, 30,000 tons from England, and 25,000 tons from the various steel and iron foundries in Japan. Because the shipment of steel from England is gradually becoming difficult, it is feared that the building yards will be obliged to suspend work partially. As a result of recent negotiations between the Government and the representatives of the shipbuilding yards, it has been arranged that the authorities, as far as possible, shall encourage the manufacture of steel of various kinds in Japan.

Investigations made by the Department of Communications show that 50 steamers, representing 188,000 tons, are due to be completed in various yards in Japan during the course of this year. Owing, however, to the scarcity of steel in the Japanese market, and the difficulty of importing the material, shipbuilders are now seriously handicapped, and are reported to be declining orders. Mr. Kojiro Matsukata, president of the Kawasaki Dockyard, has sailed for Europe via America to buy materials for shipbuilding in New York and to consult with the different iron factories as to the manner of shipping the goods already ordered. Despite the freight congestion, he says these goods must be sent to the eastern coast of America and shipped from there owing to the shortage of steamers on the Pacific.

Mr. Matsukata also will go to England to negotiate with iron manufacturers there as well as the British government as to supplying Japan with iron materials. In England he will represent other Japanese business men in negotiating for a supply of iron materials which are now absolutely necessary if Japan's ambitious program of shipbuilding is to go on.

**Japan to build Warships.**—With the appropriation passed by the Imperial Diet at the last session, the Imperial Navy will soon begin the construction of one battleship, two cruisers, one destroyer, and three submarines. The battleship is to be of 32,000 tons; the two cruisers of 3,500 tons each; the destroyer of 1,200 tons, and the three submarines of 800 tons each. The battleship and three submarines are all to be built at the Naval Dockyard at Kure, one cruiser at the Naval Dockyard at

Yokosuka, another cruiser at the Naval Dockyard at Sasebo, and the destroyer at the Naval Dockyard at Maezuru.

**Japan's Merchant Marine.**—The Department of Communications announced on April 5 the result of an investigation of Japanese steamships and sailing vessels. The figures given are the number of vessels on February 29, 1916.

| Tonnage | | Number | Total Tonnage |
|---|---|---|---|
| 20 to 100 | ... | 1,035 | 47,142 |
| 100 to 300 | ... | 436 | 69,500 |
| 300 to 500 | ... | 99 | 36,485 |
| 500 to 1,000 | ... | 149 | 100,272 |
| 1,000 to 2,000 | ... | 127 | 192,308 |
| 2,000 to 3,000 | ... | 122 | 300,425 |
| 3,000 to 4,000 | ... | 80 | 207,108 |
| 4,000 to 5,000 | ... | 27 | 119,052 |
| 5,000 to 6,000 | ... | 31 | 175,391 |
| 6,000 to 7,000 | ... | 13 | 82 078 |
| 7,000 to 8,000 | ... | 10 | 75,811 |
| 8,000 to 10,000 | ... | 6 | 57,052 |
| Over 10,000 | ... | 5 | 61,672 |
| Total... ... | ... | 2,131 | 1,602,286 |

The number and tonnage of the sailing ships are as follows:—

| Tonnage | | Number | Total Tonnage |
|---|---|---|---|
| 20 to 100 | ... | 7,240 | 313,955 |
| 100 to 300 | ... | 1,491 | 197,687 |
| 300 to 500 | ... | 5 | 1,913 |
| Over 2,000 | ... | 1 | 2,439 |
| Total ... | ... | 8,737 | 545,994 |

**New Japanese Steamers.**—According to the Department of Communications, the steamers that are to be launched during April and May are the Uraga Maru No. 3, of 2,150 tons, at the Uraga Dock, a steamer of 2,800 tons, a sister ship of the Akita Maru, at the Nagasaki Dock. Besides, two more steamers of 3,200 tons each are under construction at the Osaka Iron Foundry Dockyard, and one steamer of 4,600 tons at the Kawasaki Dockyard.

**Formosa-Manila-Java Line.**—The Osaka Shosen Kaisha has received a charter from the Formosan government to open a new line beginning April 26. The vessels will call at Manila, Java, Sumatra, Borneo, Singapore and other ports. Tea and rice are the principal articles to be exported from Formosa.

**T. K. K's. Pretentious Program.**—The Toyo Kisen Kaisha is planning very extensive additions to its fleet. Specifications are ready for eight large cargo steamers which will be launched next year and which will resemble somewhat the "T" class of N.Y.K. freight vessels. In addition to this, the plans are now being drawn for two large passenger vessels slightly larger than the Empress of Russia and the Empress of Asia. All of these vessels will be built in Japan. Two of the freight vessels will be built at the Uraga Dockyards. Some of the other vessels will be built by the new dockyard to be started by Mr. Asano and his associates at Yokohama. The plan of the T. K. K. is to have five first class passenger ships on the trans-Pacific service. The fleet would be composed of the Shinyo Maru, the Tenyo Maru, the two new ships which are about to be built, and the Anyo Maru which is on the South American run. In addition to this, they would have the Persia and the Nippon Maru as intermediates. Two engineers left five months ago for England with plans of the new freight boats for approval by Lloyds.

**T. K. K. Yokohama Dockyard.**—Negotiations between Mr. Asano, president of the T. K. K., and the directors of the Yokohama Dock have gone ahead monthly and a formal contract will be made in a few days. Mr. S. Asano has already selected experts for building the new shipbuilding yard and the construction of slips and other necessary preparations will be started immediately after the contract is signed. The new company which is called the Yokohama Shipbuilding and Dock Company was fully registered on April 18 at the Yokohama District Court, with a capital of 3,750,000 yen. Mr. Asano Soichiro is president and Messrs. K. Sudzuki, S. Hara, R. Kato and M. Maeda, directors. The payment of 12.50 yen a share was made last Thursday and the company has 937,500 Yen as working Capital. As soon as sanction is given by the Yokohama city assembly, which was to be held on 20th inst. the new company will start the work of reclamation. Shipbuilding work will be commenced within this year.

All the machinery and material for the new dockyard were ordered four months ago and the newly formed company is awaiting only a suitable site. The plan is to construct five or six slips at once but the directors of the company wish a site that will permit of extensions and want space for a dozen slips. The new dockyard will employ 5,000 men and in time probably double this number. An official of the company said that it would require only about two months to build the slips after the site had been decided upon and the preparatory work on the site had been finished. This preliminary work, it is estimated, would take only two or three months. They believe that they could be ready for building operations in five or six months time, and that they would be launching the new boats ordered by the T. K. K. during the coming year.

**P. I. Officials Grant-New Rates.**—Despite a recent decision by the Philippine supreme Court which declared that the Public Utilities Board has not the right to require shipowners to present to it their operating statements, the board has ordered other members of the Philippine Shipowners Association who had not yet been granted the authority to carry into effect the rate increase of 25 per cent, to submit their statements of operations so as to enable the board to decide intelligently the justice and reasonability of the increase in rates they were seeking. Many protests have been filed against the proposed increase.

**P. I. Shipping Bill.**—Following the example of the U.S.Congress, the Philippine Legislature has passed an act providing for a Board of Marine Examiners, for the examining and licensing of watch officers and engineers on Philippine vessels in the coastwise trade and for the high seas, license fees, compensation, and penalties in certain cases. In the passing of this act the legislature has interfered with previous legislation which had worked admirably; which had proved efficient; and had also given satisfactory results. Under the present amended act all vessels under Philippine registry engaged in the major coastwise trade, will be compelled to carry extra officers. It does not affect steamers of 1,500 tons and over but steam vessels under 250 tons, which, owing to their limited capacity for freight carrying and passengers will naturally feel the extra expense entailed to a considerable extent. It is the opinion of the shipping fraternity here that the amended act puts an extra 25 per cent on to the operating expenses of the vessels; and that unless corresponding rates are permitted to be charged, the ship owners will be badly hit. The voice of the traveling public, however, has not been raised in protest but has rather approved the new requirements.

**Philippines Tonnage Act.**—The new act regulating foreign shipping which goes into effect on July 1, 1916, is as follows:—

At all ports and places in the Philippine Islands, there shall be collected from any vessel coming from or going to a place outside of the territory of the Philippine Islands, irrespective of nationality in accordance with regulations issued by the Insular Collector of Customs, with the approval of the Secretary of Finance and Justice, twelve and a half centavos per net ton, as expressed in her certificate of registry, or thirty-five centavos (17.5 cents gold) per thousand kilogrammes (2,204 pounds) on merchandise discharged or laden, in Philippine ports, at the option of the master or the consignee of the vessel. Exemptions are vessels not discharging or lading cargo and discharging and landing only passengers and their baggage. Vessels belonging to the government of the United States and to foreign governments, or chartered by the same, if not engaged in trade. Vessels in distress; and Yachts of the United States, the Philippine Islands, or any nation which imposes no tonnage or equivalent taxes on United States and Philippine yachts.

# FINANCE

**China's Salt Revenue.**—A comparative statement of receipts by the Group banks has been issued by the Chief Inspectorate of the Chinese Government Salt Revenue Department to show the proceeds of Salt Revenue received from all offices during the 4 months ended the 31st March, 1915 and 1916 respectively.

| | |
|---|---|
| Total for the 4 months ended 31st March, 1915 | $24,420,000 |
| Total for the 4 months ended 31st March, 1916 | $27,384,000 |
| Increase during latter period | $2,964,000 |
| Balance in Group Banks at 31st March, 1916 | $19,298,000 |
| Release to order of the Chinese Government authorized by the Chief Inspectors on 4th. April, 1916 | $5,500,000 |
| Balance left in Group Banks after payment of release (exclusive of Salt Revenue Receipts during April, 1916) | $13,798,000 |

**Japan's Domestic Loan.**—The Japanese government has issued regulations for the new issue of railway bonds to the amount of 40,000,000 yen. According to the Vice-Minister of Finance, the new bonds will be redeemed within 15 years, no unredeemable period fixed for them. The interest is 5 per cent. per annum, the issue value 95 yen per 100 yen. As the underwriting banks are to get 50 sen per 100 yen, the net proceeds to the government will be 94.50 yen 100 yen. Public subscriptions were received between the 21st and 25th April, the guarantee money to be paid in at the time of subscription, being 5 yen per 100. A similar payment is to be made on May 1st, the amount of instalment being 5 yen per 100 yen, the second instalment 50 yen to be paid in on the 15th May, the third instalment 40 yen on the 15th June. The yields of the new loan will be 5.68 per cent. per annum. Compared with the railway bonds issued last autumn which yield 5.71 per cent, the new bonds can be said to be a successful arrangement for the government.

**Municipal Debts of Japan.**—According to investigations of the Home Office, the outstanding local debt in Japan at the end of 1915 was 326,602,113 yen in all, of which Tokyo, Kyoto, Osaka, Yokohama and Nagoya shared 177,739,247 yen. The Debts of these municipalities are as follows:—

Tokyo Utilities' Loan, 14,580,000; Electric Works' Loan, 90,098,500; Total, 104,678,500.

KYOTO

| | |
|---|---|
| Public Utilities' Loan ... ... ... | 17,550,000 |
| Public, Additional ... ... ... | 1,950,000 |
| Total... ... ... ... ... | 19,500,000 |

OSAKA

| | |
|---|---|
| Harbor Works' Loan ... ... ... | 3,026,000 |
| Electric and Waterworks' Loan | 30,220,000 |
| Total ... ... ... ... | 33,246,000 |

YOKOHAMA

| | |
|---|---|
| Waterworks' Loan ... ... | 617,400 |
| Public Utilities' Loan ... ... ... | 3,108,800 |
| Gas Works' Loan ... ... ... ... | 294,100 |
| 2nd Waterworks' Loan ... ... | 7,000,000 |
| 2nd Gas Works' Loan... ... ... | 2,178,447 |
| Total ... ... ... ... | 12,198,747 |

NAGOYA

| | |
|---|---|
| Public Utilities' Loan... ... ... | 7,816,000 |

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**Japan and German War Loot.**—According to the Foreign Office, Japanese specie deposited in the Imperial Bank in Germany amounting to 5,000,000 marks, is to be seized by the German government, or held by a certain process of law, in retaliation for the retention of the German specie to the amount of 1,500,000 taels which was seized by the Japanese at Tsingtau.

The Japanese government claims that the specie in Germany in question belongs partly to the Bank of Japan and partly to the Yokohama Specie Bank. If Germany holds on to the 2,500,000 yen while Japan has taken 1,500,000 yen, there is a balance of 1,000,000 yen in favor of the Germans. But it is understood that several other sums taken at Tsingtau by Japan may offset the difference.

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**British Buy Japanese Bonds.**—According to London advices to the Bank of Japan, the British Government has begun purchasing 1st and 2nd 4½ per cent. Japanese Sterling Bonds held by Britons. This is believed to be for the regulation of Anglo-American exchange, says the *Japan Chronicle*. For this end Japanese 4½ per cent. Sterling Bonds can fulfil the same function as American securities because payment of interest and reimbursement can be made in the United States according to the agreement made at the time of issue. The same conditions apply to Japanese second 4 per cent. and 5 per cent. bonds, but of them nothing particular is reported. The British purchase of 1st and 2nd 4½ per cent. bonds may have salutary effect upon the London market for Japanese bonds, which has been on the down grade for some time past.

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**Japan's Specie Reserve Increasing.**—Owing to the favorable balance of foreign trade, Japan's specie holdings since last year have been increasing, but for the first three months of this year there was a decrease, the lowest figures being 493,000,000 yen. This decrease was due to the purchase of bonds for redemption and to the payment of interest on foreign debts. The loan redemption operation was, however, stopped at the end of March, and the payment of interest on foreign loans is considerably lessened The country's holding of specie has again begun to increase, the figures at the end of March being 497,000,000 yen, or an increase of 4,000,000 yen compared with the lowest figures in the first quarter of the year. In April, the increase was rather conspicuous, reaching 499,500,000 yen in the first 10 days of the month. In the second decade of the month, the figure reached 510,000,000 yen, an increase of 17,000,000 yen comoared with the lowest level of March. The specie is held in the following institutions: 390,000,000 by the Bank of Japan, of which 120,000,000 yen belongs to the Government. Some 170,000,000 yen is in Japan and of the 340,000,000 yen held abroad, 40,000,000 yen is in New York, the rest being in London.

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**Japan's Customs Revenue.**—The customs revenue of Japan for March was 2,631,387 yen, and the total revenue from customs business for the fiscal year ending March 31 is 32,682,034 yen. This is a decrease of about 6,000,000 yen from the government's estimates of 39,987,000 yen for the year. Compared with the previous fiscal year there has been a decrease of 13,539,764 yen.

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**Yokohama Collects Taxes.**—The Yokohama municipal authorities have announced that 1,073,088 yen in municipal taxes were collected during the fiscal year from April 1, 1915, to March 30, 1916, out of the total municipal taxes assessed of 1,329,676 yen. Of the total, 1,242,625 yen were imposed on Japanese, while the rest, 87,051 yen, were on foreigners. The total amount outstanding against both Japanese and foreigners is 256,888 yen.

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**Financial Independence of Chosen.**—The Government General of Chosen, with a view to attaining its financial independence in the fiscal year of 1919, raised the rates of the land and tobacco taxes during the last fiscal year and has now decided to raise the sake-brewing and registration taxes and to levy income taxes on the Japanese residents from the current fiscal year.

The Government-General has been deriving Y13,200,000 from the Central Government which has now cut its annual grant to Y10,000,000.

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**P. I. Sugar Loans Extended.**—Governor General Harrison has completed arrangements whereby the P2,000,000 of government funds loaned to Negros sugar planters through the Bank of the Philippine Islands will still be available after August 1, the date on which the loans made fall due. The funds in question are loaned by the government to the bank at the rate of two per cent a year and the bank reloans the money to the sugar planters of Iloilo and Negros at eight per cent a year on the security of their crops, all the risk involved being taken by the bank.

Owing to the difficulty of disposing of sugar under present conditions, the governor general was asked to make arrangements to the end that the bank might extend the loans made, and that institution has now been notified that a reasonable extension of time will prove acceptable to the government. The term of extension has not been fixed but it is believed that two or three months will prove sufficient to enable the sugar men to dispose of their product under favorable conditions.

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**Philippine Customs Decrease.**—A falling off of P153,980.69, as compared with the corresponding month last year, is shown in the statement of customs collections for the five ports of entry of the Philippines during March. This amount is the total decrease in all the ports of entry. Manila is responsible for P125,164.80, Iloilo for P11,520.78, Cebu for P7,897.96, Zamboanga for P4,905.32, and Jolo for P4,491.83 of the decrease. The collections for March last year were P897,025.89 in Manila, P138,350.58 in Iloilo, P98,535.14 in Cebu, P14,360,44 in Zamboanga, and P18,849.25 in Jolo while this year they were P771,861.09 for Manila, P126,829.80 for Iloilo, P90,637.18 for Cebu, P9,455.12 for Zamboanga, and P14,357.43 for Jolo.

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**P. I. Revenue Increase.**—Philippine internal revenue collections on imported merchandise for March show P65,398.81 on the credit side of the balance sheet as compared with the collections for the same month last year, the total for all ports amounting last month to P168,054.96 as compared with P102,744.22 for the corresponding month last year.

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**Tsingtau Customs Receipts.**—After the outbreak of the Siege War about Kiaochou in Summer of 1914, the receipts of the Tsingtau Customs for the latter half of that year amounted to only 98,000 taels. The returns for January, 1915, stood between 30,000 and 40,000 taels, gradually increasing in August to 91,444 taels. After the reopening of the Chinese Maritime Customs with Mr. M. Tachibana for Commissioner, the figures rose steadily to 95,000 taels for September, 96,000 taels for October, 98,000 taels for November, and 160,000 taels for December, which last total compares not badly with 168,000 taels for December, 1913, under the German regime. The unsettled state of the country affected the receipts for January, to which month 140,000 taels are credited, the February receipts further decreasing to 120,000 taels.

## MINES AND METALS

**Chinese to Develop Mines.**—The action of the Chinese Central Government in creating the position of Superintendent of Mines of Hupeh Province to develop the mineral resources of the Province has brought forth some criticism from H.B.M.'s Pro-Consul J. C. Hill of Hankow. It is well known that Hupeh is rich in iron, coal, lead, and copper, and it is anticipated that antimony, silver, and possibly other minerals, can be found in paying quantities. The new superintendent intends to begin a systematic campaign of prospecting and locating, in the first instance, copper and silver mines, and two Chinese mining engineers, who were educated in Belgium, have been employed. The plan seems to be, so far as determined upon, to locate the mines and develop them on behalf of the government, selling the ores to foreigners who will have, at the present time at any rate, no interest in the mines.

According to a report by Pro-consul Hill it is laid down in a recent set of rules issued by the Hupeh provincial government that owners of mining land must, under pain of severe punishment, obtain official sanction before seeking to raise capital for the development of their property, and no proposal for the investment of foreign capital will be considered until the authorities have satisfied themselves that the funds required cannot be procured from the provincial government. Official sanction is likewise required in the case of all contracts for the sale of the output of a mine to foreigners, even when the working of the mine still remains in Chinese hands.

The superintendent selected, Mr. Kao Sung Ju, has held a number of positions of honor and trust, as under the Manchu reign he was Superintendent of Education, as well as Superintendent of Industry, of Hupeh, and is now director of the Hupeh Government Cash Bank, and codirector of Hupeh Government Mint. His office will be at Wuchang. Mr. Kao has stated that he would employ an efficient foreign mining engineer, when prospecting has been completed, for the purpose of developing the mines.

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**To Open Chihli Copper Mine.**—According to Chinese press reports permission has been obtained from the ministry of Agriculture and Commerce by a wealthy merchant named Sun Yu-chung for the operation of a copper mine in the vicinity of Hsianghohsien, Chihli, with an initial capital of $100,000.

**Mukden Foundry Co.**—The Yihoshun Foundry, which was established at Mukden last September, has been renamed the Mukden Foundry Co., and will be reorganized into a share stock company on a capital of Silver Y50,000. For material Penchihu iron will be employed. Electricity is used as power. Stoves, agricultural implements, brakes, wheels, carpenters' tools, household utensils, etc., are being manufactured. The prices of the products are considerably lower than Japanese imports of similar quality.

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**Lead Mine on Chia River.**—On the upper Chia River exists a mineral vein containing gold, silver, copper, and lead in which there are traces of random working by Chinese and Koreans. The vein is interrupted with a number of faults and it is this disadvantage that has deterred capitalists from operating this mine in earnest. An arrangement recently has been reached between the Chinese owner of a lead mine about 33 miles above Tiehling on the River and a Japanese named Shinozaki to lease the mine, and development work will be started on the arrival of engineers.

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**Japan Buys Chinese Cash.**—Up to the end of February, dating from May last year when the purchase of copper cash was started by Japanese in Shantung, the cash exported from Tsingtau to Japan amounted to 13,000 tons worth Y4,368,000 A certain firm in Shantung province has in stock thousands of tons and the total amount of the square holed coin gathered for exportation is nearly 20,000 tons.

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**Chinlingchen Iron Mine.**—An appropriation of Y300,000 for operating the iron mine at Chinlingchen is to be defrayed out of Japan's Extraordinary Military List when the same is sanctioned by the Cabinet council. In such event the Shantung Railway intends to take in hand the working of the mine. There is said to be repairing work to be done before the mining is actually started, and it will be the end of this year or early next year before the first ore will be taken out of the pit.

According to Japanese experts' reports the ore in this mine has been over-estimated as to quality and quantity. The percentage of iron is said to be not over 60. The magnitude of the vein was estimated by the German geologists to be about 100,000,000 tons. This estimate is pronounced as rather exaggerated. It is considered safer to put the content of ore at about 50,000,000 tons.

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**Japan to Work Manchurian Mines.**—Progress is being made between the government of China and the South Manchuria railway company over the plans for the working of the Anshanchan iron mines in Manchuria, reports the *Yorozu*, which says it is believed that the Chinese government eventually will grant to Japanese railways the right to work the mines. The work may be undertaken by a joint enterprise of Japanese and Chinese capital, but the *Yorozu* says that although nominally the capital of the company, which will be twenty million yen, is to be taken up by the Japanese company and Chinese capitalists, yet practically all will be Japanese money.

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**Disaster at Fushun Colliery.**—A disastrous accident took place in Oyama Pit of Fushun Collieries on April 15, while 2,000 men were at work. Out of this number a Japanese foreman, of the name of Hamaji, and about 60 or 70 Chinese coolies are missing. The dead carried out by the medical corps numbered 16. Six men of the Medical Corps were injured more or less. The Pit yields 1,400 tons per day in ordinary circumstances, but the daily output will not average over 800 tons for the time being.

**Japan to Mine in Yangtse Region.**—As result of a visit to China by Mr. Kishichiroe Okura, heir to Baron Okura, Messrs. Okura and Co. have decided to start mining works in the Yangtsze Valley, according to the Japan Advertiser. The mines in question are about 30 miles southwest of Nanchang in Kiangsi province. The company has already obtained permission from the Chinese Government and the work will be carried on jointly with Chinese capitalists. The mines are expected to produce 350,000 tons a year.

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**Seoul Mining Company.**—A report from Holkol, Korea, gives the following results obtained from the Seoul Mining Co.'s operations for the month of March.

| | Yen. |
|---|---|
| Value Bullion Recovered ... ... | 131,217.00 |
| Value Concentrates recovered | 150,916.00 |
| Total Receipts (approx.) Yen | 282,133.00 |
| Operating Expenses (approx.) | 110,000.00 |
| Operating Earnings (approx.) | 172,133.00 |

The Kung Kol prospects are reported to be decidedly encouraging.

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**Oriental Consolidated Report.**—During December the Oriental Consolidated company's output was $144,472 from 26,621 tons. The three mills worked steadily as there was plenty of water, and there were few stoppages of Okura's power supply. The extraction obtained in the Taracol cyanide plant was 89%, while that for the Maibong tube-mill 105%, the latter due to a hang-over in the zinc-boxes, from the previous month, when the extraction was only 75.7%. It is hoped to be able to maintain a more even output from the Maibong tube-mill as soon as all details are arranged in routine order. The February output was $116,800, a reduction due to lower grade and a short month.

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**Tin and Tungsten Find in Siam.**—Two all-British Syndicates, the one domiciled in Singapore, the other in the Malay States, have been quietly and unostentatiously prospecting and taking up areas in Southern Siam and Siamese Malaya. In fact, says the Penang Gazette, one of the syndicates had concluded arrangements with a big London Company for the working of one of their areas believed to be of great value only a few days before the war broke out.

The managing director in Siam of both these British syndicates has continued prospecting and we now understand, that besides three valuable tin areas acquired in the Monthon of Nakon Sri Tammarat, he has quite recently found an extensive and rich wolfram deposit in a district never before, it is believed, visited by any European. This deposit, both lode and alluvial, extends over several square miles and has the rare advantage of an inexhaustible supply of water running through the centre of the property.

In Siamese Malaya he has discovered and acquired another rich alluvial and lode tin area. This has been named the Layston mine and may be the mine written about by John Smith 200 years ago, in his fables of Malaya.

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**U. S. Dredges in Malaysia.**—Dredging operations in the Federated Malay States and Siam have for the past few years assumed considerable importance. Recovery of tin is the principal object sought. Practically all of the operators are English companies and chief among these is one known as Malayan Tin Dredging, Ltd., which has approximately 1,200 acres of tin-bearing lands in the Kinta Valley at Batu Gajah station, Perak. The property has been drilled throughout at close intervals and four special Lobnitz bucket dredges are now in operation, with another to be put in service in the near future. It is estimated by the company that one of these machines will clean up 8 to 10 acres per year. A number of dredges of American build were constructed during the year for companies operating in the Peninsula. These include one 7 cu. ft. Bucyrus dredge with steel hull, for a company known as Tin Bentong, which will be installed at Kuala Lumpur, and one 5½cu. ft. Bucyrus dredge, also with steel hull, for the Tin Mines of Siam, Ltd., a subsidiary of the East Asiatic Co. of London. This dredge will be used in the Pong district of Siam.

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**Burmese Tungsten Supply.**—Efforts to increase the wolfram (tungsten) industry in Burma, are already bearing fruit in Tavoy, which is the centre of mining. Since December, Tavoy has become almost a metropolis. The present production tops 200 tons and the required quantity after March is 350 tons monthly. Over 8,000 Chinese and Indians are at work, with the object of augmenting the output. The important increase is reported of 484 tons in the annual output of wolfram, which makes the output 2,115 tons. It is hoped in official circles that the output for the present year will reach 4,000 tons.

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**Fire Clay of Fuchou.**—Fuchou fire clay was quoted at about Y12 per ton for delivery in Japan last year and has competed with the Iwaki output quoted at Y15 per ton until the rise of freights and short tonnage which have thrown the export of this article to Japan out of the question. The consumption by the Ceramic Division of the S. M. R. Co., Central Laboratory, and the Railway Workshops at Shahokou combined, is measured at between 4,000 and 5,000 tons per annum and a larger market is to be sought in Japan. The most likely customer is the Government Steel Works, Edamitsu, whereto the bulk of last year's consignments was destined. The Fuchou output is of excellent quality. The clay belt covers about 9,000,000 *tsubo*. If the steamer freight should be brought down to a more workable level, exportation to Japan might be resumed with a promise of a fair profit.

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**U. S. Army Coal Award.**—The contract for supplying the United States Army in the Philippines with 60,000 tons of coal, and for which bids were opened on March 1, has been awarded to the Kailan Mining administration with head offices at Tientsin, China. The contract calls for delivery at Chinwangtao, China, the army to furnish the transportation of this amount of coal, each ton to consist of 2,240 lbs. The prices submitted by the Kailan Mining administration for Kaiping bituminous coal are $2.50 (U. S. Currency) per ton for lump coal and $3.00 for washed nut coal. The contract provides that if any portion of the coal contracted should necessitate lightering, the contractor should receive $0.50 for each ton thus lightered, provided that the amount does not exceed 15 per cent of the total amount. Other bidders in this award were Madrigal and Co., and the Mitsui Bussan Kaisha, whose lowest price for delivery of Japan coal in Manila was P13.75. ($6.87 U. S. Currency) a ton. The army cement contract has been awarded to Wise and Company who bid on 45,000 barrels to be delivered at Chinwangtao, China, the army to furnish transportation, at the rate of $1.625 per barrel.

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**Tayabas P. I. Coal Seams.**—Coal deposits in the hills back of Lucena, Tayabas, are the attraction which has led local capitalists to plan the formation of a mining company with an initial capital of P500,000, which will number among its incorporators Mauro Prieto, Tomas and Manuel Earnshaw, Teodoro Kalaw, Jose Lim, Doroteo Trinidad, and Vicente Madrigal.

It is said that analysis of the coal obtained from the Tayabas deposits shows it to be of excellent quality, and the promoters hope to be able to place sufficient quantities upon the local market to materially decrease the importations from Japan and Australia. The annual importation of coal from foreign parts is more than half a million tons, on an average. Previous attempts to develop coal deposits in the Philippines have not proved particularly successful, but the men interested in the present project are of the opinion that transportation facilities available and the quality of the deposits are sufficient to insure the success of this new venture.

**Philippines Drilling Wells.**—The Philippine Bureau of Public Works has completed nine new artesian wells, as follows: Caloocan, Rizal, 412 feet, 20 gallons per minute; Quezon, Nueva Ecija, 374 feet, 25 gallons per minute; Los Banos, Laguna, 385 feet, 15 gallons per minute; Salasa, Pangasinan, 15 gallons per minute; Ligao, Albay, 315 feet, 15 gallons per minute; Ayuquitan, Oriental Negros, 135 feet, 30 gallons per minute; Aguilar, Pangasinan, 255 feet, 20 gallons per minute; Tanza, Cavite, 332 feet, 30 gallons per minute; Asingan, Pangasinan, 334 feet, 20 gallons per minute.

**Malay States Tin Output.**—Statement of block tin and tin ore exported, and approximate value (in Singapore currency) during the 3 months January, February, March, 1916, and comparison with corresponding period of previous year is as follows:

| | Block Tin | | Tin Ore (70 per cent. of gross weight) | |
|---|---|---|---|---|
| | 1916 pkls. | 1915 pkls. | 1916 pkls. | 1915 pkls. |
| Perak | 7,178 | 9,205 | 110,003 | 105,541 |
| Selangor | 11,685 | 7,995 | 43,112 | 52,497 |
| Negri Sembilan | | 9 | 4,049 | 5,584 |
| Pahang | 1,694 | 2,143 | 13,535 | 15,726 |
| Total ... | 20,558 | 19,354 | 170,702 | 170,348 |

Approximate Value

| | 1916 | 1915 |
|---|---|---|
| Perak | $10,349,774.30 | $8,810,609.58 |
| Selangor | 4,832,707.54 | 4,643,201.92 |
| Negri Sembilan | 355,210.22 | 423,783.56 |
| Pahang | 1,346,136.45 | 1,383,330.58 |
| Total ... ... | $16,883,828.51 | $15,260,925.64 |

## ELECTRICAL PROJECTS AND APPARATUS

**Will Light Kungchuling.**—The plan of forming an electric light company at Kungchuling, as presented to the South Manchuria Railway Co., has been approved of by the Railway Company. The new company's shares are to consist of 1,000 of Y50 each, of which number one-half is to be subscribed to by the Railway Company. According to a recent investigation the number of subscriptions to the lighting service is about 2,200 lamps, which figures are, however, expected to rise to about 2,500 lamps by the time the works are actually opened.

**Installation at Liushutun.**—Governmental permission for the establishment of an electric light plant at Liushutun is not yet granted but preparations are being pushed forward and orders for the necessary machinery, etc., have already been placed in Japan. Work is to be started as soon as permission is given. The service will be opened some time in June or July.

**Russia Buys Telephones.**—The Russian government recently placed with the Japanese manufacturers an order for telephone apparatus and wires to the value of about three million yen, according to Mr. Tanaka, director of the communications bureau. The Nippon Electric Company, the Oki Shokai, the Kyoritsu Electric Company and others with whom negotiations were concluded are to supply the order in one year's time. This is the first order from a foreign country to the Japanese manufacturers of telephone apparatus and wires.

**Siam Electrical Co. Sales.**—The sales of current in Siam for light and power during the last three years have been:

1913 Tcs. 1,052,879; 1914 Tcs. 1,081,813; and 1915 Tcs. 1,041,236. Rent of meters in 1915 Tcs. 5,749 higher than in 1914 and Tcs. 13,065 higher than 1913. The traffic receipts (passengers) on the Bangkolen Electric line are lower than in 1914 but higher than in 1913. The Samsen line seems steadily improving on last year's figures which were Tcs. 13,978 better than in 1913. The profit on light and power was—1913 Tcs. 840,518; 1914 Tcs. 920,221; and 1915 Tcs. 959,716. The profit on the Bangkolen line was—1913 Tcs. 295,938; 1914 Tcs. 313,779; 1915 Tcs. 316,322. The profit on the Samsen line was—1913 Tcs. 109,942; 1914 Tcs. 132,166; 1915 Tcs. 130,172.

## BUILDINGS

**New Peking Offices.**—A new building will be erected for the Peking offices of the Audit Department on the site of the former building of the Ministry of Navy. The cost of construction is estimated at $240,000.

**British Legation Improvements.**—The British Civil Service Estimates for the year ending March 31, 1917, have been issued, and include Provision for water supply, heating system, electric generating plant and ice-making plant, at Peking to cost £600. The total estimates for the Consular service in China (partly repayable from Indian revenues) are £76,263—last year's total being £73,678.

**Philippine Plan Postponed.**—Falling into the same pit with the proposed government sugar central in the town of Isabela, Occidental Negros, and the new post office building of the city of Manila, the new Manila custom house will have to be forgone for sometime to come on account of the tremendous rise in the price of building materials in the world's markets. The legislature has already set aside a total amount of P1,000,000 for the complete construction of the project, but with the present prices of construction materials, P500,000 more will be necessary. Some months ago, bids were advertised by the public works authorities for the construction of the foundation of the project and six local contractors offered bids, the lowest of whom was John Gordon. Due to the advice given by the secretary of commerce and police, all these bids have been rejected.

## MANUFACTURES

**China Tea Improvement.**—Chow Tze-chi, when Minister of Agriculture, recently obtained funds for the inauguration of a department for the improvement of tea. The Ministry has therefore requested the Governors of Anhui and Fukien and other provinces producing tea to obtain the best experts and to send them to Peking for service in the new department. According to a report issued by the Ministry the export of red, green and brick tea in January and February aggregated 260,000 piculs, 60 per cent of which was exported to America and 40 per cent to Russia.

**China's Aeroplane Factory.**—According to the Imperial News the Chinese Government will establish a factory for the manufacture of aeroplanes. The services of two American and two German engineers have been engaged for the factory, which is to be located in Honan.

**Dairen Bean Mills.**—The total outputs of the Dairen Bean Mill Union during February were 2,078,000 pieces, being a little over 59 per cent. of the maximum aggregate producing capacity. The figures for the leading plants were:—

| | Pieces. | | Pieces. |
|---|---|---|---|
| Nisshin | 143,000 | Chengyuchang | 61,000 |
| Santai | 110,000 | Chuchenghsiang | 56,000 |
| Kodera | 92,000 | Tungyungmao | 52,000 |
| Lishengli | 78,000 | Fuyuan | 53,000 |
| Saito | 74,000 | Hsinshunhung | 43,000 |
| Fushuncheng | 65,000 | | |

**Manchurian Bean Oil for U. S.**—Shipments of bean oil from Dairen to the United States were on a very small scale till the end of February when matters assumed a lively aspect. During the first decade of March, 52,868 piculs of bean oil were exported to America, and in the middle decade a direct consignment from Dairen amounted to 78,800 piculs. With the recent rise of silver, the price of bean oil stood on the 23rd inst. at S. Y11.90, as compared with S. Y10.03 on the corresponding date of last year. Such a broad difference in price ought to have dulled demands in America, but the cotton crops in the United States of last year totalled only 11,000,000 bales as against 16,000,000 bales of the previous year and this decrease had the effect of causing a rise in cottonseed oil, creating a demand for bean oil as a substitute.

**Japan's Cotton Mill Outlook.**—The end of the semi-annual business term for most of the cotton spinning mills comes at the end of May, and directors of various spinning mills are deliberating as to distribution of profits, but their concern is not due, says the Japan Advertiser, to their anxiety to distribute as large a percentage as possible but to their intention to pretend that the profits were not so enormous as is generally believed. It cannot be denied that the profit of the spinning industry was exceptionally big for the present term for the following reasons:—

The American cotton has been continually cheap, the price of cotton yarn has always been higher than the average price of foreign raw cotton, the internal trouble in China has had comparatively little effect upon the export of cotton yarn, the stoppage of British supply of thin yarn in China has called for a substitute supply from Japan and the export of thin yarn textiles for China has become prosperous.

The mills which have profited most are the Amagasaki, the Toyo Boseki and the Goto Boseki. Most of the other companies have of course secured a profit greater by 20 or 30 per cent. than in the previous term. The general impression among those interested is that the Amagasaki will probably pay 40 per cent., the Toyo Boseki 20 per cent. and the Goto Boseki 20 per cent.

**Japan's Paper Mills Busy.**—As a result of the war and a consequent limitation of supplies, the paper mills throughout Japan are either extending their plants or establishing pulp mills.

Some manufacturers have already completed the installation of their new equipments. The

production of paper is expected to make striking progress during the next few months, the extent to which the various mills will share in increased production being about as follows:

The Oji Paper Company has ordered from America a paper-making machine which can produce newspaper at the rate of 2,000,000 lbs. a month. It will be installed at Tomakomaki Mill in Hokkaido by the end of January next year. The Mitsu Bishi Paper Mill is to install two Swiss paper-making machines early in 1917, at the new factory in the suburbs of Tokyo. The machines can produce extra grade printing paper to the extent of 1,200,000 lbs. a month. The Fuji Paper Company will put two modern machines of Japanese make into operation at the Kanzaki Mill by the end of June to increase its monthly production by 700,000 lbs.

The Kyushu Paper Company has installed two Japanese made machines at its factories, to be in full operation by June and increase the company's production by 700,000 lbs. a month. A new American type machine has been ordered by the Kokura Paper Company from a Japanese machine factory to be in full working order by August, to make inferior grades of printing paper to the extent of 400,000 lbs. a month. The Kumano Paper Company has secured three new machines which will be in operation by the end of May when the company's capacity will be increased by 900,000 lbs. a month.

Eleven new machines added to the existing paper plants with a combined productive capacity of nearly 6,000,000 lbs., represents more than 15 per cent. of the entire production at the present moment. In addition a new mill is being established in Oita prefecture for the production of rice paper. In view of the good return from this special line the Toyo Paper Company is believed to have decided to establish a new plant with the same object.

**Demand for Japanese Umbrellas.**—The export of foreign style umbrellas made in Japan has for years been making progress, the recent average being 1,800,000 yen a year. The umbrella makers lack material, and are now unable to make as many umbrellas as demanded for export and for home use. The Toyo Shokufu (Weaving) Co. has bought a factory and plant in Kirin from the Nippon Seifu (Cloth Manufacturing) Co. for weaving cloth for umbrellas, with 150 looms in perfect working order and 2,000 yards of cloth are being turned out every day. It is expected that 400 looms will be in working order before the end of the year when 5,000 yards a day can be turned out.

**New Manchurian Tannery.**—After months of experiments Mr. Fujita, who was formerly in the employ of Messrs. Okura & Co., has leased a tract of land comprising 2,500 tsubo at the north of the present temporary tannery. On this site a new factory building is to be raised with an annual output of at least Y170,000. Water about Dairen is rather hard and this presents a difficulty.

**Japanese Rock Candy.**—The manufacture of rock candy in Hamamatsu has recently made remarkable progress and two factories, the Horiuchi Rock Candy Co. and the Nakamura RockCandyCo. have ceased competition and opened a common sales department. The production last year was 1,700,000 *kin* (*kin*=1⅓ pounds) of which 1,000,000 *kin* was turned out by the Horiuchi Co. and 700,000 *kin* was by the Nakamura Co., the value of the product being 460,000 yen in all. Of this amount, 1,200,000 *kin* was disposed of for home consumption. About 500,000 *kin* was exported, of which 300,000 *kin* went to Shanghai and 100,000 *kin* each to Tientsin and Tsingtau.

**Japanese Munitions Export.**—Munitions of war already contracted for with the Japanese Government to be supplied during this year amount in value to Y.110,000,000 approximately, of which Y.80,000,000 worth is to be supplied by the War Department, Y.10,000,000 by the Navy Department while Y15,500,000 is the price of the three men-of-war, captured by Japan in the Russo-Japanese War, to be restored to Russia. Exact figures for orders to private merchants and manufacturers are not available, but are estimated at about Y.130,000,000. It is therefore expected that the value of all war munitions to be supplied by Japan to the Allies during this year will aggregate Y.240,000,000.

## FORESTS AND PLANTATIONS

**Reforestation in Chekiang.**—The celebration of Ching-ming or Feast of the Tombs was held with a new and significant feature at Hangchow this year, in the observation of arbor day. It was the first observance of this day in the province and the beginning of a conservation movement which will have great bearing on the industrial life of the Province.

Since Mr. D. Y. Lin's trip up river with the Civil Governor a year ago conservation work and conservation sentiment have been quietly developing. As a result of this trip the Governor gave orders that each local magistrate in the province should plant 150 mow of trees each year. During the past few weeks more than twenty thousand trees have been set out on the hills around West Lake and within the present year three million seedlings and trees are to be put out. A larger part of the trees being put out now are firs which will grow to usable size within twenty years. The same work is going on in other parts of the province though not on so large a scale. Mr. Chen Pao-chin is also directing the work of reforesting the hills, giving full time to the work without salary at present. As returns come in he is to get ten per cent of the income. It is hoped by the officials that this plan will be adopted generally throughout the Province.

**Reforesting China's Sacred Mountain.**—The important question of reforestation is at last receiving attention here at the famous mountain Taishan which has been bare for so many years. A new official, Mr. Shen, has arrived and has thrown himself heartily into the plans laid down by the Government for reforestation. A few days ago all of the schools in the city, led by the official, marched to the side of the mountain and there planted about a thousand trees, the official himself planting two. The boys of the Methodist High School observed Arbor Day by planting a hundred trees on their new campus outside of the West gate of the city.

A movement that means still more for the future of this mountain is the purchase of a large tract of land in the South Suburb that will be devoted to raising trees for planting on the mountain. Many thousands of seedlings will be started this year in the hope that the old mountain will be covered with trees before many years pass. Still another special effort is being made to improve the mountain by a certain group of men who have applied for the right to develop a tract of land back in the mountain. Formal consent has not been received but it is expected that the work of planting orchard and other trees will begin soon.

**To Map Samar Forests.**—Graduates of the forest school of the University of the Philippines will undertake a reconnaissance survey of forest resources of Samar island. This will be the first reconnaissance of the island of any consequence that has been undertaken as yet. Although it is known to the bureau of forestry that many valuable varieties of commercial timber are found in Samar, its extent and location has not been looked into to date. It will be the work of the party to prepare a careful and as accurate as possible forest map of the island, showing the location of the stands of the different commercial timbers, their extent, the location of navigable rivers, the best sites for sawmills, and the general characteristics of the timber regions.

**Coffee in Mindanao.**—Governor Gilsheuser is giving considerable attention to the revival and extension of coffee culture in the Lanao lake region. During the past 18 months he has induced one Amai Kurat to set out about 50,000 coffee trees on his place at Saguiaran. The site selected for the plantation is a sheltered valley about three kilometers back from the Overton-Keithley road. The location is considered to be ideal for coffee. As part of the campaign to extend coffee culture in Lanao, the schools have undertaken to propagate 500,000 plants in the school nurseries for general distribution. The majority of the plants will be grown at the Lumbatan Agricultural School.

## CHEMICALS & DYESTUFFS

**Yokohama's Chemical Output.**—According to an investigation made by the Yokohama municipal office, the total amount of chemicals produced in Yokohama last year was 58,864,391 pounds, valued at 435,313 yen. Of sulphuric acid there were 58,333,333 pounds, caustic soda, 484,800 pounds; alum, 47,000 pounds and ammonium sulphate, 9,258 pounds, Compared with the figures of the previous year there was an increase of 145,313 yen in value.

**Sulphuric Acid for Russia.**—The demand for various drugs for war use is brisk, and has caused a remarkable rise in prices. Sulphuric acid is in strongest demand, and to fill a big order placed recently, practically all the big factories in Japan have combined. The price is now 25 per cent higher than at the end of February, or about 25 yen per case.

Mr. Fujii, acting Consul General for Japan in Harbin, reports to the Foreign Office here to the effect that complaints have been heard that along with the increase of the import of Japanese drugs there, a great proportion has been found to be bad in quality. The latest instance is a certain amount of sulphuric acid from Japan and a part of it congealed. As this has happened more than once, the Novosri Dies published an article warning the people that many Japanese drugs were poor and Russian merchants have suffered considerable losses because of the defective quality of these drugs. Stocks have been confiscated and destroyed.

**Japan's Glut of Dyes.**—The enormous rise in the price of dyestuffs has caused dye-making concerns to be started in various places of this country. The making of vegetable dyes, for some time neglected, has been recommenced. Already the making of chemical dyes in black and brown, mainly from carbolic acid, has been started though on a small scale in many provinces. In Fucho, in the province of Bingo, seven or eight dye makers have started shops in one street. The industry has gradually assumed a general character with a tendency toward over-production. These country dye makers insisted at first on 450 yen per 100 *kin*, but this has now been lowered to 300 yen. Calculated on the basis of the present price of the imported carbolic acid, 300 yen per 100 *kin* does not give any profit to the makers, showing that the production is excessive. The makers are said to be in financial difficulties. It is a misconception that a dye famine is probable.

**Phosphorus in Japan.**—The manufacture of red phosphorus, started immediately after the outbreak of war in view of the scarcity of the goods in the market and the consequent rise in the price, has already reached a high state of development with three big manufactories, the foremost of which is the Nippon Electric Chemical Industry Company, of Tokyo, the next largest being the Fuji Electric Chemical Industry Company in Shidzuoka prefecture. There is also the Electric Chemical Industry Works at Takata, Niigata prefecture, using 2,500 tons of phosphate as raw material annually. A new company has been promoted at Sakai, Osaka prefecture, by the Umebachi Iron Works whose new works will begin operations next month, having bought 50 tons of phosphate as raw material from the Mitsui Bussan Kaisha.

**India's Indigo Crop.**—A final forecast of the area under indigo in British India, based on reports received from the provinces, gives a total for 1915-16 of 314,000 acres, or 112 per cent. in excess of the finally revised area of 148,400 acres of last year. The total yield of dye is 39,900 cwt., as against 25,200 cwt., the revised estimate for 1914-15, or an increase of 58 per cent.

The average outturn per acre, however, works out at 14 lb., as against 19 lb. in the preceding year. The increase in area is due to the high price of indigo on account of the war. The season has not, on the whole, been favourable for the crop, except in Madras, where the crop is generally reported to have done well.

## COMPANIES

**Japanese Companies.**—According to the provisions of the Commercial Code now in force, in Japan, trade-companies are of four descriptions; namely, partnerships, limited partnerships, joint-stock companies, and joint-stock limited partnerships.

Under the old legislation trade-companies had no means of attaching security to the debentures they proposed to issue; and consequently they experienced no little inconvenience in raising the necessary funds for the conduct of their business. To remedy this defect, the Law of Trusts for Secured Debentures was, simultaneously with the Railway, Factory, and Mining Mortgage Laws, promulgated in March, 1905; and the Tramway Mortgage Law was promulgated in April, 1909. In virtue of these laws, a company may on the one hand mortgage its property and issue debentures thereon, while on the other, official recognition is given to the establishment of trust companies whose object is to engage in trust business connected with secured debentures. The total amount paid-up of the share-capital or contributions in money of a trust company must be not less than a million *yen*; and its business is under the control of the competent authorities. In the event of a company proposing to issue debentures secured on things, such issue must take place according to the contract concluded under a trust-deed with a trust company; and a company which proposes to invite subscription in a foreign country for its debentures secured on things, may, with the permission of the competent authorities, conclude a contract with a foreign company.

The security on things to be attached to debentures is limited to the following:—

(1) Pledge of movable property;
(2) Pledge of a claim under a written instrument;
(3) Mortgage on immovable property;
(4) Mortgage on vessels;
(5) Mortgage on railways;
(6) Mortgage on factories;
(7) Mortgage on mining;
(8) Mortgage on tramways;
(9) Mortgage on canals.

A company which proposes to invite subscription for its debentures may under a trust-contract authorise a trustee company to make such invitation; and the trustee company may itself take up, or cause a third party to take up, the entire amount of the debentures. The security on things under a trust-contract belongs to the trustee company for the benefit of the entire debenture rights specified in the trust-deed; and the same company is under obligation to reserve and exercise the security right for the benefit of all the debenture-holders.

## TRADE AND COMMERCE

**Japan's New Trade Record.**—The foreign trade of Japan for the first three months this year set a new record in the history of the country. Exports amounted to 217,400,000 yen, while the imports were 175,152,000 yen, making a total of 392.552,000 yen. The figures for the corresponding months during the past five years are as follows:

| | Exports Yen | Imports Yen | Total Yen |
|---|---|---|---|
| 1912 ... | 106,074,000 | 165,702,000 | 271,777,000 |
| 1913 ... | 138,432,000 | 190,474,000 | 328,907,000 |
| 1914 ... | 154,257,000 | 198,973,000 | 353,230,000 |
| 1915 ... | 140,683,000 | 127,237,000 | 207,921,000 |
| 1916 ... | 817,400,000 | 175,152,000 | 392,552,000 |

The exports up to April 10 showed an increase of 54,000,000 yen, compared with the same period last year. Of this increase 34,000,000 yen was shared by 7 kinds of goods only, and of these again raw silk alone showed an increase of 23,000,000 yen. Other increases were in wool cloth and leather goods for war purposes, copper, cotton goods, matches and lumber. Imports increased 33,000,000 yen of which some 20,000,000 yen was shared by raw cotton, wool, oil cake and iron materials, the cotton being responsible for 17,000,000 yen.

Addressing the conference of the Chambers of Commerce session on April 14, and using the above figures as his text Count Okuma said:

"The European war has incidentally given Japan a unique opportunity for economic progress. In only a year and eight months Japan's wealth has been increased by 2,000,000,000 yen. Thanks to the low prices of general commodities and to Japan's specially favorable geographical position, her foreign trade this year, it is estimated, will have a favorable balance of about 250,000,000 yen, while it was 170,000,000 yen last year. The exports, it is estimated, will reach 1,000,000,000 yen. Even the lowest estimate is over 800,000,000 yen. The imports will not exceed 700,000,000 yen. Besides the trade balance, Japan will get also 100,000,000 yen in freight this year.

"It is regrettable that in this time of national economic expansion Japanese manufacturers have resorted to the indiscreet production of inferior goods. The bulk of Indian trade has now trebled since the war began and the future prospects are very promising. But complaints are heard that Japanese goods are not fit for use. Thus the Japanese are about to lose the market once opened. In this respect, the Tokyo goods are generally free from such complaints, both in the quality of the goods and in the way of packing. The Nagoya goods are also not much complained of. But the worst examples are the Osaka goods. As Osaka is an important center of Japan's manufacturing industry, those concerned in business there should bear this in mind and try to prevent this evil."

**Big Drop in Japan's China Trade.**—Japan's China trade has received a serious setback, resulting in a fall in the value of exports and imports by millions of yen. According to the Japanese press this obviously is accounted for by the reaction following the record expansion witnessed during the closing days of March. According to official returns published by the Finance Ministry the exports to China during the opening days of April are valued at 4,631,608 yen, against 6,239,795 yen for the preceding ten days, while imports from that country are valued at 2,536,039 yen, against 3,677,473 yen for the preceding ten days. The exports to China during the opening 10 days of April were distributed as follows:

Manchuria, 413,781; North China, 1,870,887; Central China, 2,329,714; South China, 17,226.

Imports from China during the same 10 days were: From Manchuria, 163,760; North China, 717,693; Central China, 1,252,176; South China, 402,410.

**Nippon Porcelain Extending Plant.**—The Nippon Porcelain Company, of Nagoya, which is under the management of Mr. Magobei Okura and family, has planned an extension which when completed is expected to result in increased annual production to the value of 500,000 yen. The company has had 14 kilns of the intermediate sizes in use, with a force of 3,000 employees. It is therefore proposed that three large kilns be installed, at once to be followed later by seven others, thus doubling the plant in actual operation.

**Japan's Sugar Production.**—The latest, and probably the most accurate estimate, places the total result of Japanese sugar milling this season at 4,900,000 sacks. This is an increase of 200,000 sacks over the estimates on which the new sugar disposition agreement now in force is based. If another and what is usually regarded as a reliable report be given credence, the excess will reach the high figure of 400,000 sacks. The problem now to be solved by sugar men is the disposition of this surplus which must be sold in overseas markets. The market now presents a livelier aspect, buyers being willing to take all the centrifugal offered at 17.55 yen per picul.

**Chefoo Tussah Filatures.**—With the return of the Chinese working hands from their old Chinese New Year festivities at their homes, all the tussah filatures at Chefoo have resumed operation. This is unusual for never in recent years did all the filatures, now numbering 42, resume work without exception immediately after the holidays. Demands for pongee silk from Europe and America have increased by leaps and bounds, and each filature is buzzing away on full time with a long series of orders to fill. Wild cocoons are quoted at 1.5 taels per 1,000 grains, and in some cases as high as 1.8 taels, as against only ½ tael in 1914. Pongee silk yarn has come up gradually since last Summer from 250 taels to 330 taels. Still the net margin of gain for the manufacturers is said to be exceedingly narrow because of the abnormal rise of the cocoons. Exports for last year reached the record amount of 18,159 piculs worth Hk. Tl. 4,359,000, compared with 8,344 piculs worth Hk. Tl. 2,044,000 for 1914. Not only pongee silk yarn but fabric has been more brisk. As against 6-7,000 piculs exported in an average year, the total increased last year to 20,000 piculs valued at Hk. Tl. 7,000,000, an amount greater than the sum total of both silk yarn and silk fabric for an ordinary year put together.

**China Materials for Japan.**—Japan's trade with China is becoming very prosperous. One feature is that the imports from China are growing rapidly, says the Japan Advertiser. There were imports valued at 18,217,000 yen this year up to March 20 from China, including Manchuria. The figures showed an in-

crease of 7,947,000 yen compared with those in the corresponding period last year. The cause of this prosperity is that since certain raw materials from European countries have been scarce owing to the war, Japan has relied upon China for substitutes. Japan has recently made remarkable progress in chemical and other manufacturing industries, and has wanted more raw materials. The list of the imports from China shows that these are mostly raw materials or half-made goods which Japan has to finish. Following is the list of principal items of import from China:

| | Jan.-Feb. 1916 | Jan.-Feb. 1915 |
|---|---|---|
| Cow and buffalo hides ... | Y837,475 | Y411,863 |
| Raw and ginned cotton ... | 2,335,806 | 1,369,173 |
| Hemps & ramie ... ... ... | 540,202 | 244,479 |
| Mineral ores ... ... ... | 536,670 | 22,945 |
| Zinc ... ... ... ... ... | 378,086 | 28,831 |
| Quicksilver ... ... ... ... | 123,315 | — |
| Brass and bronze ... ... | 1,145,361 | — |
| Antimony and sulphide of antimony ... ... ... ... | 1,190,817 | — |

**China Beef for Philippines.**—Proposals for the 6,000,000 pounds of frozen beef for the use of the United States army in the Philippines showed William Katz of Shanghai was the lowest bidder. This is the first time that he has entered the local field. Mr. Katz' bid was $0.095 per pound, f.o.b., steamer, in China, or $0.125 per pound, c.i.f., Manila, United States currency. The Queensland Meat company's bid was $0.1325 per pound c.i.f., Manila; Swift and company bid $0.1148 per pound, f.o.b., New York, and the Western Meat company bid $0.1195, f.o.b., San Francisco. In view of the increase of nearly 100 per cent in the price of coal, bids for which were opened recently, the authorities anticipated a decided increase in the price of beef, and are naturally gratified at receiving proposals at a price even less than that now being paid. Some idea of the advance in freight rates is given by the difference in the price quoted on board vessel in China and the price asked for meat delivered in Manila, the difference on the six million pounds amounting to P360,000.

**Indian Cotton for Japanese Mills.**—Arrangements have been made for the provision of ships to deliver in Japan 1,370,000 bales of cotton from India in 1916, as against 1,230,000 bales in 1915. The present arrangements provide for the carriage of 600,000 bales by the Nippon Yusen Kaisha in ten ships, 450,000 bales by the Osaka Shosen Kaisha in six ships, 80,000 bales by the Peninsular and Oriental Co. in monthly or bi-monthly steamers, and 240,000 bales in chartered ships at the rate of two per month for six months.

## PETROLEUM

**Japan's Gusher Slowing.**—It is reported that the Nippon Oil Company's famous gusher in Kurokawa, Akita Prefecture, having gradually decreased its output, and the prospects of other wells there being far from what is desirable, the company now attaches more importance to the new wells in Hokkaido than to the Kurokawa wells. Upon the discovery of the Kurokawa gusher, the company had entered into a contract for the supply of crude oil for a given amount for three years with the T. K. K. and also with the Furukawa Mines. But as the output in Kurokawa has decreased, the company, bound by the standing contract, has had to supply the oil from Northern Echigo province. Such being the case, the company is now unable to use the crude oil for refining and unless there is a substantial increase in the production from Hokkaido, the supply of home oil tends to decrease. The supply of foreign oil also continues to decrease. The imports in recent years were:—

| | Gallons |
|---|---|
| 1913 ... ... ... ... ... ... | 47,000,000 |
| 1914 ... ... ... ... ... ... | 34,000,000 |
| 1915 ... ... ... ... ... ... | 33,000,000 |

In January this year, the import was only 2,580,000 gallons, the lowest monthly record.

**Australia's Oil Strike.**—Discovery of the first gas and petroleum field on the Continent of Australia has been made near Grafton, on the Clarence River, in the extreme northeastern part of New South Wales.

The oil and gas supply nearest Australia was that discovered in recent years in New Guinea. Australia annually has bought more than $10,000,000 worth of gasoline, benzol, lubricating oils, and other petroleum products from the United States.

## Metal Markets in 1915

The 12 months of 1915 have made up the greatest year that has ever been for the mineral industry, says the Mining Journal of London. Not only will the world's output in some of the most important departments of metal and ore production be the largest ever known, but the profits in many cases are on a scale which may be said without fear of exaggeration to surpass the dreams of avarice. Such statements may seem in this country hyperbole, but their truth will be quickly realised when the figures appearing elsewhere in this issue for the American outputs are studied, and it is exceedingly necessary that all interested in the mineral industry should realise this, more especially our traders, where the parrot-cry is invariably repeated: "There is no business to be done until after the war."

It is computed by the United States Geological Survey that in the principal metals alone there was an increase over 1914 of $250,000,000. Copper showed an improvement of $83,000,000, more than the total value of the whole production of 1914. Spelter showed an increase in value of over $100,000,000, compared with a total value in 1914 of $36,000,000. Increases like these can hardly be realised, so enormous are they, and they ensure immense prosperity and development to these branches of metalliferous mining for a long time to come. Compared with copper and spelter, the improvement of lead, which with an aggregate of $53,000,000 showed an improvement of 22 per cent, seems almost puny, though in ordinary years such an advance would be very remarkable. In the precious metals improvements were shown, though naturally not of a spectacular character.

It is estimated that the gold output increased by 350,000 ozs., giving a total for the year of, approximately, 4,842,000 fine ozs. Silver, in contradiction to what has been published in this country, showed an increase of quite 4,000,000 ozs., giving a total of, roughly, 72,000,000 ozs. The iron and steel revival came too late to permit a record output, yet here values represent an increase of over $27,000,000 on the 1914 figures, and the total ore production is inferior only to 1910 and 1913. The fuel industry does not show much change as regards output, which, with an increase of some 4½ million short tons, shows a gain of about only 1 per cent., but the late development of the trade boom accounts for this condition even more than it does for that of iron and steel.

The coal by-product industry, however, was taken up on a great scale, and a number of large plants were erected for the recovery of benzol and allied products. Consequently there will be considerable values to be allowed for this new industry, to say nothing of its importance in supplying the necessary raw material for the manufacture of dyes and high explosives. The chemical industry generally has, no doubt, received a great impulse, as may be seen by reference to the sulphuric acid trade, where the output of the higher class product was more than doubled.

The production of petroleum added another record year to the long succession of increases which the American industry has recorded. The total output is estimated at 291,400,000 barrels, compared with 265,762,535 barrels in the previous year. There is a considerable branch of lesser products, the development of which has been stimulated by scarcity due to the war. Thus the output of quicksilver increased by 25 per cent, but more than doubled in value. The output, 20,681 flasks, was the largest since 1912, but the value, $1,768,225, the highest in the last forty years. The average San Francisco quotation was $85.50, against $49.05 in the previous year. There has been marked development in the output of antimony, though the figures for the year are not yet available.

The tin output from Seward Peninsula, in Alaska, which was about 200 tons, was the best known. Returns for the rare metal ores are as yet unavailable, but there can be little doubt that they will show a considerable increase. As the "metals" were the earliest to experience the rise in prices, it follows that the Western States have the best showing for the year. Individually, the following States showed prominently: Montana showed an increase of 81 per cent. over the figures of 1914, and the figures ($87,000,000) are, of course, a record. Arizona increased the value of her metal output by over 50 per cent., with a total of $88,551,000. The improvement was mainly due to copper, but there was a large advance in zinc, and a considerable one in lead. Next came Utah with a total value of $55,000,000, an increase of about 50 per cent. on the previous year.

Complete figures for California are not yet to hand, but there is an increase in gold and silver, and a larger one in copper, zinc, and probably petroleum. Colorado is estimated to have yielded $43,100,000, an increase of nearly $10,000,000 on the year. Idaho with $37,780,000 showed an increase of 53 per cent. on the previous year's figures. This, again, was due to increases in copper, lead, and zinc. Nevada with a total of $34,566,000 showed an increase of close on 18 per cent. in value. The output of Alaska is valued at $32,000,000, by far the highest ever recorded. This is chiefly due to the great output of copper, which amounted to 83,850,000 lbs., against 21,450,628 lbs. in 1914. New Mexico improved her returns by about 60 per cent. with a total of $18,277,000, compared with $11,050,000 in 1914.

These results for the leading States of the West showed how widely the wave of prosperity has spread in the mining industry. Owing to the strong position of so many of the great concerns which handle and sell mineral products in the States, there has been no hesitation or inability to take hold of the opportunity which has presented itself. What has been done in the zinc industry is simply revolutionary, and while to-day in Great Britain the output of spelter is perhaps less than it was before the war, when it approximated to 60,000 tons, the United States capacity has been practically doubled, with a potential output of 650,000 tons in the coming year.

It is very easy to say the United States has had all the cards, but there has been no hesitation in playing them to score as quickly as possible, while over here there is general disposition to "wait and see," and while there is a lot of talk about what is being arranged and will be done in the future, objectively there is little, if any, progress to be recorded, except perhaps in the very diminutive department of the rare metals. Let our traders honestly face what America has done, and then say if they are satisfied with the leading which is being given to the mineral industry under the British flag.

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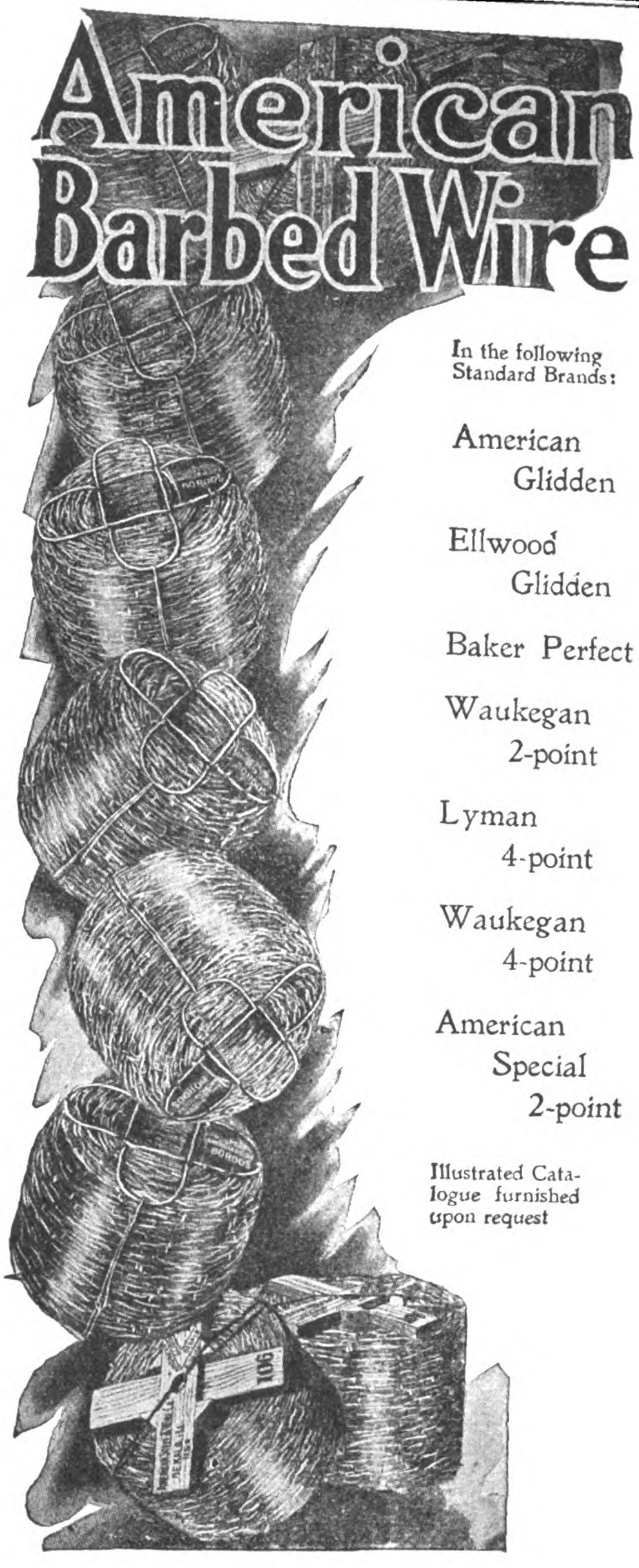


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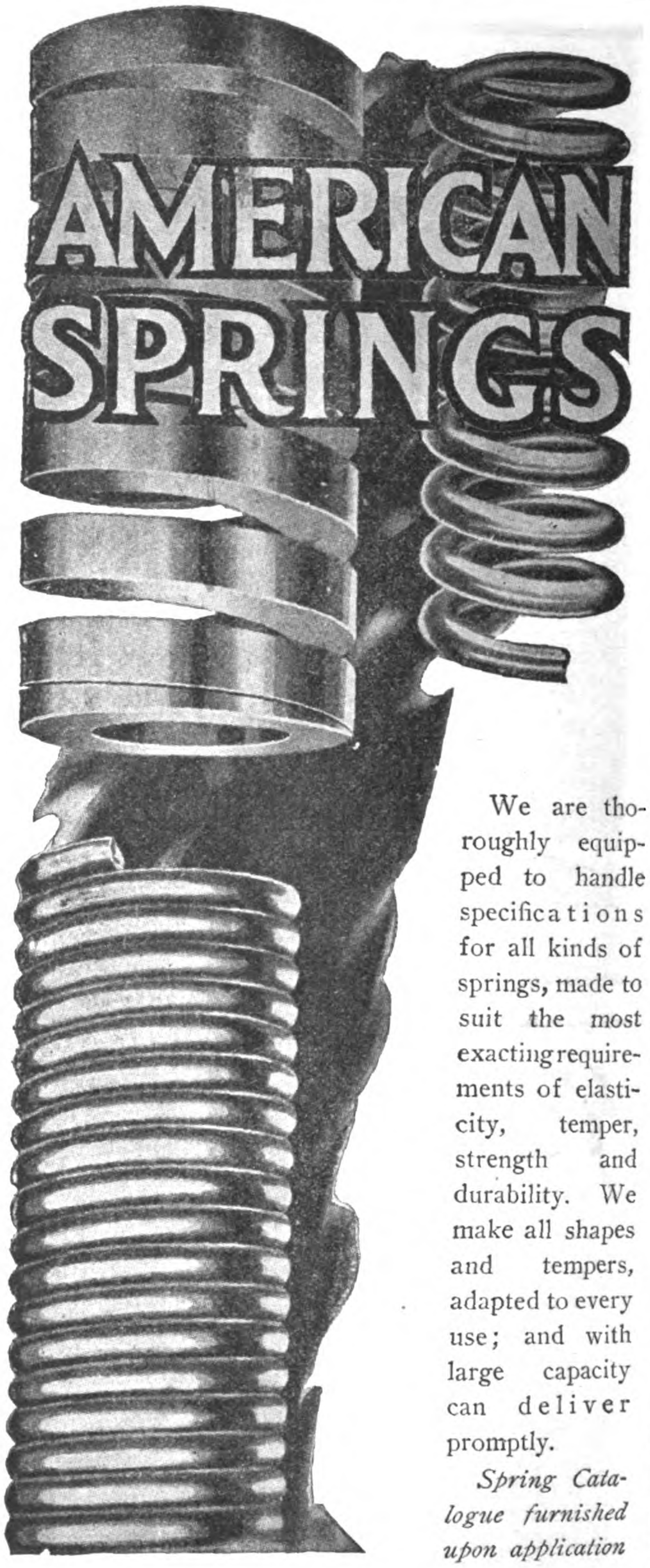


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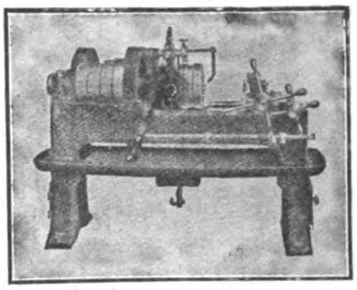

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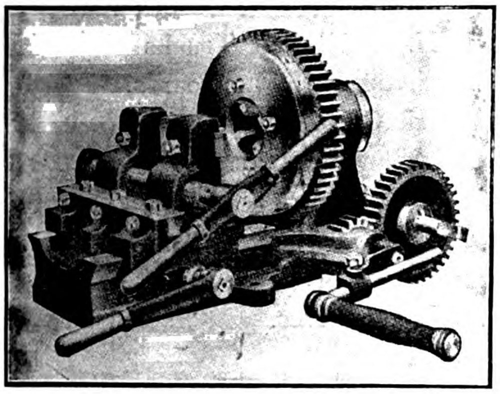

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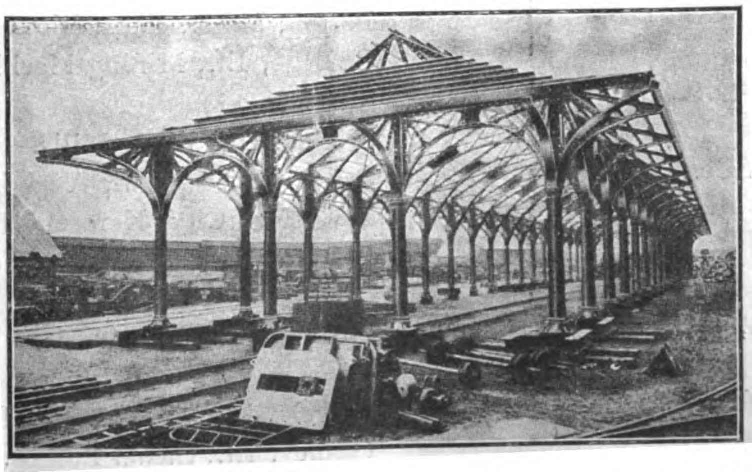

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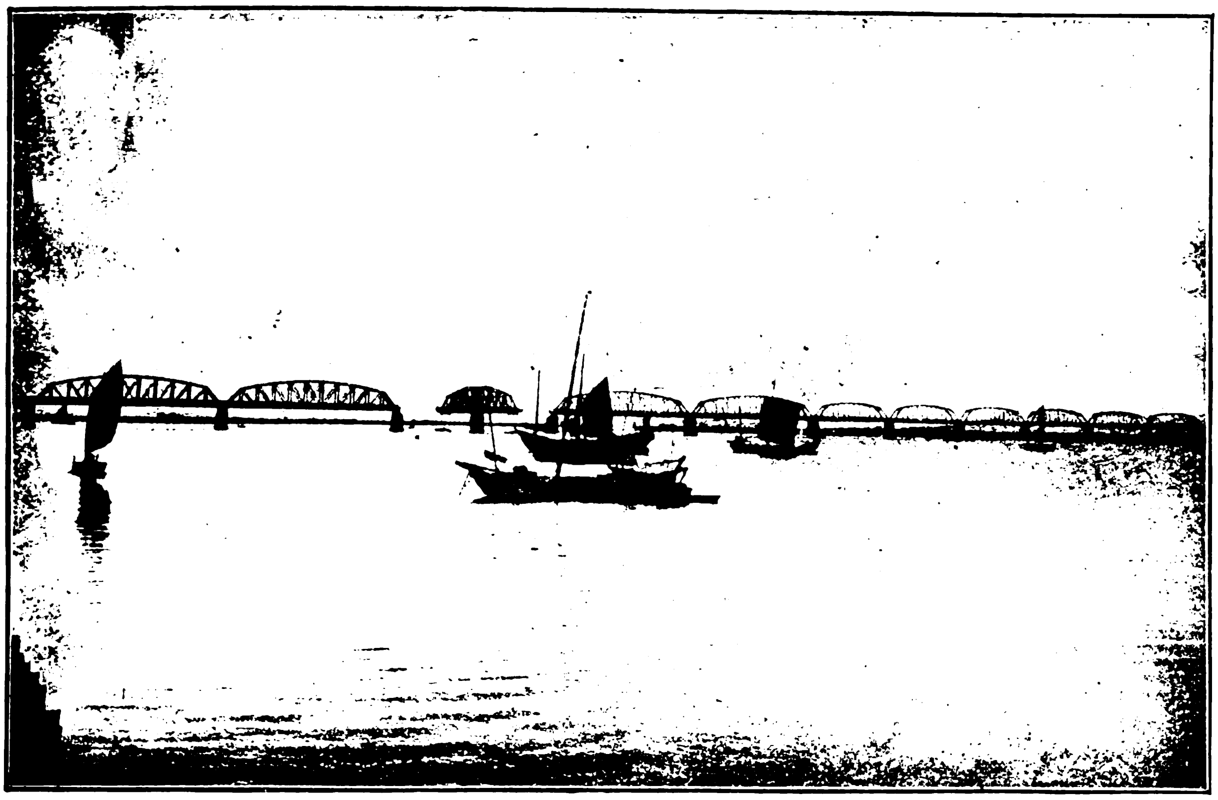

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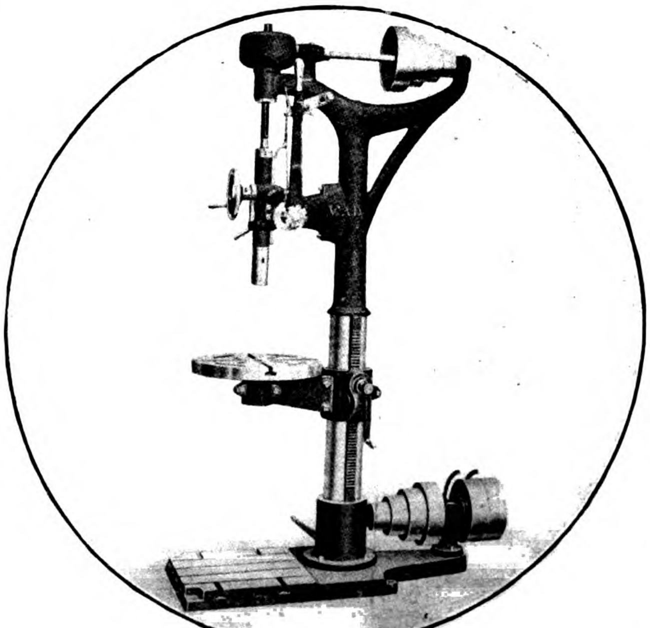

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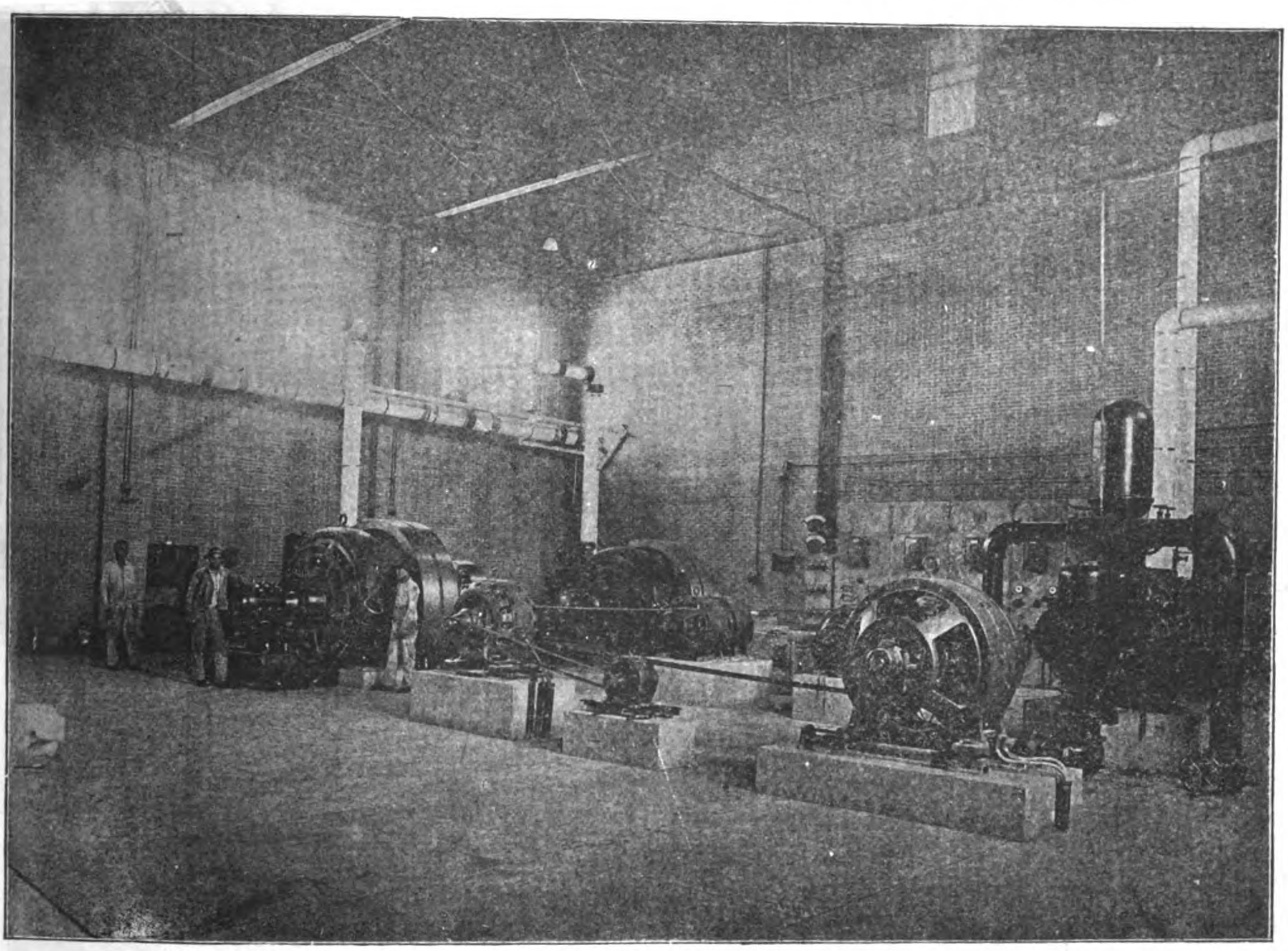

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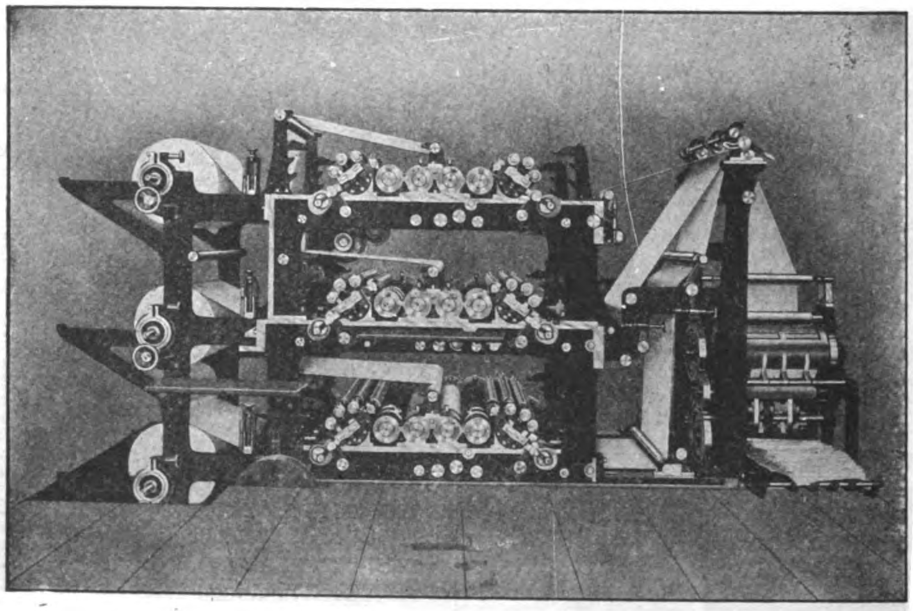

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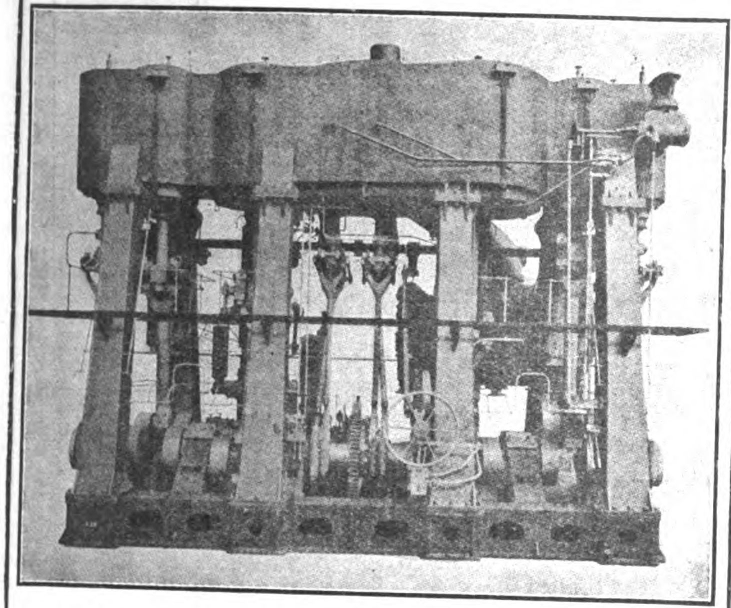

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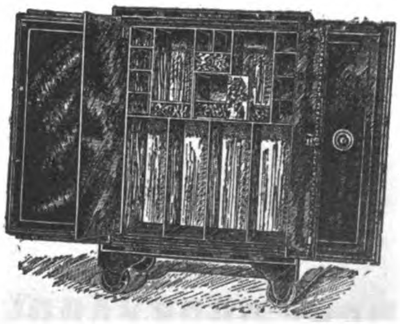

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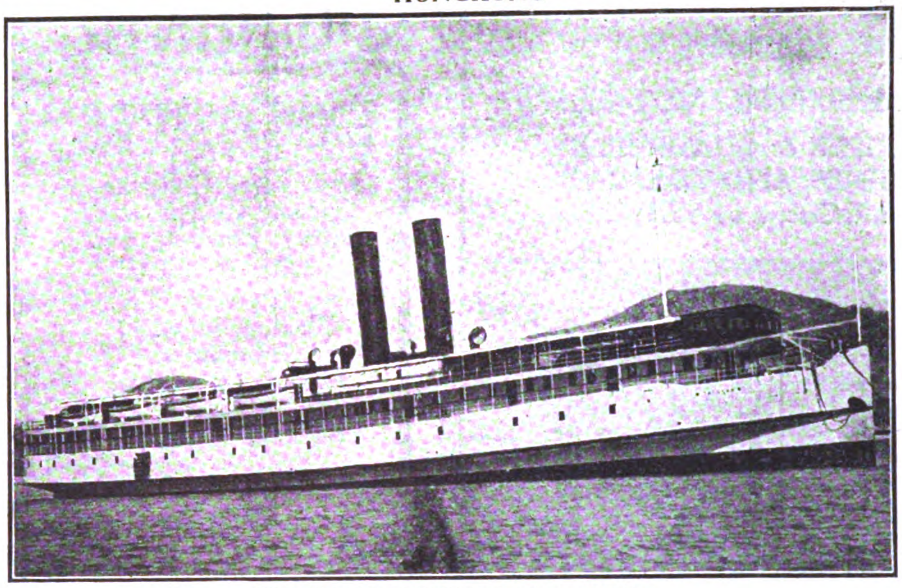

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|---|---|---|---|---|---|
| | | | | Springs | Neaps |
| KOWLOON | Feet | Feet | Feet | Feet | Feet |
| No. 1 Dock, Kowloon | 700 | 86 ft. top / 70 ft. bottom | 30′ | 7′ 6″ | 3 |
| No. 2 Dock, Kowloon | 371 | 74′ | 18′ 6″ | 7′ 6″ | —— |
| No. 3 Dock, Kowloon | 264 | 49′ 3″ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 1, Kowloon | 240 | 60′ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 2, Kowloon | 220 | 60′ | 12′ | 7′ 6″ | —— |
| TAI-KOK-TSUI | | | | | |
| Cosmopolitan Dock | 466 | 85′ 6″ | 20′ | 7′ 6″ | —— |
| ABERDEEN | | | | | |
| Hope Dock | 430 | 84′ | 23′ | 7′ 6″ | —— |
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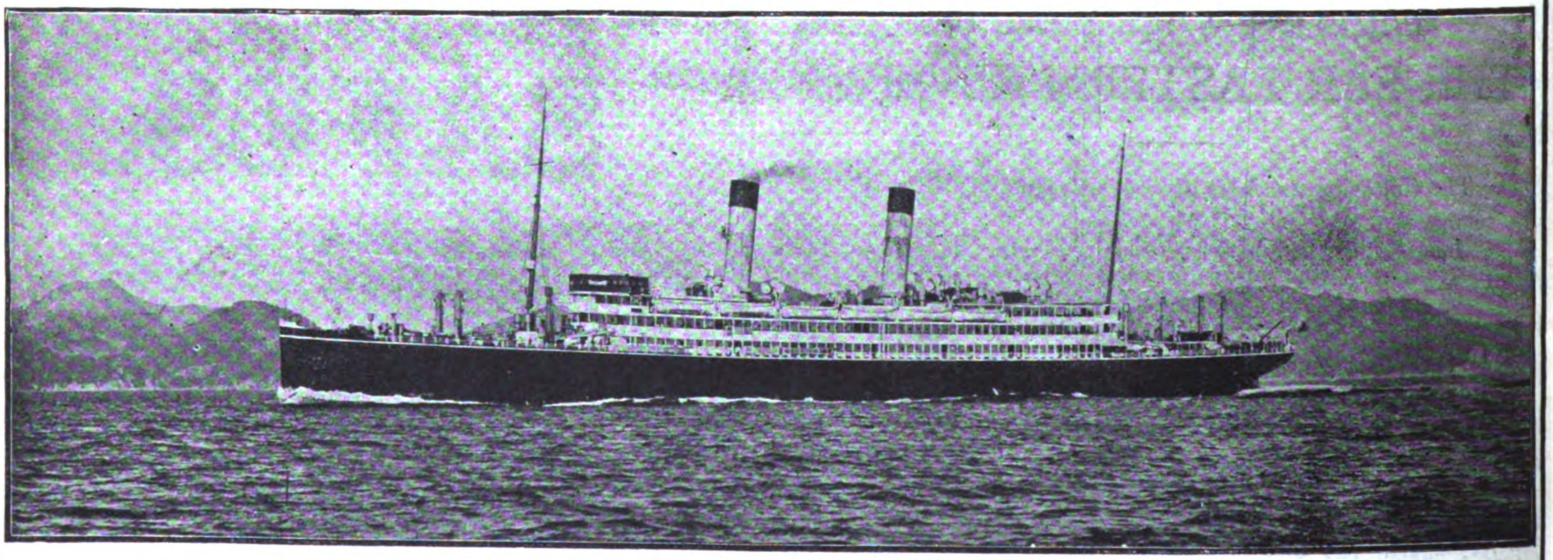

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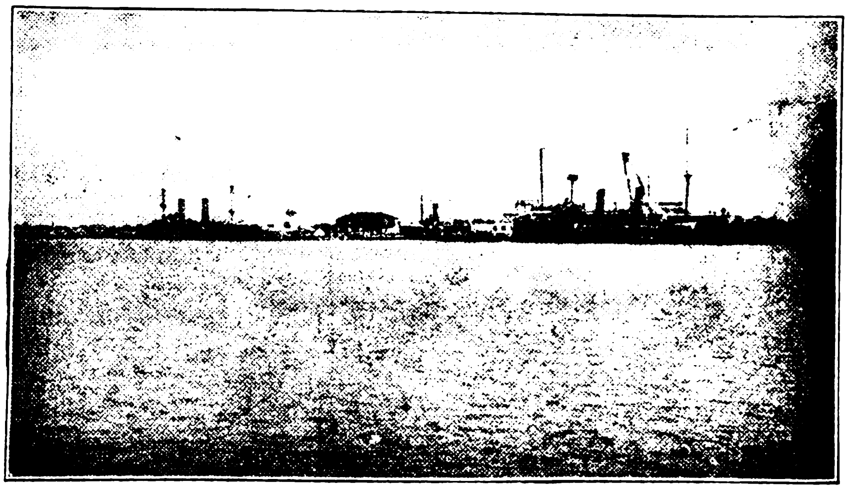

VIEW OF INTERNATIONAL DOCK
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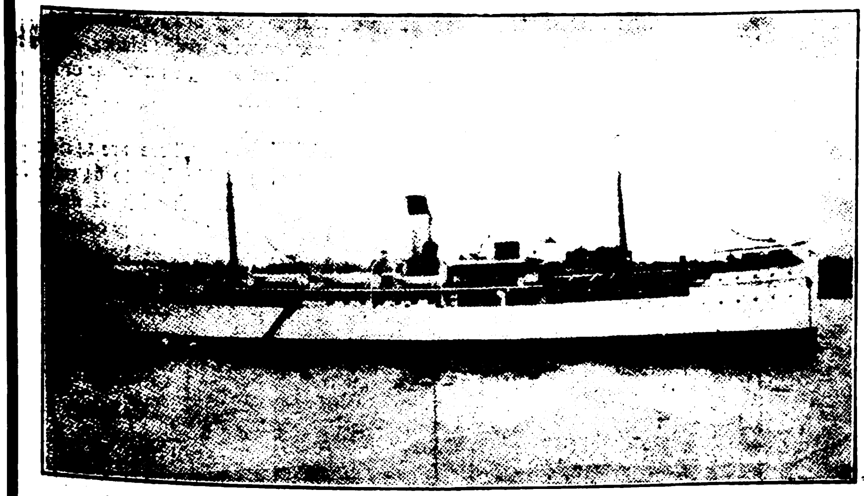

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| Tunkadoo Dock . | [illegible] " | 67 " | 18 " |

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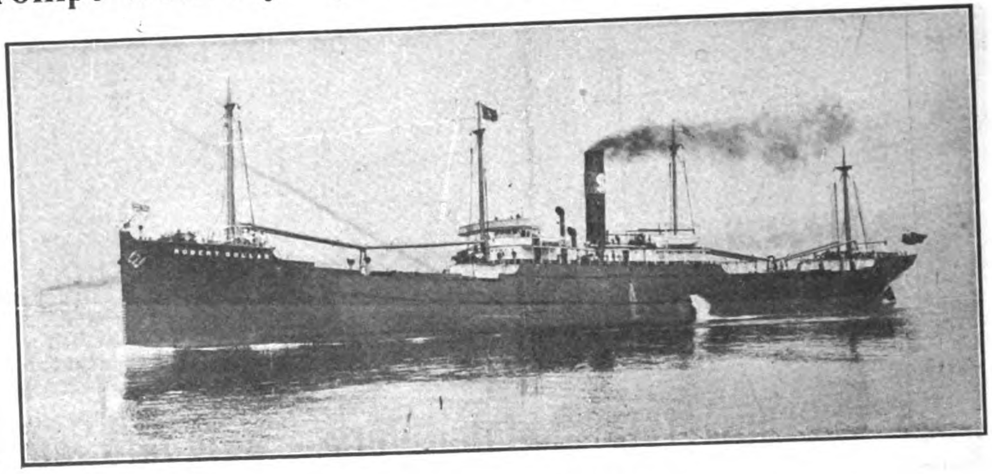

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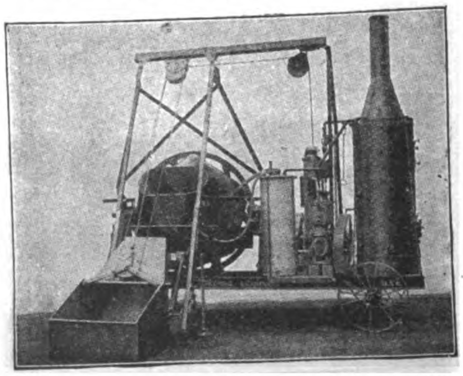

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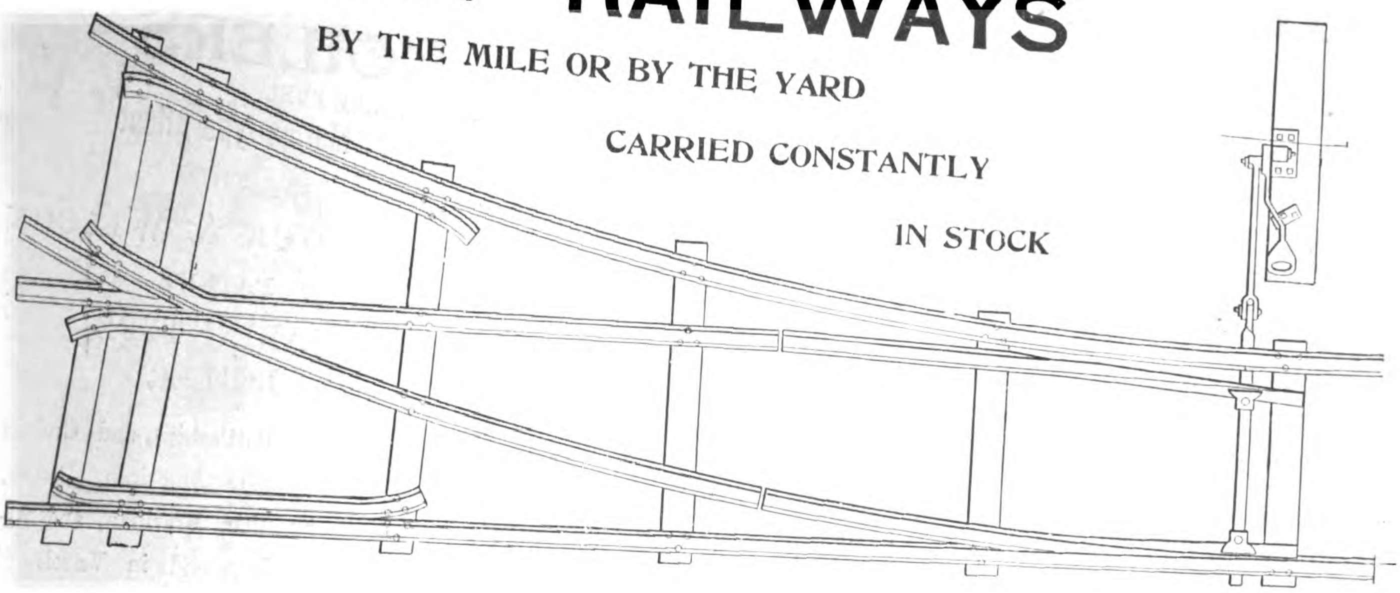

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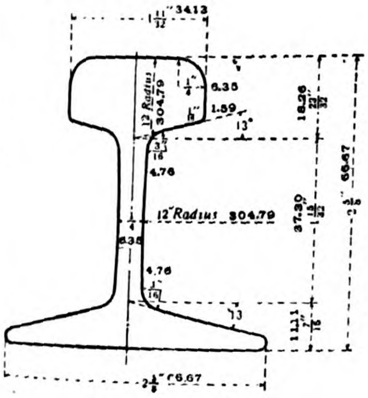

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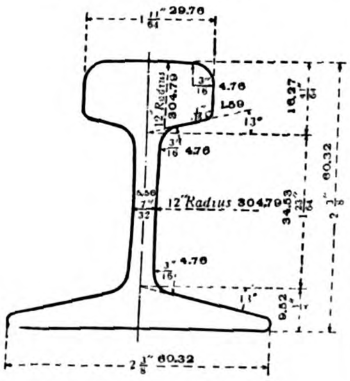

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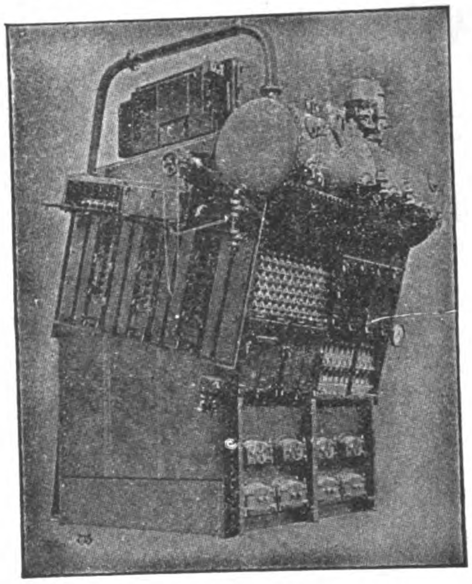

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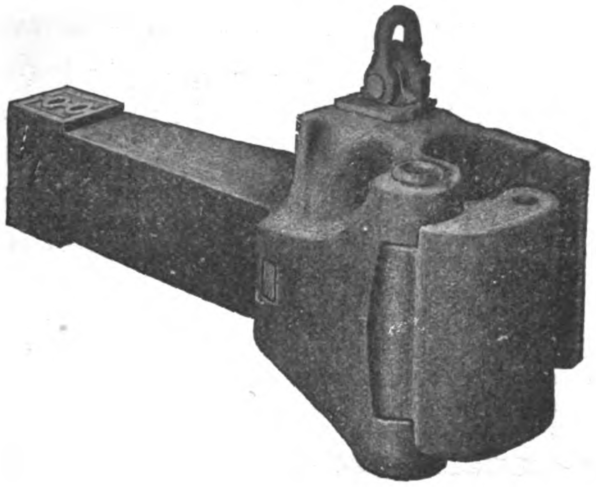

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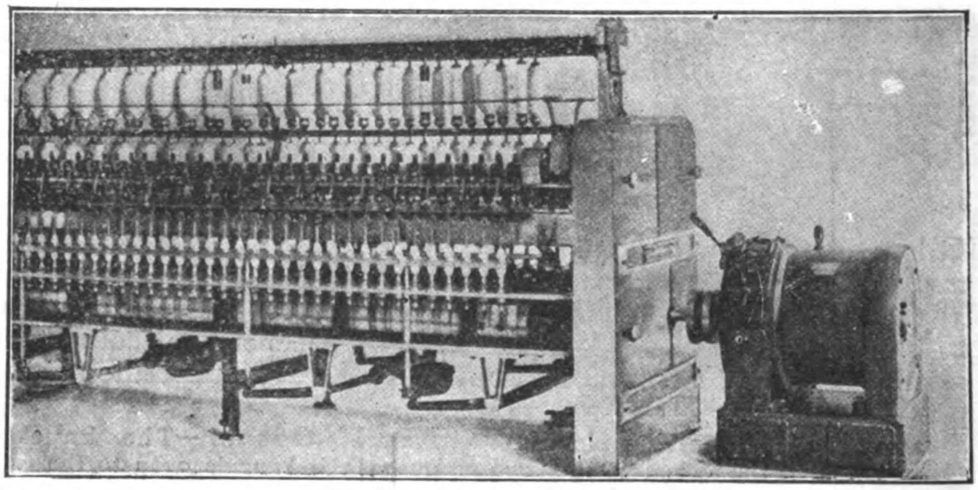

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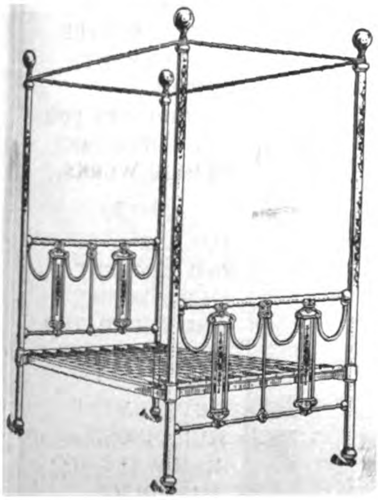

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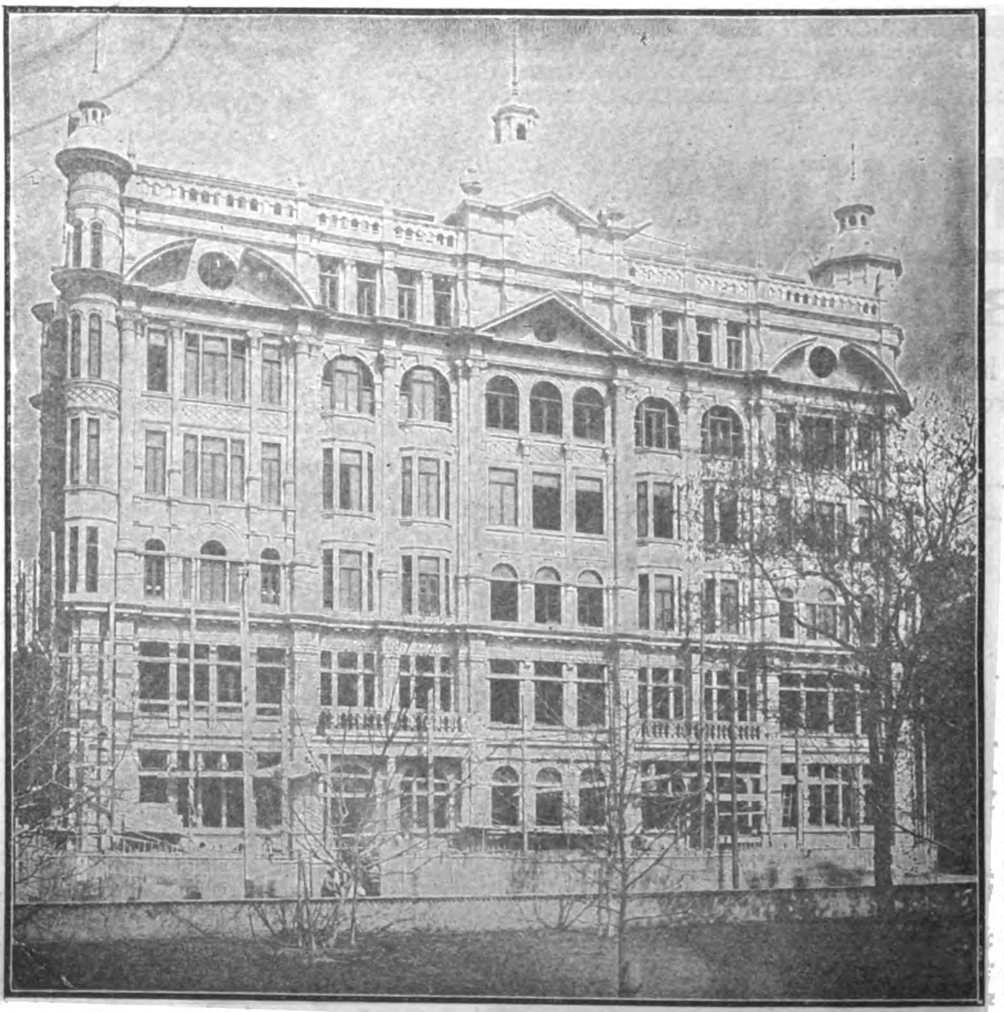

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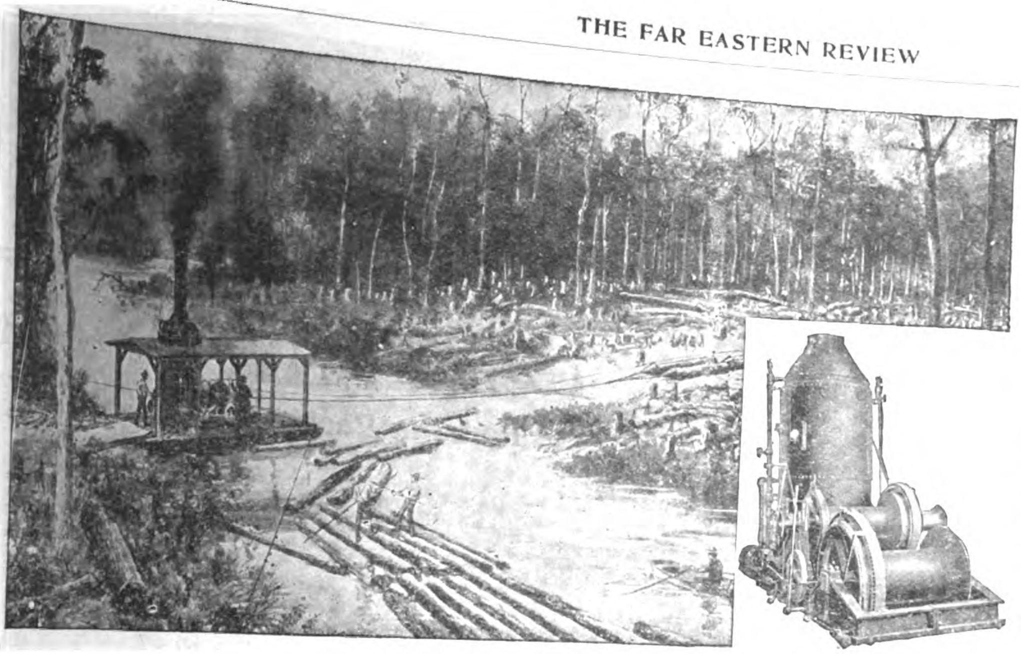

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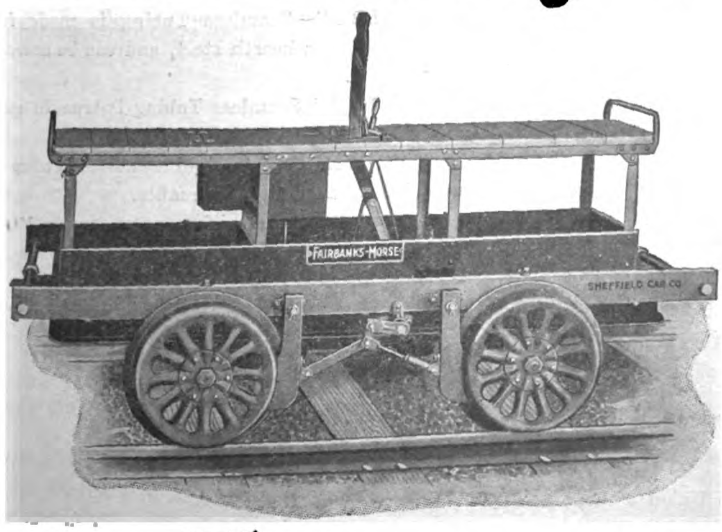


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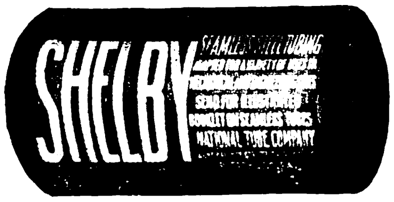


**CONTROL OF QUALITY**—"SHELBY" Seamless Tubing is made under the supervision of one organization, insuring uniform quality.

**SIZES AND SHAPES**—"SHELBY" Seamless Tubing is made in several hundred sizes and shapes—and special shapes and sizes to specification.

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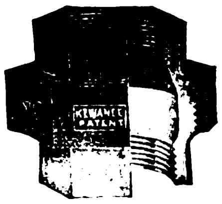

The Air-tested Union with no Inserted Parts
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**Five Special Advantages of the "KEWANEE" Union**

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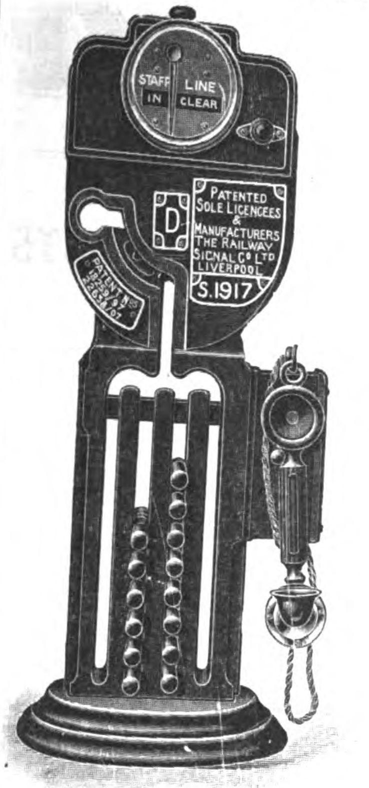


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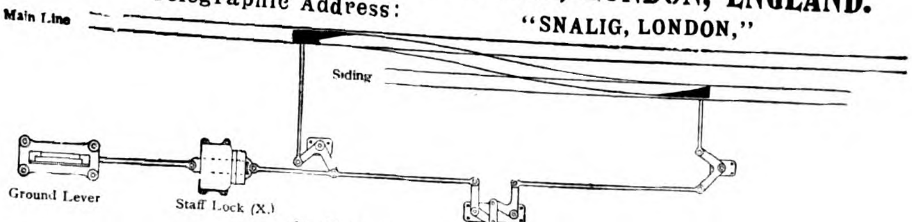
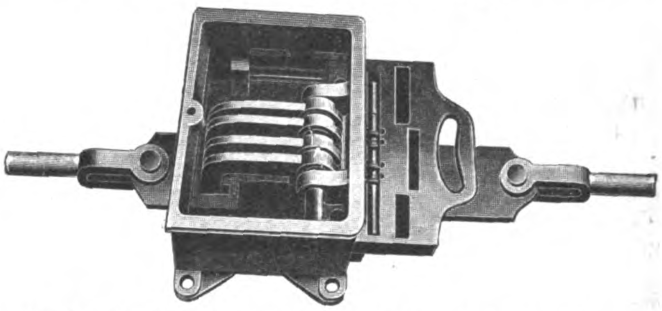



**Staff Lock for Outlying Siding.**

When a train is required to enter or leave an outlying siding the staff is placed in the top slide of the lock, which is then pushed in.
The lower slide, which is attached to the ground lever, is released, thus allowing the ground lever to be operated.
When the points are set for the siding the train staff is securely locked in the box.



**Staff Lock (X) with cover removed, for Outlying Sidings.**

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Schemes to suit special conditions of traffic working will be submitted on receipt of FULL Particulars.



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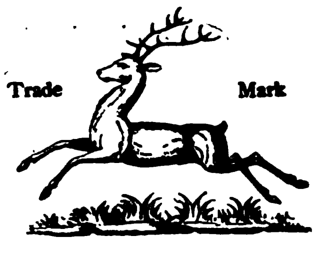
Trade  Mark

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**Official Government Depository**

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Buys and sells drafts on London, Paris, Madrid, Barcelona, Berlin, Hamburg, Sydney, New York, San Francisco, Chicago, Hongkong, Yokohama, Kobe, Nagasaki and all other principal cities.

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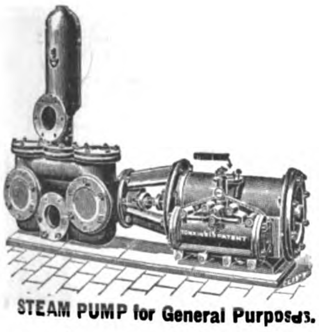
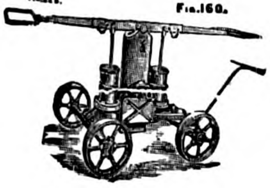
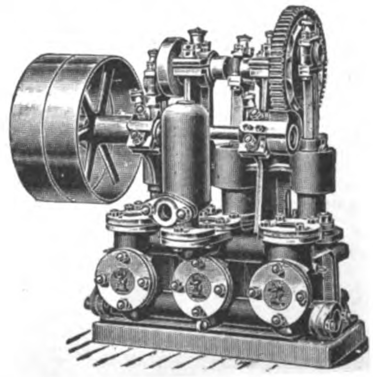


STEAM PUMP for General Purposes.

Fig. 22b.

Fig. 160.





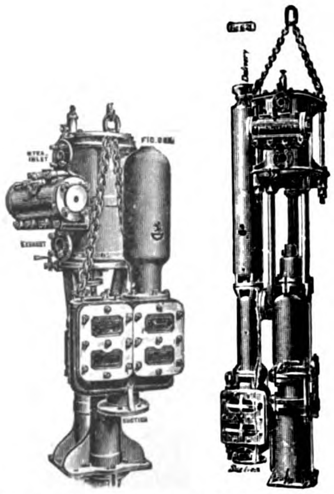


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Fig. 191.

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Fig. 188.

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Take these facts into consideration and let them influence you when placing your next order.

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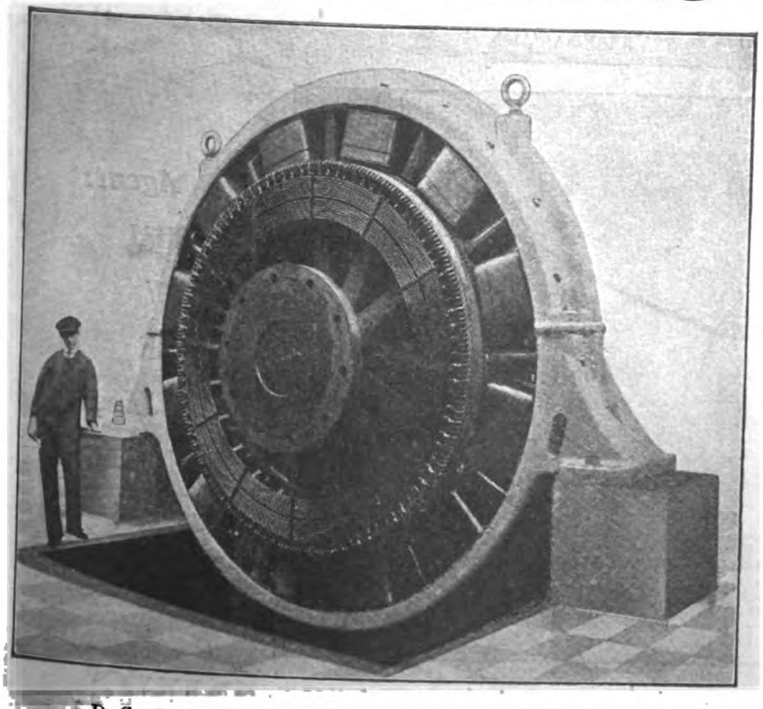

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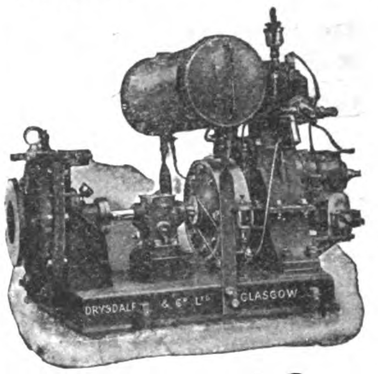


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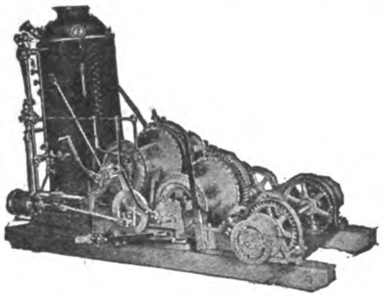

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Consulting Engineers, Specialists in Excavating Problems, Machinery and methods recommended.
Drainage, stripping, open-cut mining, dredging.
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**A Pyle-National Electric Headlight gives a Great Beam of Clear, Strong, Penetrating Light that distinctly illuminates the Track for Half a Mile Ahead of the Locomotive, enabling the Engine Driver to maintain Schedules, verify Signals and avoid Accidents.**

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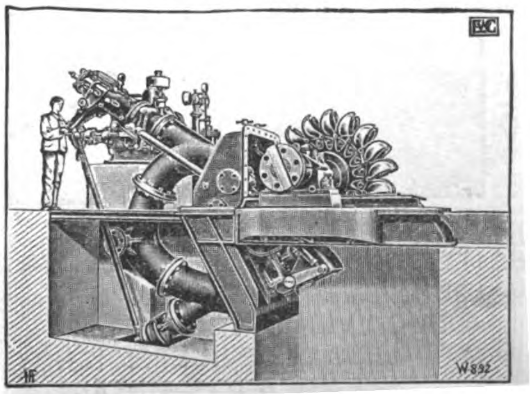

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**Water-Turbines**

Total capacity of the turbines on order or executed up to the end of 1915:

**3,068,603 h.p.**

TURBO-PUMPS

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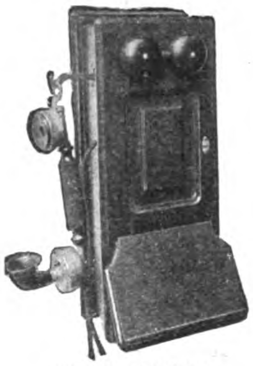

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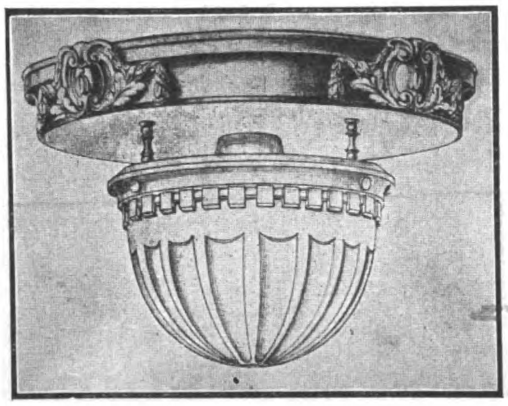

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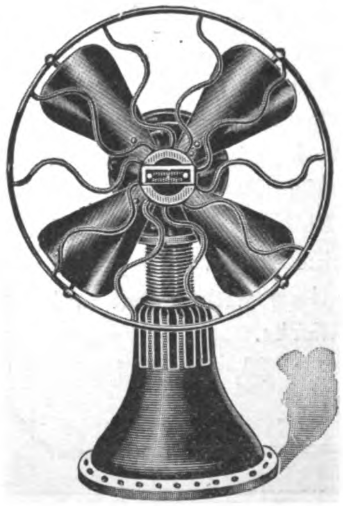

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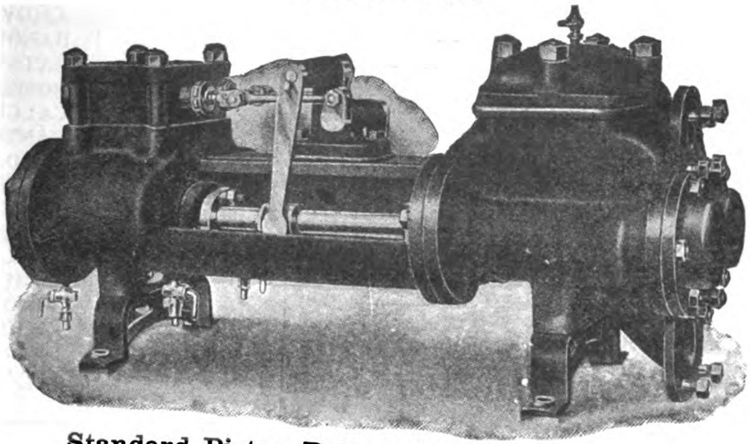

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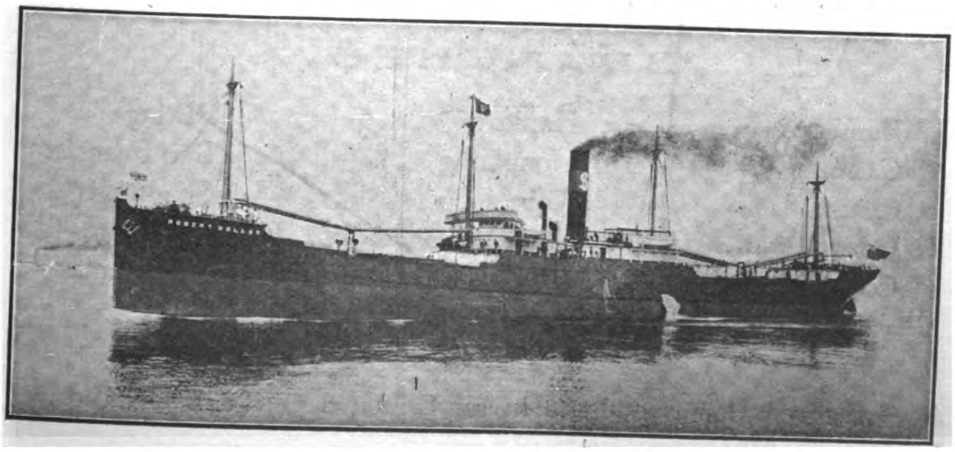

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—Silver, .. .. .. .. 18,000,000 $33,000,000
Reserve liability of Proprietors, .. .. .. .. $15,000,000

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*Capital Paid up ........................ „ 30,000,000*
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**SHARE CAPITAL ........ TLS. 7,500,000**

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(Specially authorised by Presidential Mandates of April 7th, 1914 and October 31st, 1915 making the Bank of Communications a National Bank).

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# THE BANK OF CHINA

## Government Bank

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**Authorised Capital: $60,000,000.00**
**Paid up Capital: $10,000,000.00**

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Interest allowed on current accounts and Fixed Deposits. Terms on application. Every description of Banking business transacted; loans granted on approved securities. Special facilities for Home exchange.

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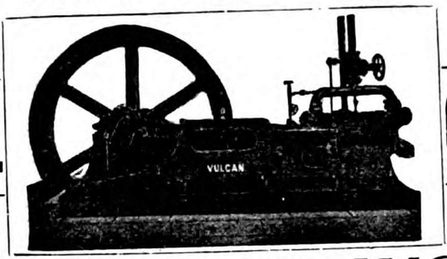


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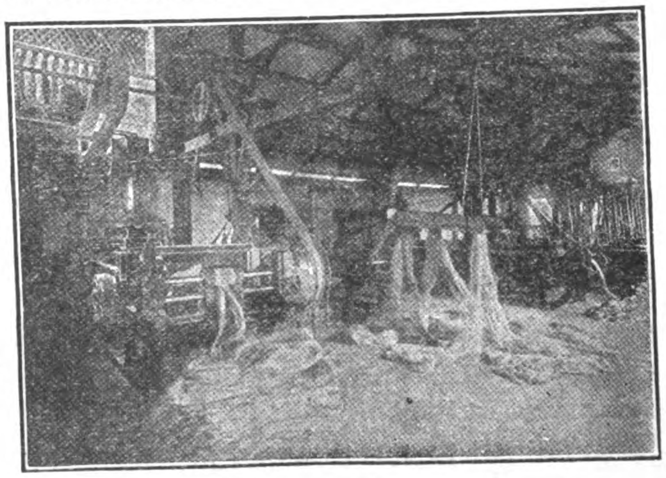

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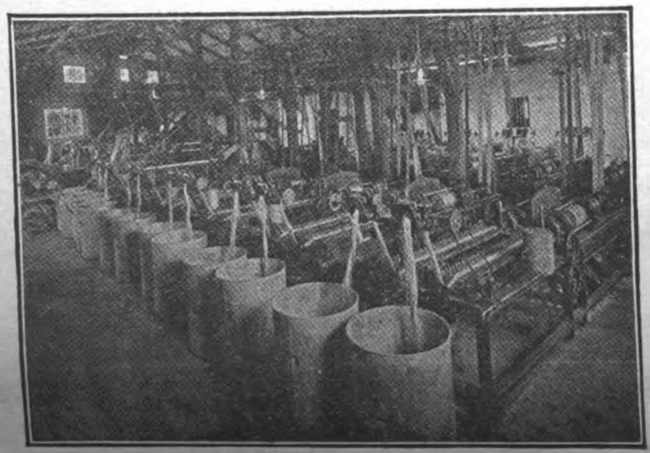

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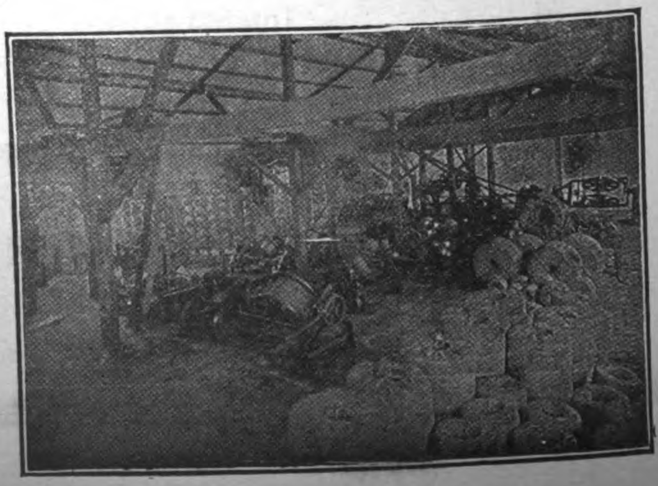

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# 77.7 PER CENT INCREASED LOADS

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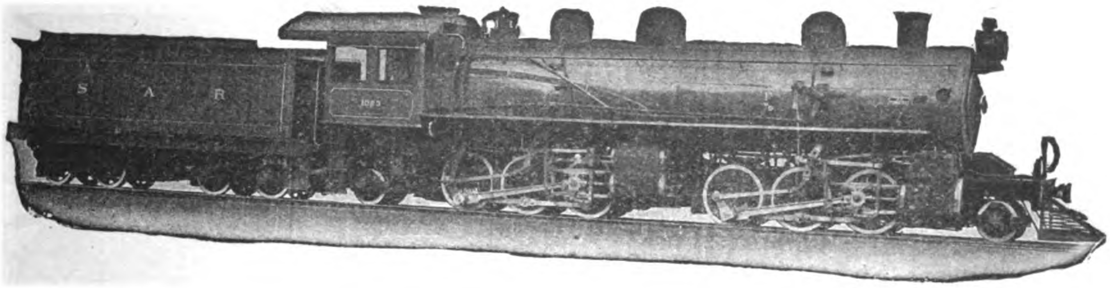

Total Weight of Engine, 230,000 pounds; Weight on Driving Wheels 196,000 pounds; Diameter of Driving Wheels 46" Boiler Pressure 200 pounds; Cylinders 18" and 28½"×26"; Tractive Power, 47,700 pounds.

Mallets have greatly simplified the problem of handling the large volume of goods traffic between Witbank and Germiston, on the South African Railways.

These Mallet locomotives are hauling trains of 1,600 tons gross as against 900 tons gross hauled by the locomotives which they replaced, an increase of 77.7 per cent.

The ruling grade is one per cent and in four places there are continuous up-grades of from 3 to 5 miles. The loads hauled probably constitute a record for a 3 ft. 6 in. gauge on this grade. They have eliminated congestion, and reduced the hours of labor of the trainmen.

These Mallet locomotives are the result of years of study, experiment and development. They include only features which have been thoroughly proven in service, skillfully combined in proportions known to be correct.

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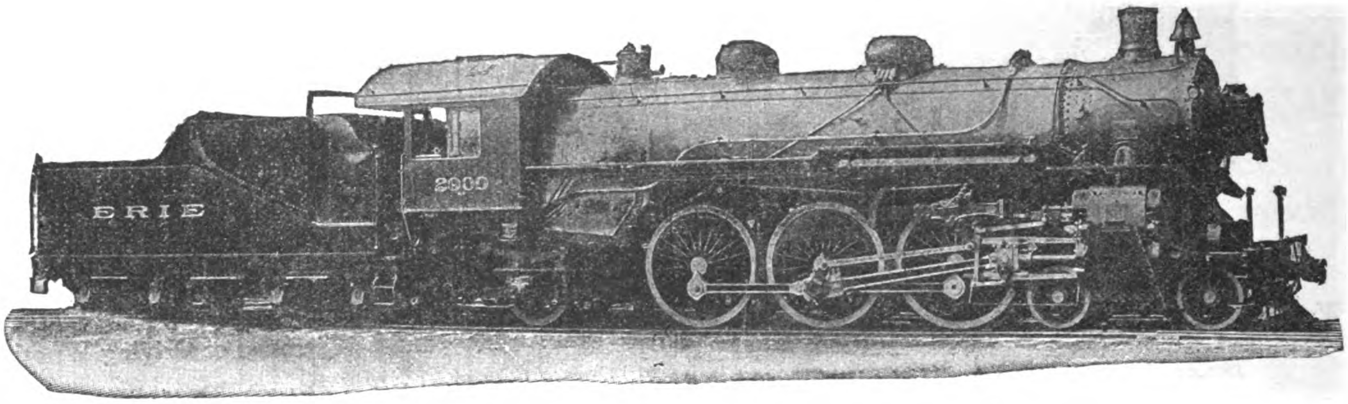
**Builders of all Classes of Motive Power. Capacity 720 to 1,000 per year**




**Heavy Pacific Type Built for Erie Railroad**

## LIMA HEAVY PACIFIC TYPE

This locomotive combines the latest improvements and developments in design, materials and economic devices for saving fuel, etc.

Built for the **ERIE RAILROAD** for heavy fast passenger service where maximum capacity was desired.

GENERAL DIMENSIONS AS FOLLOWS:

Cylinders, 27 × 28 inches
Driving wheel base, 14 ft.
Total Wheel base, 36 ft. 2 inches
Drivers, diameter 79 inches
Boiler, straight locomotive type
Boiler diameter 79 inches

Weight on drivers, 176,000 lbs.
Total Weight, 287,000 lbs.
Tractive Power, 40,700 lbs.
Factor Adhesion, 4.24
Superheater, Schmidt
Valve motion, Baker

Our **PLANT** is equipped with the latest and most improved machinery, which enables us to build any type or size locomotive required.

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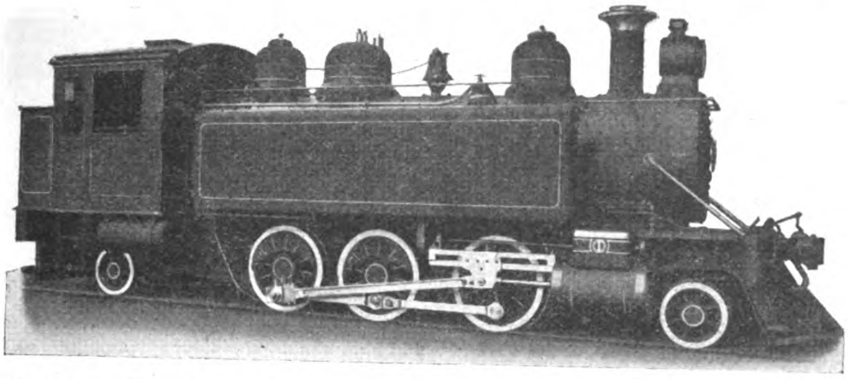
# TANK LOCOMOTIVES

Locomotives with the 2-6-2 wheel arrangement, having saddle or side tanks, are fitted for switching or short-haul work, and also for industrial service about mills and manufacturing plants. These engines ride well on uneven tracks, and can safely enter sharp curves and switches when running in either direction. They are also suitable for general road service, where it is not convenient to turn the engine at the end of each run.



SIX-COUPLED TANK LOCOMOTIVE, TUNG YU MINING Co., CHINA.

Cylinders, 16"×24"
Driving-wheels, diameter, 44"
Steam pressure, 180 lbs.
Grate area, 21 sq. ft.
Total heating surface, 1,460 sq. ft.
Weight on driving-wheels, 96,500 lbs.
Weight, total engine, 122,500 lbs.
Tractive force, 21,400 lbs.

The locomotive illustrated above is designed to haul 400 tons (of 2240 pounds) of cars and lading up a straight grade of one per cent. 9,000 feet long, at a speed of 15 miles per hour; the assumed frictional resistance being 9 pounds per ton. The tank capacity is 1,600 gallons, and the fuel capacity 1-½ tons. The equipment includes automatic air brakes, with train connections; and automatic couplers at each end. The steam distribution is controlled by balanced slide valves, which are driven by the Stephensen link motion. The locomotive throughout is simple in construction, and is strongly built for heavy service.

The Baldwin Locomotive Works have built a large number of locomotives of this general design for service in the United States, and also for export. These engines are particularly well fitted for work on Chinese railways, where runs are short and train loads are comparatively light.

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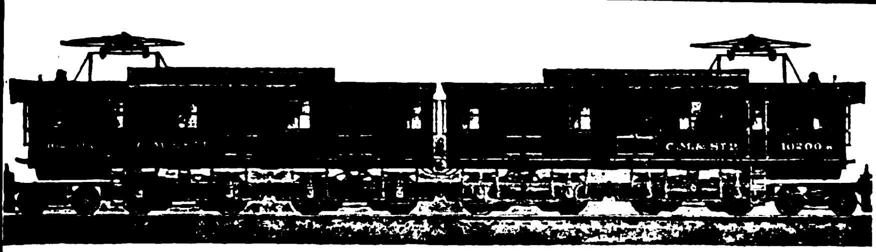
上海　天津　漢口　北京

# General Electric Company

## Schenectady, N. Y., U. S. A.



## An Epoch Making Locomotive

The twenty-one G-E trans-continental type locomotives for the Chicago, Milwaukee & St. Paul Railway mark a decisive step in the electrification of steam roads.

Each locomotive weighs 260 tons and is equipped with eight G-E motors having a rated capacity of 3000 h.p. continuously and 3440 h.p. for one hour.

These locomotives will be operated at 3000 volts direct current.

The initial order for twelve G-E locomotives was for the first division of 113 miles between Three Forks and Deer Lodge, Montana. Three more engine divisions will be electrified in the near future and complete plans cover main line electrification to the Pacific Coast.

The selection of the General Electric Company's high-voltage direct current equipment for a project of this magnitude is a significant commentary on the past performance of G-E high-voltage direct current equipment.

5704

### FAR EASTERN REPRESENTATIVES

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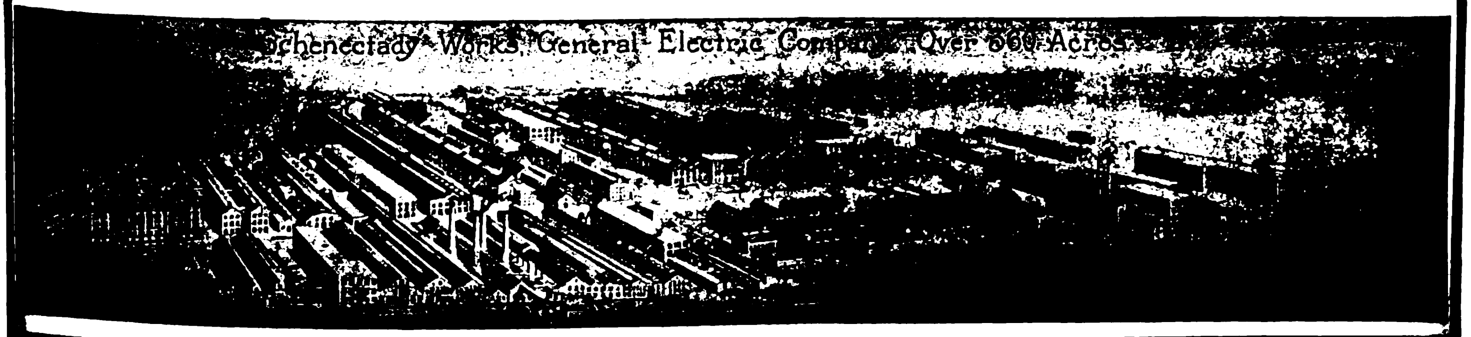

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Every ounce of the whole load of your factory comes on the Cylinder and Valves and the best Lubrication you can give them, is not too good.

Idle engines earn no money, but are a constant source of expense. High engine efficiency is only obtained by perfect lubrication with Standard Lubricants.

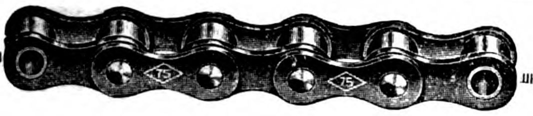
Although a High Class Oil costs more initially, in the end it is far cheaper, its economical life is longer, its Lubricating qualities greater, and its consumption less.

Railway Lubrication has always been the cause of endless worry to the engineer. The best oils should be used, as exhaustive tests have proved that the cost of coal required to overcome the friction was 3 times the cost of a Cheap Lubricant, and the cost to renew the metal was 6 times the cost of a Cheap Lubricant.

# STANDARD OIL COMPANY OF NEW YORK

## Lubricating Oil Department

## Dealers and Branches all over China



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for
# CYCLES

DIAMOND cycle chains are accurately manufactured of the highest quality steels, which are heat treated by a scientific and improved method. They are strong and dependable—being used by a majority of the American bicycle manufacturers as standard equipment.

Diamond roller cycle chains are furnished both ½ in. and 1 in. Pitch, and we also have a complete line of 1 in. Pitch block chains for cycles.

We are also prepared to serve the trade promptly with chains for motorcycles, automobiles, motor trucks and Power Transmission.

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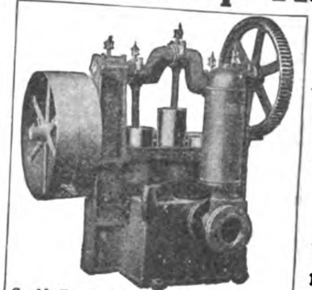
**Correspondence solicited in any language.**
**Catalogue, samples and prices on application.**

## Diamond Chain & Mfg. Company
Indianapolis, Indiana
U. S. A.

**Cable Code: A. B. C. 4th & 5th Editions**
**Cable Address: "Chain" Indianapolis**



# This Pump Has Never Failed a Day in 12 Years


Goulds Figure 957 — *Type of Pump installed in Bayama waterworks.*

It may sound a little like boasting to claim that the faculty of working faithfully for a good many years is possessed by

**GOULDS PUMPS FOR EVERY SERVICE**

but such, however, is their record.

We have record of a great many of our pumps which have been in operation from fifteen to twenty-five years and still giving satisfactory service.

The pump mentioned above is a Goulds Figure 957—7" x 8" Triplex Pump installed in the waterworks at Bayama, Cuba. During the twelve years it has been in operation it has never missed a day nor required any repairs with the exception of the valves.

This is an illustration of the kind of service you will get if you use Goulds Pumps.

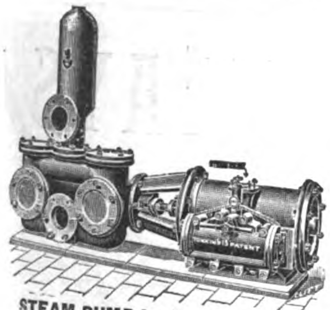
Bulletins on Request.

**THE GOULDS MFG. CO.**
**Seneca Falls, New York, U.S.A.**
***Cable Address: "Glavis Seneca Falls"***

*Waterworks and Tank at Bayama, Cuba, where Goulds 957 is installed.*

**China Agents—Andersen Meyer & Co., Ltd., Shanghai**



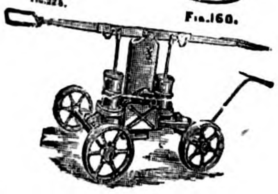

STEAM PUMP for General Purposes.

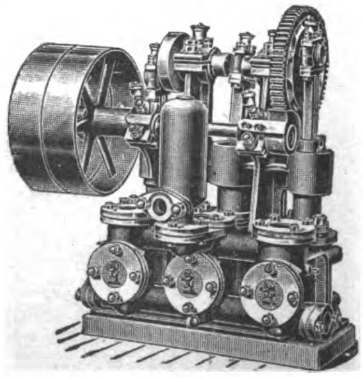
# WE MANUFACTURE
# PUMPS
## FOR EVERY PURPOSE

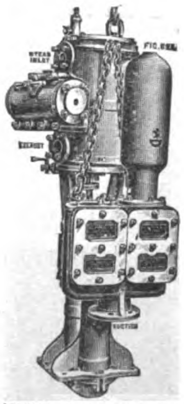
To be worked by HAND, STEAM, BELT, WIND, WATER or ELECTRIC POWER.

FIG. 325.

FIG. 160.







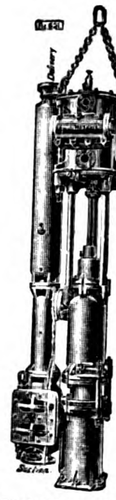

SINKING PUMPS for COLLIERIES, MINES, Etc.

FIG. 191.

*Write for "Eastern" List.*

# JOSEPH EVANS & SONS
(WOLVERHAMPTON) LTD.
CULWELL WORKS,
**WOLVERHAMPTON. ENGLAND.**

FIG. 188.

# FRANK L. STRONG MACHINERY CO.

Cable address LANDSTRONG — MANILA, P. I. — 64-68 Echague, P. O. Box 772

**CONSULTING ENGINEERS & CONTRACTORS**

**Exclusive Agents in the Philippines for:**

GENERAL ELECTRIC COMPANY,
Electrical Supplies and Apparatus

PELTON WATER WHEEL COMPANY,
Water Wheels

NILES-BEMENT-POND COMPANY,
Lathes, Hoists

CHICAGO PNEUMATIC TOOL COMPANY,
Air Tools, Air Compressors and Accessories

AMERICAN TOOL WORKS COMPANY,
Lathes, Planers, Shapers, Radial Drills

AMERICAN BLOWER COMPANY,
Blowers, Exhaust Fans, Ventilating Units

BROWN & SHARPE MANUFACTURING CO.,
Milling, Grinding Machines, Tools

EAGLE & GLOBE STEEL COMPANY,
Tool Steel

LIDGERWOOD MANUFACTURING CO.,
Logging Engines

TRUSSED CONCRETE STEEL COMPANY,
"Kahn" System Building Products

OTIS ELEVATOR COMPANY,
Passenger & Freight Elevators

YORK MANUFACTURING COMPANY,
Ice Machines

BABCOCK & WILCOX COMPANY,
Water Tube Boilers

AMERICAN LAUNDRY MACHINERY COMPANY,
Laundry Machinery

AMES IRON WORKS,
Steam Engines and Boilers

J. A. FAY & EGAN COMPANY,
Band Saw Mills, Wood Working Machinery

B. F. GOODRICH & COMPANY,
Mechanical Rubber Goods

YALE & TOWNE MANUFACTURING COMPANY,
Chain Blocks & Hoists

CHAS. A. SCHIEREN COMPANY,
Waterproof Leather Belting

HOOVEN-OWENS RENTSCHLER COMPANY,
Hamilton-Corliss Engines

KELLOGG SWITCHBOARD & SUPPLY CO.
Telephone Apparatus and Accessories

GARLOCK PACKING COMPANY

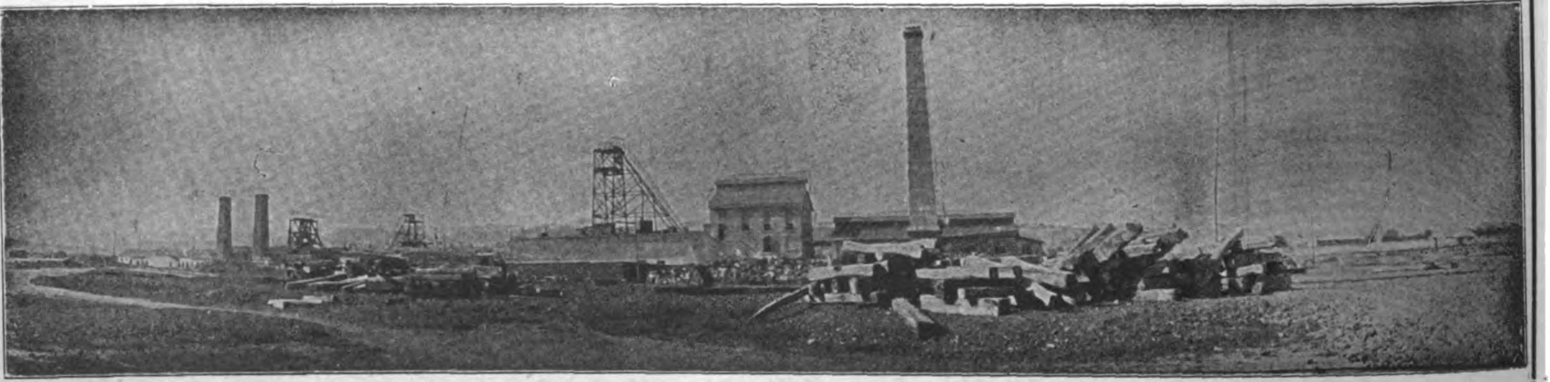


# CHINESE GOVERNMENT RAILWAYS

## THE TAO-CHING RAILWAY

TAOKOU TO CHINGHUA

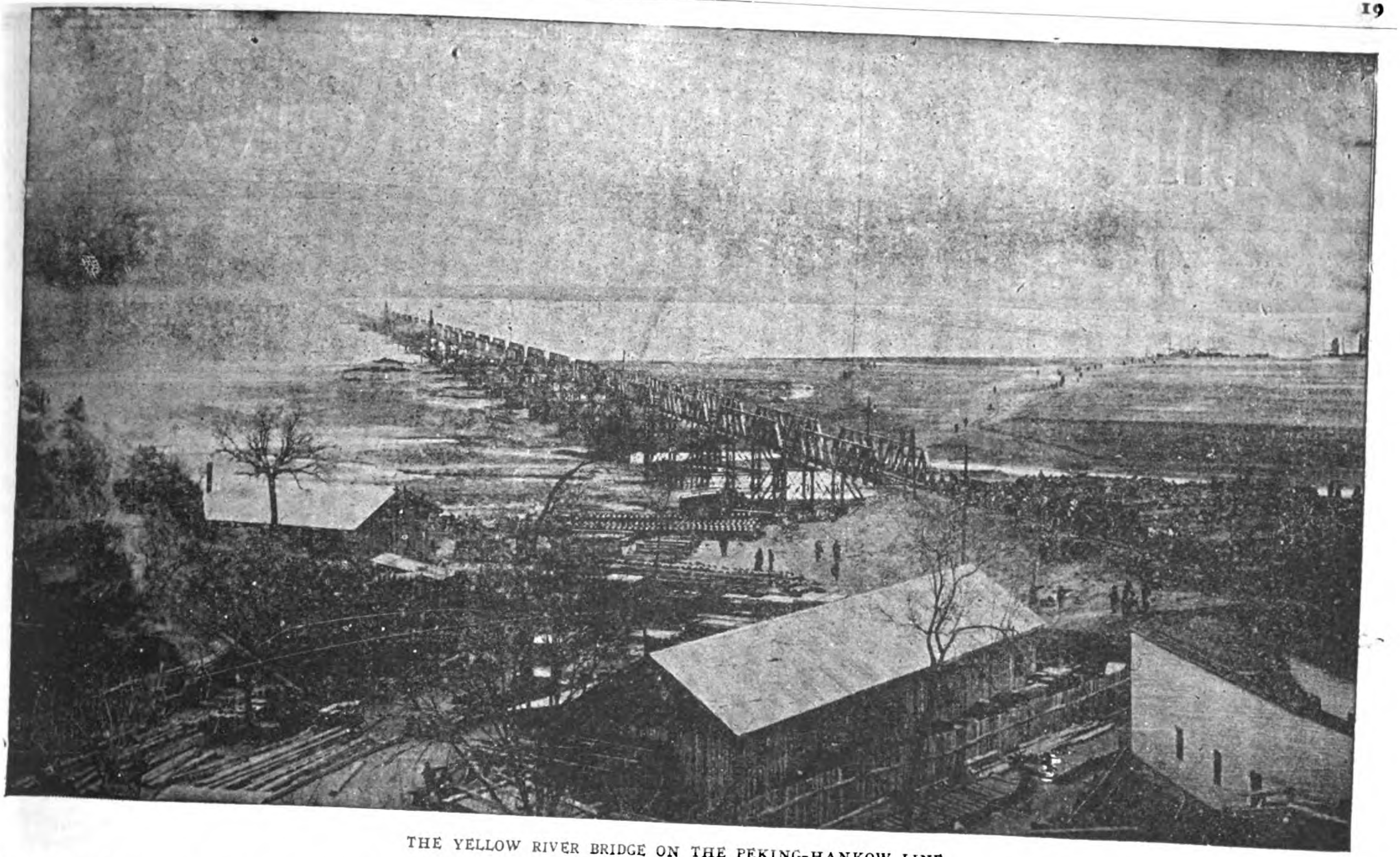
(CHINESE GOVERNMENT HONAN LINE)



GENERAL VIEW OF COAL MINES ON THE LINE OF THE TAO-CHING RAILWAY

**"China's Road of Anthracite"**

THE TRAINS OF THIS LINE CONNECT AT SIN-SIANG-SIEN WITH THE THROUGH SERVICE OF THE PEKING-HANKOW RAILWAY. IT TAPS THE GREAT ANTHRACITE COAL DEPOSITS OF SHANSI, AND CONVEYS THE PRODUCTS OF THE MINES TO THE NEAREST NAVIGABLE RIVER.



THE YELLOW RIVER BRIDGE ON THE PEKING-HANKOW LINE

CHINESE GOVERNMENT RAILWAYS

# PEKING-HANKOW LINE

"THE ROAD THROUGH THE HEART OF CHINA"

**Avoid the Cold and Rough Weather in the Sea Trip between Shanghai and the North by the more comfortable Route up the Yangtsze to Hankow, and from there via the Ching-Han Railway to Peking, where through connections for Europe are made with the Trains de Luxe of the Government Railways of North China.**

This line passes through the Heart of the Country and enables the traveller to and from Europe to catch a glimpse of Old China. Ancient walled cities, temples and pagodas are seen from the comfortable seats of the weekly trains de luxe operated by this line. From Peking, the great capital of the oldest civilization in the world, the train departs from the famous Chien-Men and carries the traveller through the historical and legendary portions of the Country, to the modern industrial center at Hankow—the Chicago of China. Connections are made with the Cheng-Tai Railway at Chengtingfu, with the Tao-Ching Line at Sin Siang-sien, and at Chengchowfu with the Pienlo Line.

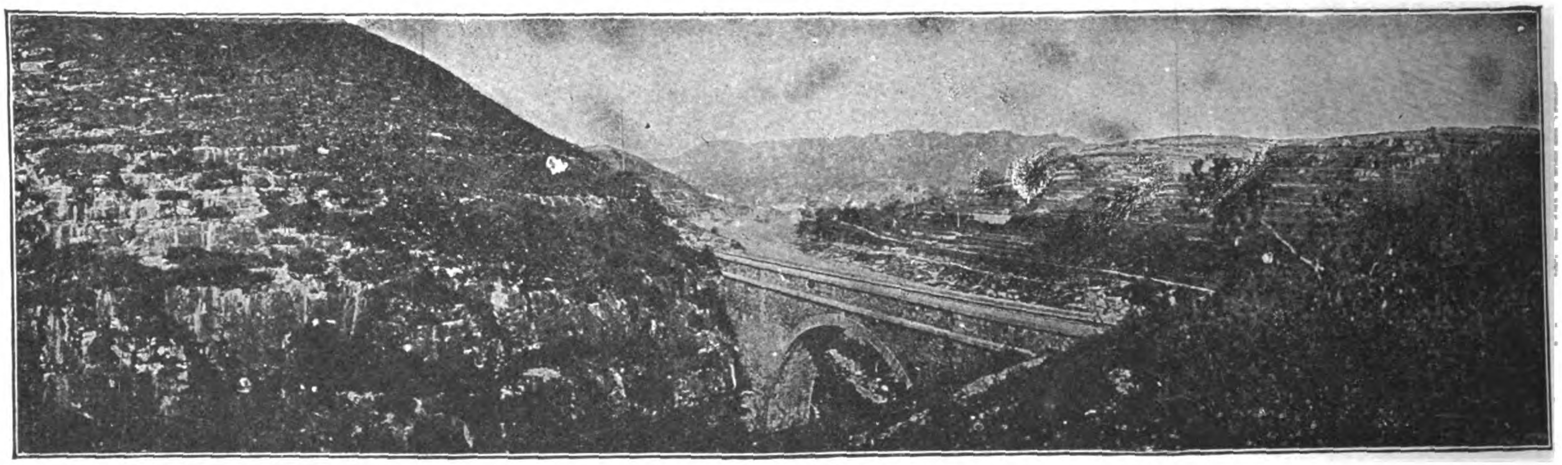
A weekly express train de luxe leaves Peking every Tuesday, and Hankow every Friday, making the trip of over 700 miles in less than thirty hours.

**For information apply to any office of the International Sleeping Car Co. or Thos. Cook and Sons.**

# Chinese Government Railways

## *The Cheng-Tai Railway*

*(CHINESE GOVERNMENT SHANSI LINE—CHENGTINGFU TO TAIYUANFU)*

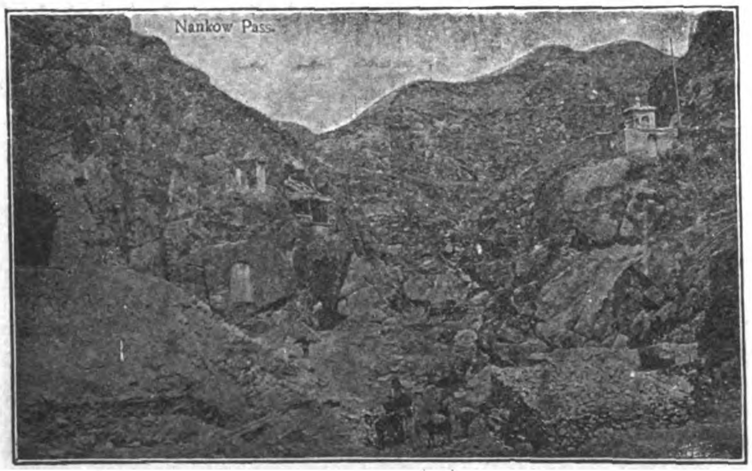


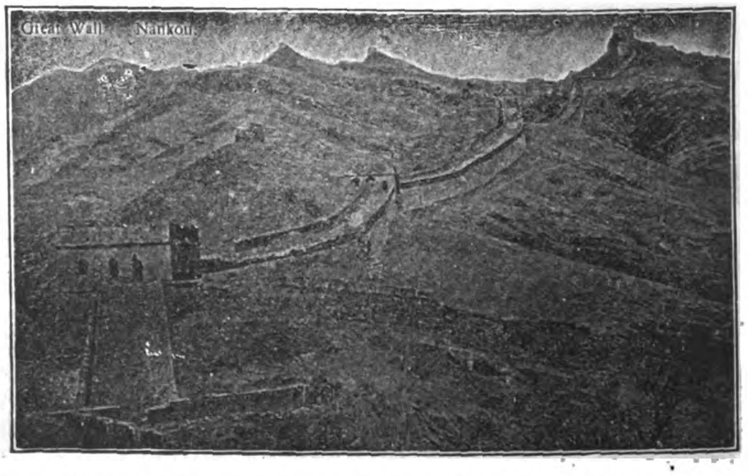
VIEWS ALONG ROUTE OF CHENG-TAI RAILWAY

The trains of this line connect with the through service of the Peking-Hankow Railway, affording Travellers the opportunity of seeing the most picturesque part of China. The line passes through a mountainous section of country, rich in Mineral Resources to the Provincial Capital of Shansi at Taiyuanfu. This interesting city is a great educational center, and famous for the fine quality of its artistic embroideries.

## *The Peking-Kalgan Line*

*"THE ROAD TO THE GREAT WALL"*



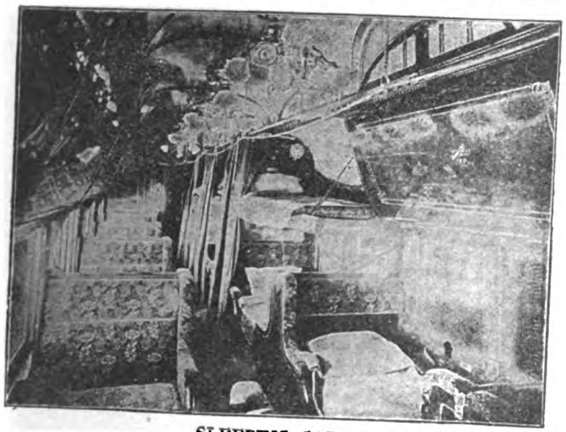

This line follows the ancient caravan route and military highway from Mongolia into China by the way of the historic Nankow Pass. This pass is the Key to Peking, and Kalgan is the gate of the Country. From here the great camel caravans set out on their long journeys across Mongolia to Siberia and Central Asia. This old frontier mart, retaining its time-honored characteristics, one of the most interesting sights of the Old World, is made accessible by the new railway. The line also carries the passenger in two hours from Peking to Nankow, when the Great Wall of China and the Ming Tombs may be seen. A foreign hotel is operated by the railway authorities at Nankow, where chairs and guides may be secured for the Tombs.

**SHORTEST, QUICKEST, AND CHEAPEST ROUTE BETWEEN THE FAR EAST AND EUROPE**

THE SOUTH MANCHURIA EXPRESS

| | | | |
|---|---|---|---|
| Shanghai | to London | in | 13½ days |
| Tokio | " " | " | 13¼ " |
| " | " Peking | " | 3½ " |
| Dairen | " Moscow | " | 8¾ " |

# South Manchuria Railway



SLEEPING CAR

**THRICE WEEKLY EXPRESS TRAINS.**—Composed of excellently equipped SLEEPING, DINING, and 1st CLASS CARS. Operated between DAIREN and CHANGCHUN in connection with the TRANS-SIBERIAN ROUTE and SHANGHAI MAIL STEAMERS.

DINING CAR

**CONNECTIONS AT MUKDEN.**—These Express Trains connect at MUKDEN with the PEKING-MUKDEN RAILWAY running via TIENTSIN and with the newly organized MANCHURIA-CHOSEN THRICE WEEKLY EXPRESS SERVICE between Changchun and Fusan; the MUKDEN-ANTUNG LINE (now running throughout on standard gauge) connecting with the KOREAN RAILWAY; by this route the journey between Europe and Japan is shortened by two days, and the sea voyage considerably reduced.

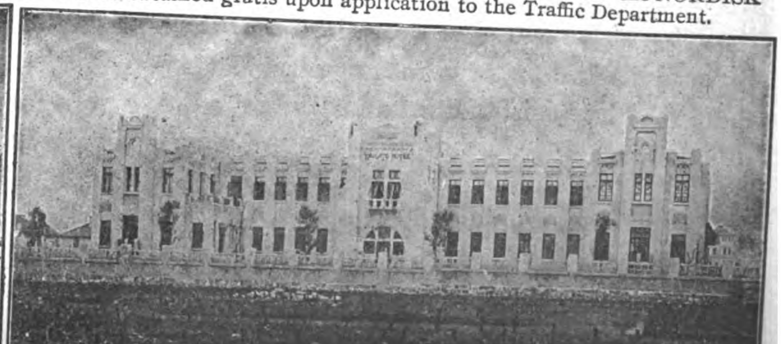
**OTHER STEAMER CONNECTIONS AT DAIREN.**—Regular Steamship Services are maintained from DAIREN to MOJI, KOBE, CHEMULPO, TIENTSIN, CHEFOO, TSINGTAU, and other ports in Japan and China.

S. M. R. YAMATO HOTEL HOSHIGAURA (STAR BEACH)

**RAILWAY HOTELS.**—YAMATO HOTEL (Tel. Add.: "Yamato") at DAIREN, PORT ARTHUR, MUKDEN, CHANGCHUN, and HOSHIGAURA, all managed by the Company on European lines and providing comfortable accommodation.
At Hoshigaura ("Star Beach"), the finest seaside resort in North China, 5 miles from Dairen, in addition to the hotel, there is a large number of bungalows (for hire at moderate terms), situated in a charming cliff garden and surrounded by beautiful scenery.

**TICKET AGENTS IN EUROPE AND THE FAR EAST.**—The INTERNATIONAL SLEEPING CAR & EXPRESS TRAINS CO.; The NIPPON YUSEN KAISHA, Shanghai; Messrs. THOS. COOK & SON; the REISEBUREAU DER HAMBURG-AMERIKA LINIE; and the NORDISK RESEBUREU. Time-tables, fares, literature, and any information can be obtained gratis upon application to the Traffic Department.

S. M. R. YAMATO HOTEL, MUKDEN



S. M. R. YAMATO HOTEL, CHANGCHUN

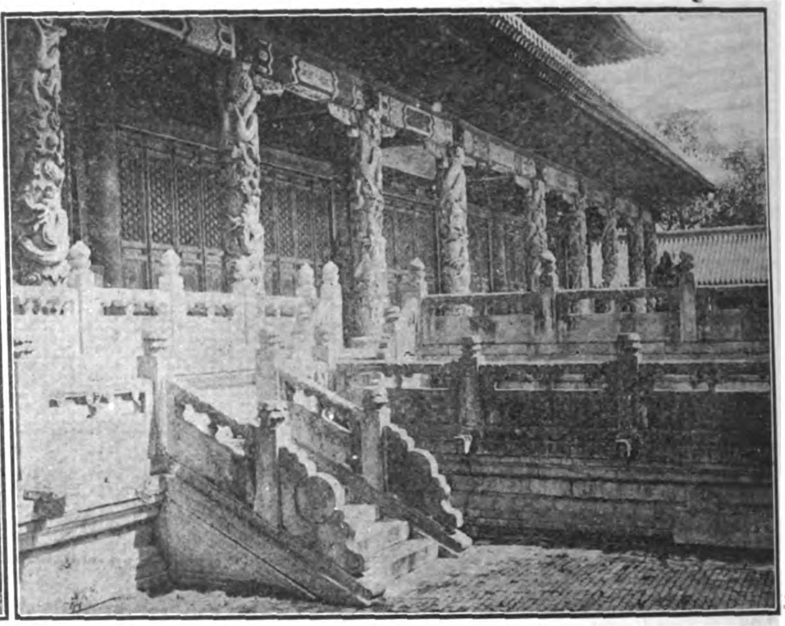
# SOUTH MANCHURIA RAILWAY COMPANY, DAIREN, MANCHURIA

Tel. Add.: "MANTETSU" -:- Codes: A. B. C. 5th Ed., A-1, and Lieber's

# CHINESE GOVERNMENT RAILWAYS

# TIENTSIN-PUKOW LINE

The Tomb of Confucius



Confucian Temple at Chüfu

**Mukden-Peking-Kalgan-TIENTSIN-TSINANFU-HSUCHOWFU-PUKOW-Nanking-Shanghai.**

**all by rail only.**

---

Being the **quickest, surest and most convenient** connection between Shanghai on the one and Tientsin, Peking, Kalgan, Mukden and the **Siberian route on the other side,** this railway represents **a saving of many hours, of many troubles,** worries and inconveniences for the busy merchant, the home tripper on short furlough.

The tourist, the globe trotter travelling with more leisure and bent on seeing things, it takes right away from the stereotyped banality of the great ports, takes him through many provinces of the vast republic and shows him **something of the "real" China,** of its people, its history and its beauty.

Express trains equipped with sleeping and buffet cars run once a week each way between Pukow (Nanking) and Tientsin connecting with the through service of the South-Manchuria and Trans-Siberian Railways.

Through mail trains equipped with **buffet cars run daily each way** between the before mentioned termini.

The crossing over the Yangtsekiang between Nanking and Pukow is effected by means of a modern 100-tons twin-screw ferry boat.

Special facilities and **liberal allowances** for passengers' baggage.

Best of **meals and wines supplied** on the trains.

Sanitation under the personal supervision of a **qualified medical officer.**

For further particulars apply to THE TRAFFIC MANAGER, Head Office, TIENTSIN or to the Agencies of Messrs. Thomas Cook & Sons, The International Sleeping Car & Express Trains Co. or the Nordisk Resebureau.

Telegraphic Address: TSINPURY—Tientsin (Tsinanfu, Nanking, Shanghai).

Codes: A B C 5th Edition; Broomhalls' (with Suppl. No. 1).

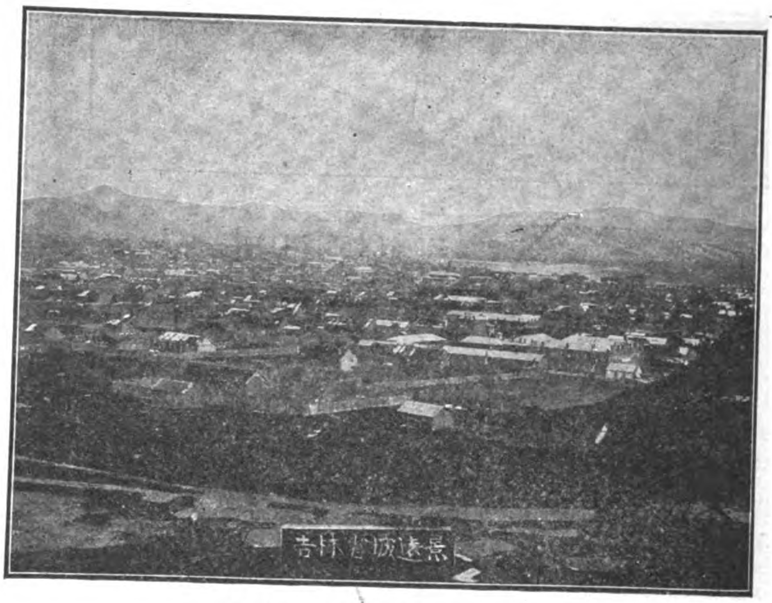
**Tientsin, May 1st, 1915.** **The Tientsin-Pukow Railway Administration.**

# 中華民國政府吉長鐵路行車時刻表

# CHINESE GOVERNMENT RAILWAYS KIRIN-CHANGCHUN LINE.

## TIME TABLE.

| DOWN TRAINS Daily Mixed | DOWN TRAINS Daily Mail | | STATIONS. | | UP TRAINS Daily Mail | UP TRAINS Daily Mixed |
|---|---|---|---|---|---|---|
| P.M. | A.M. | | | | P.M. | A.M. |
| 2.30 | 7.30 | dept. | TOUTAOKOU | arr. | 6.25 | 10.47 |
| 2.38 | 7.38 | arr. | CHANGCHUN | dept. | 6.15 | 10.37 |
| 2.45 | 7.41 | dept. | | arr. | 6.10 | 10.31 |
| 3.20 | 8.12 | arr. | KALUN | dept. | 5.40 | 9.57 |
| 3.25 | 8.14 | dept. | | arr. | 5.38 | 9.55 |
| 3.58 | 8.46 | arr. | YINMAHO | dept. | 5.06 | 9.22 |
| 4.02 | 8.48 | dept. | | arr. | 5.04 | 9.20 |
| 4.17 | 9.02 | arr. | HSIACHIUTAI | dept. | 4.50 | 9.05 |
| 4.22 | 9.04 | dept. | | arr. | 4.48 | 9.03 |
| 4.34 | 9.16 | arr. | YINGCHENGTZE | dept. | 4.36 | 8.50 |
| 4.38 | 9.18 | dept. | | arr. | 4.33 | 8.48 |
| 5.03 | 9.40 | arr. | TUMENLING | dept. | 4.12 | 8.24 |
| 5.13 | 9.50 | dept. | | arr. | 4.06 | 8.18 |
| | | arr. | CHAOCHIATIEN | dept. | 3.46 | 7.58 |
| 5.33 | 10.10 | dept. | | arr. | | |
| 5.57 | 10.31 | arr. | HUAPICHANG | dept. | 3.24 | 7.23 |
| 6.02 | 10.33 | dept. | | arr. | 3.22 | 7.20 |
| 6.18 | 10.46 | arr. | KUTIENTZE | dept. | 3.08 | 7.04 |
| 6.20 | 10.47 | dept. | | arr. | 3.07 | 7.03 |
| 6.38 | 11.03 | arr. | KIUCHAN | dept. | 2.52 | 6.45 |
| 6.43 | 11.05 | dept. | | arr. | 2.50 | 6.42 |
| 7.05 | 11.25 | arr. | KIRIN | dept. | 2.30 | 6.20 |



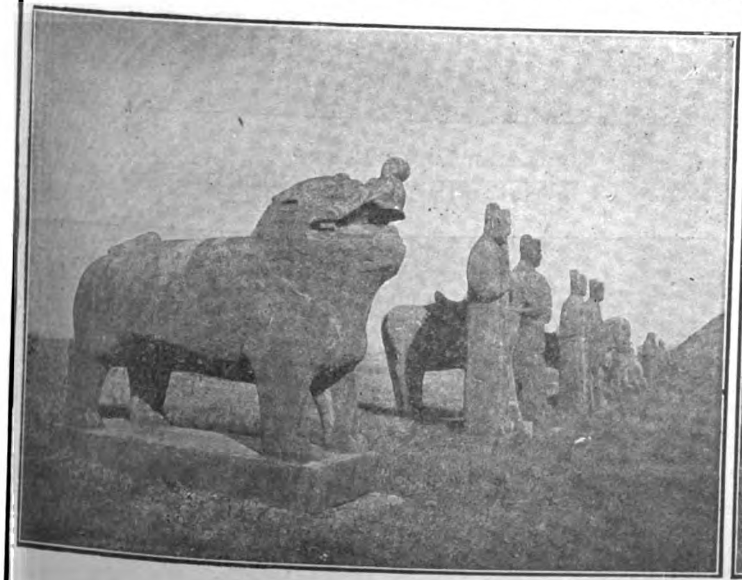
BIRD'S EYE VIEW OF KIRIN CITY

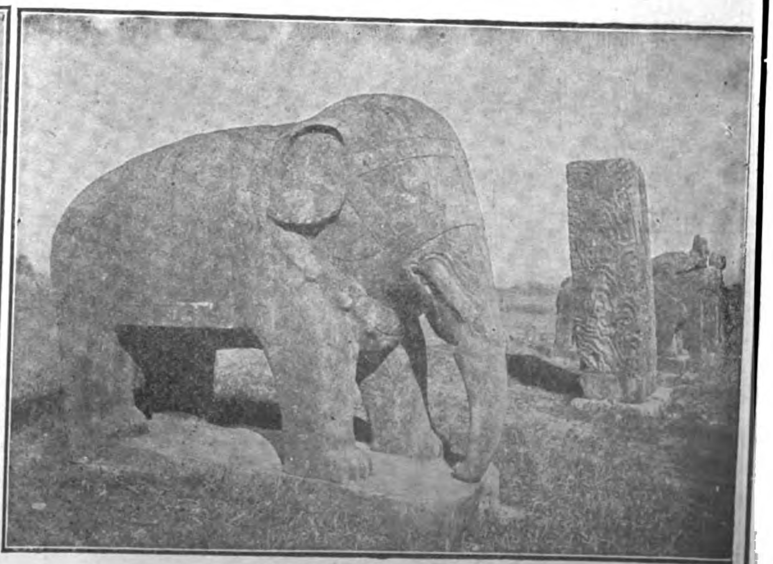
NOTICE:—"dept."=Departure. "arr."=Arrival.
1st May, 1915, and until further notice.



# THE PIENLO RAILWAY

## (KAIFENG-FU TO HONANFU)
## "THE FIRST SECTION OF THE PROJECTED CENTRAL TRUNKLINE"



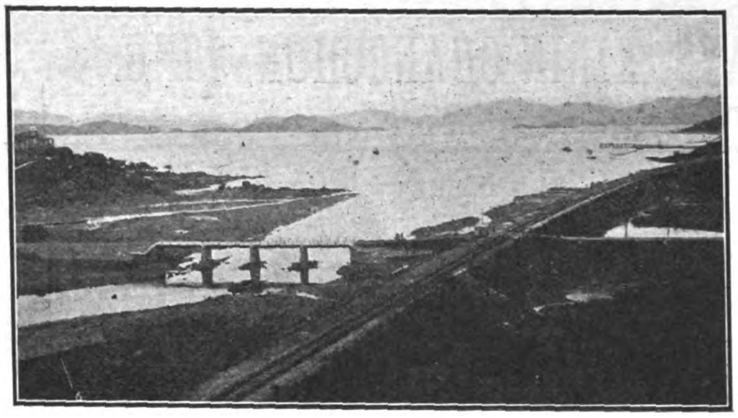


THE SUNG TOMBS NEAR KAIFENG-FU ON THE PIENLO RAILWAY.

The line connects with the through service of the Peking-Hankow Railway at Tcheng Tchéou, enabling the traveller to visit Kaifengfu, the provincial capital of Honan, and the old capital of the Empire at Honanfu.

# CANTON-KOWLOON RAILWAY

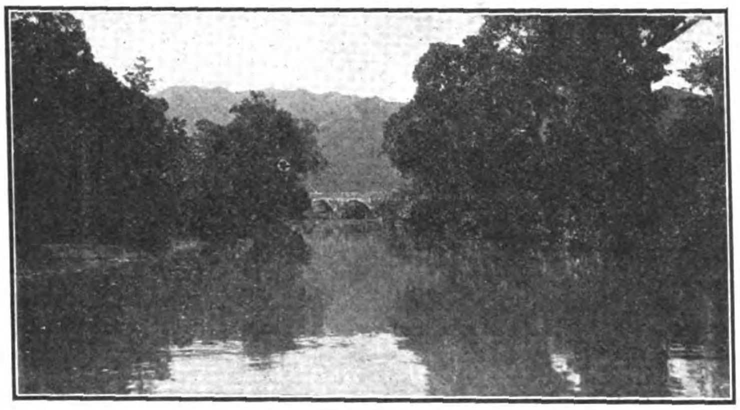
**VIEWS ON THE BRITISH SECTION (22 MILES)** **VIEWS ON THE CHINESE SECTION, 89 MILES. (Chinese Government Railways)**



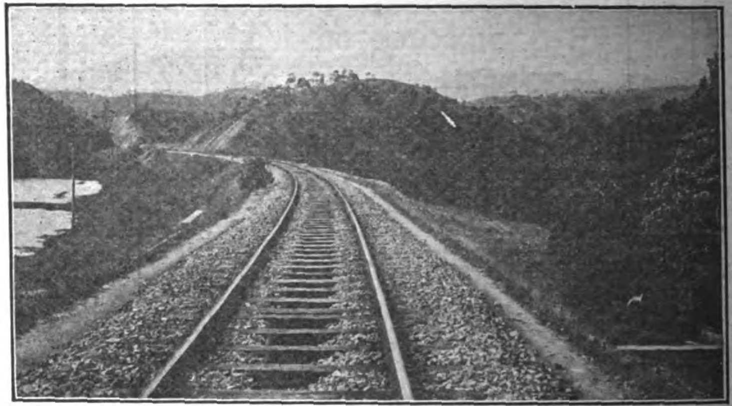
Canton-Kowloon Railway—Approach to Kowloon

Tai Sha Tan Station, Canton

**QUICKEST AND CHEAPEST ROUTE BETWEEN CANTON AND HONGKONG THROUGH VARIED AND BEAUTIFUL SCENERY**

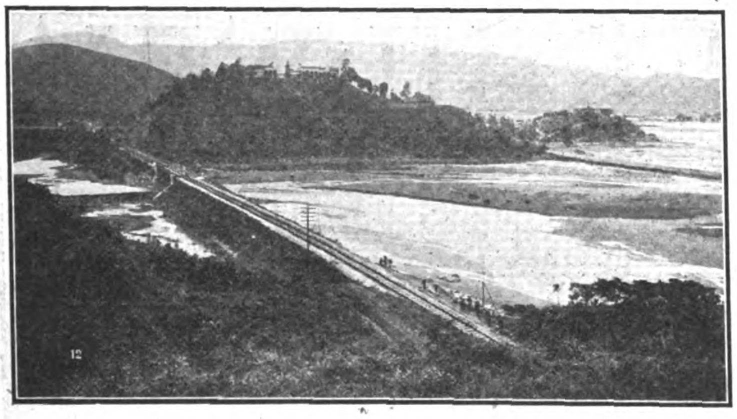


Canton-Kowloon Railway—Scene Along Route

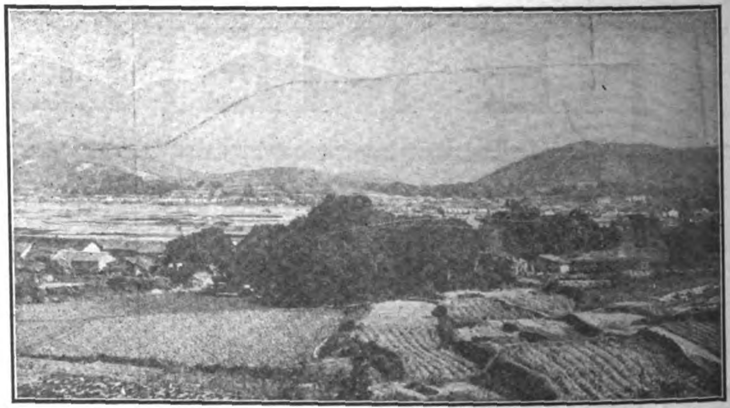


Near Le Loong, Canton-Kowloon Railway

**TWO EXPRESS CORRIDOR TRAINS EACH WAY DAILY—HOT MEALS AND OTHER REFRESHMENTS SERVED**

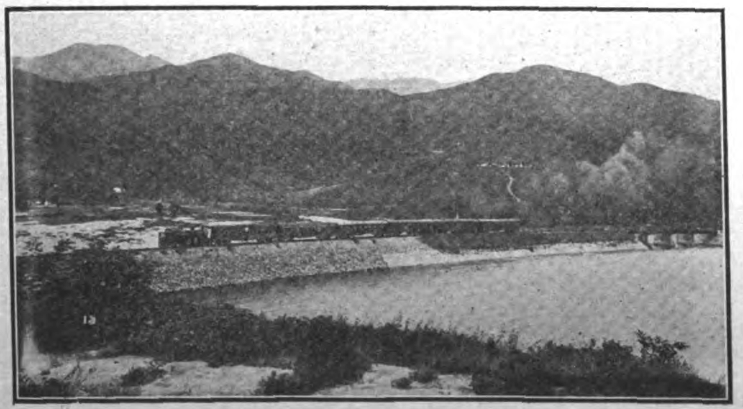


Canton-Kowloon Railway—Crossing Tide Flats

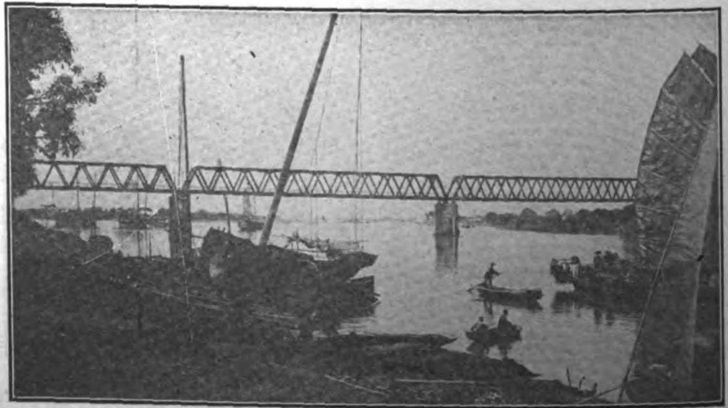


Villages, Canton-Kowloon Railway

**4¼ HOURS BETWEEN UP AND DOWN TRAINS FOR BUSINESS MEN OR TOURISTS AT CANTON OR HONGKONG**



Canton-Kowloon Railway—Embankment Approach to Bridge



East River Bridge, Canton-Kowloon Railway

## TIME TABLE

Leave Hongkong (Kowloon) 8.05 a.m., 9.30,* 11.15 a.m., 11.55* a.m. & *3.15 p.m.
Arrive Canton (Tai Sha Tau) 11.45 a.m. 5.20 p.m. 3.50 p.m. 7.15 p.m.

Leave Canton (Tai Sha Tau) 7.25,* 8.35 a.m. 12.30* noon & 3.20* p.m.
Arrive Hongkong (Kowloon) 11.00 a.m. 4.35 p.m. 4.00 p.m. 6.55 p.m.

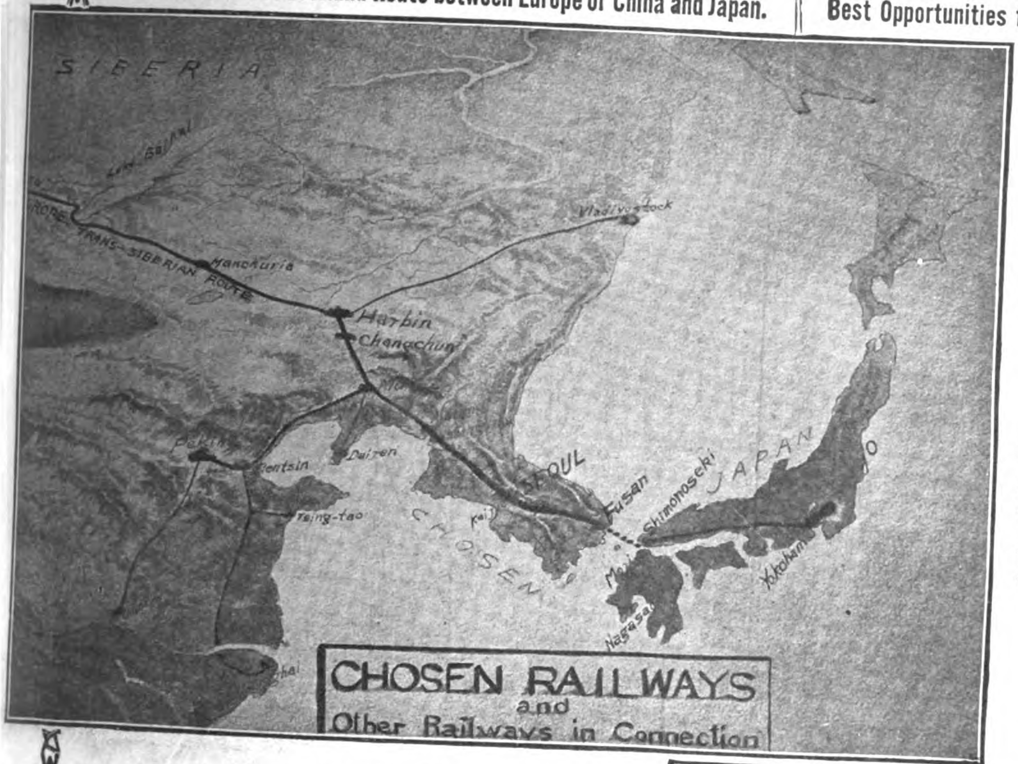
**Special terms and special trains for large tourist parties. For further particulars see advertisements or apply to**

***Express** **The Manager (British Section) Kowloon, HONGKONG.** **The Administration (Chinese Section) CANTON.**

# Chosen Railways

**Most Important Link in the Round-the-World Routes via Siberia.**
**Safest and Quickest Overland Route between Europe or China and Japan.**

**Only 10 hours, Sea Passage between the Continent and Japan.**
**Best Opportunities for studying Unique Conditions in the Far East.**




## *Chosen-Manchuria Express*

**Fusan-Keijyo (Seoul)-Mukden-Changchun**

Weekly Service. Most Up-to-date Accommodation: 1st and 2nd Class Sleeping Cars and a Dining Car.

CONNECTIONS:

With the Trans-Siberian Express.
With the Tokyo-Shimonoseki Train de Luxe.
With the Peking-Mukden Train de Luxe.

## *Daily Express*

**Fusan-Keijyo-Antung**

Twice a day Service, taking all class Cars, besides 1st and 2nd Class Sleeping Cars (Keijyo-Fusan section only) and a Dining Car.

CONNECTIONS:

With trains on the South Manchuria Ry.
With express trains on the Japanese Rys.

## *Through Traffic*

Stations open to through traffic are as follows:—

**South Manchuria Railway.**— Dairen, Changchun, Mukden, Yingkou, etc.

**Chinese Eastern Railway.**— Tsitsihar, Manchuria and Harbin.

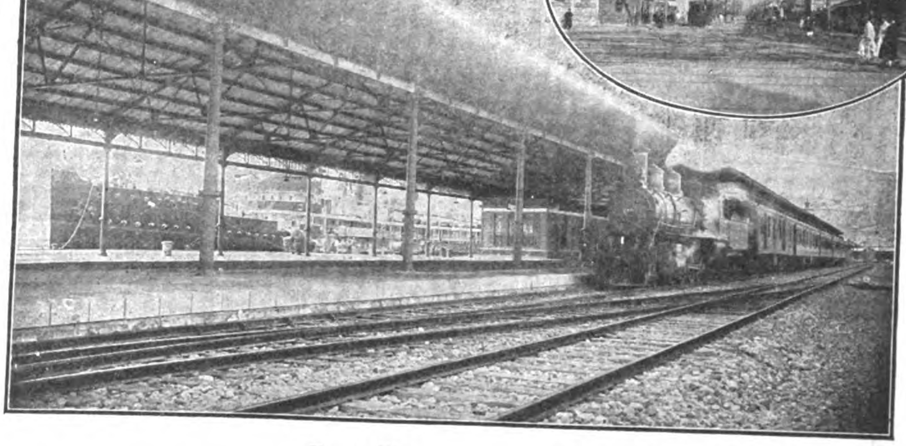
**Chinese Government Railways.**— Hsinmingfu, Shanhaikuan, Peking, Tientsin, Shanghai, Nanking, Tsinanfu, Hankow, Nankow and Kalgan.

**Russian State Railways.**— Irkutsk, Odessa, Warsaw, Moscow and Petrograd.

**Chosen Railways.**— Fusan, Keijyo (Seoul) Heijyo, † Jinsen and † Chinnampo.

**Japanese Railways.**— (via Chosen) Tokyo, Yokohama, † Nagoya, Kyoto, Osaka, Kobe, Shimonoseki, Moji and Nagasaki.

† No through traffic to or from points of the Chinese Eastern Railway and the Russian State Railways.



Fusan Pier

A scene in Keijyo (Seoul)

## *Ticket Agencies*

The International Sleeping Car Company; Messrs. Thos. Cook & Son; The Nordisk Resebureau.

## *Hotels*

Under the Direct Management of the Railway Bureau.

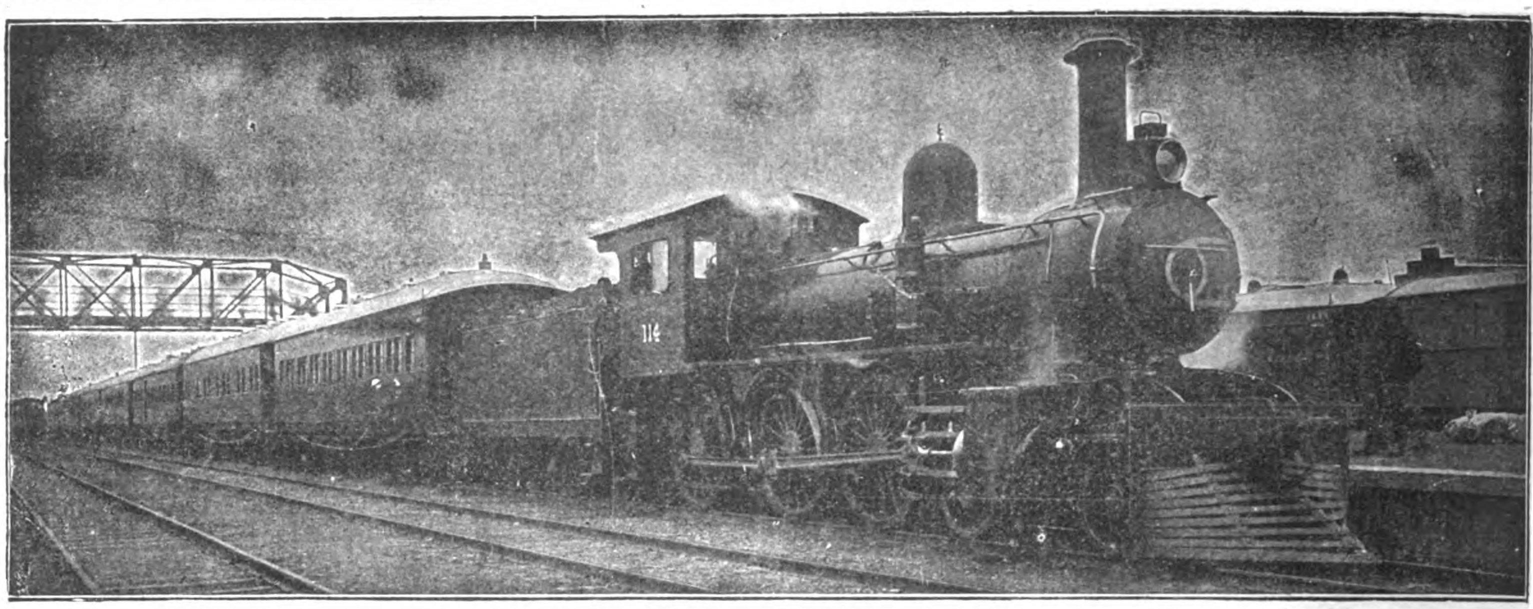
CHOSEN HOTEL AT KEIJYO (Seoul).—Cable Add: "CHOHO" 80 bedrooms mostly with bath; Motor-cars meet guests at the station.

STATION HOTELS AT FUSAN AND SHINGISHU.—The most convenient and comfortable stopping places on the upper floors of the two station buildings.

FOR FURTHER PARTICULARS PLEASE APPLY TO

# Railway Bureau of the Government-General of Chosen,

**Cable Add: "SENTETS."** **Ryuzan, Chosen.** **Code Used: A. B. C., 5th Edition.**



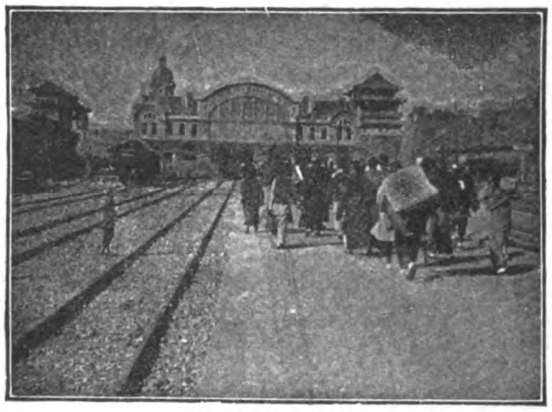
TRAIN DE LUXE AT TIENTSIN SETTLEMENT STATION

# CHINESE GOVERNMENT RAILWAYS OF NORTH CHINA

THROUGH SERVICE FROM PEKING TO MUKDEN, CONNECTING AT MUKDEN WITH THE SOUTH MANCHURIA EXPRESS FROM TRANS-SIBERIAN ROUTE: AT PEKING CONNECTION IS MADE WITH THE PEKING-HANKOW RAILWAY FOR HANKOW AND YANGTSZE PORTS, AND INTERMEDIATE POINTS REACHED BY THE CHEN-TAI LINE TO TAIYUANFU, THE TAO-CHING LINE, AND THE PEINLO RAILWAY TO KAIFENGFU AND HONANFU. CONNECTION IS ALSO MADE AT PEKING WITH THE PICTURESQUE KALGAN LINE, "THE ROAD TO THE GREAT WALL."

## THE RAILWAYS OF NORTH CHINA PASS THROUGH THE MOST INTERESTING PART OF CHINA

**PEKING:** THE CAPITAL, WITH ITS WALLS, PALACES, TEMPLES AND TOMBS.—**TIENTSIN:** THE GREAT TRADE CENTER OF NORTH CHINA.—**TONGSHAN:** THE LARGEST MINING AND INDUSTRIAL TOWN IN THE COUNTRY.—**SHANHAIKWAN:** WHERE THE GREAT WALL ENDS AT THE SEA.—**NEWCHWANG:** THE BUSY COMMERCIAL PORT OF MANCHURIA.—**MUKDEN:** THE ANCESTRAL HOME OF THE MANCHU DYNASTY. A MINIATURE PEKING, WITH ITS WALLS, IMPERIAL PALACES, TEMPLES AND TOMBS.



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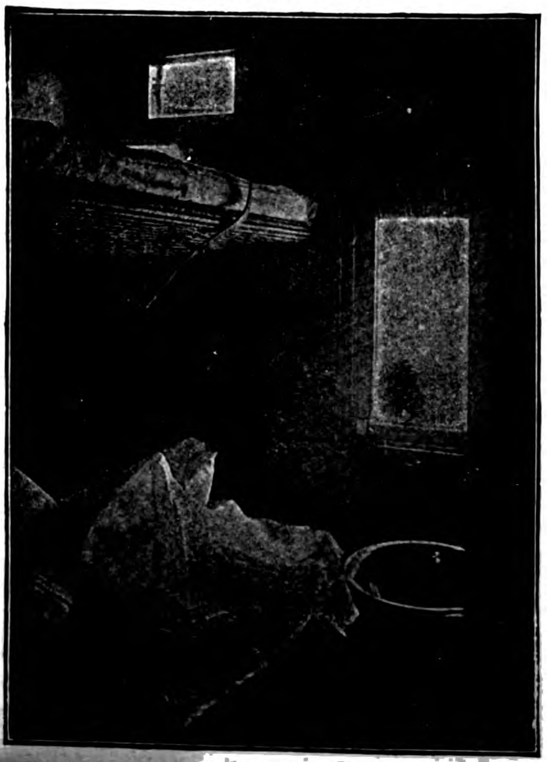

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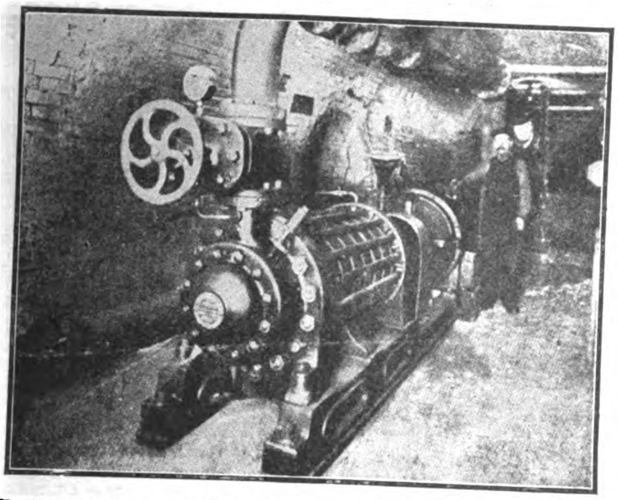

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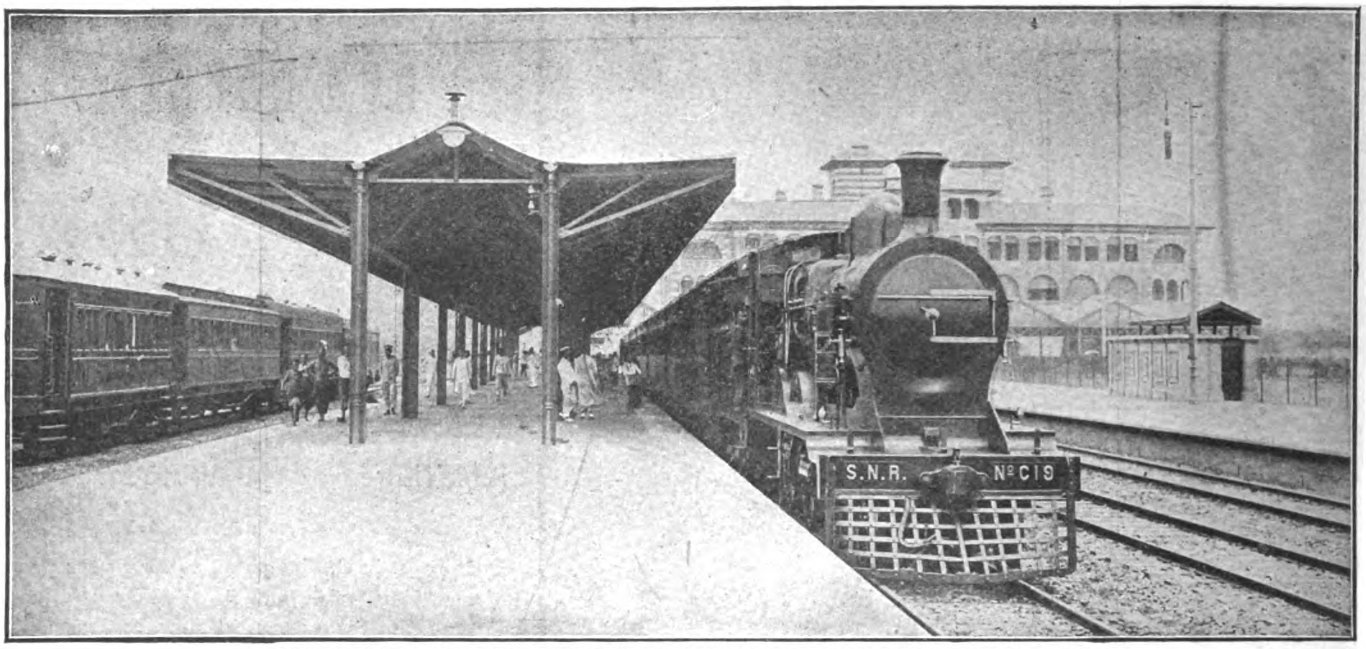


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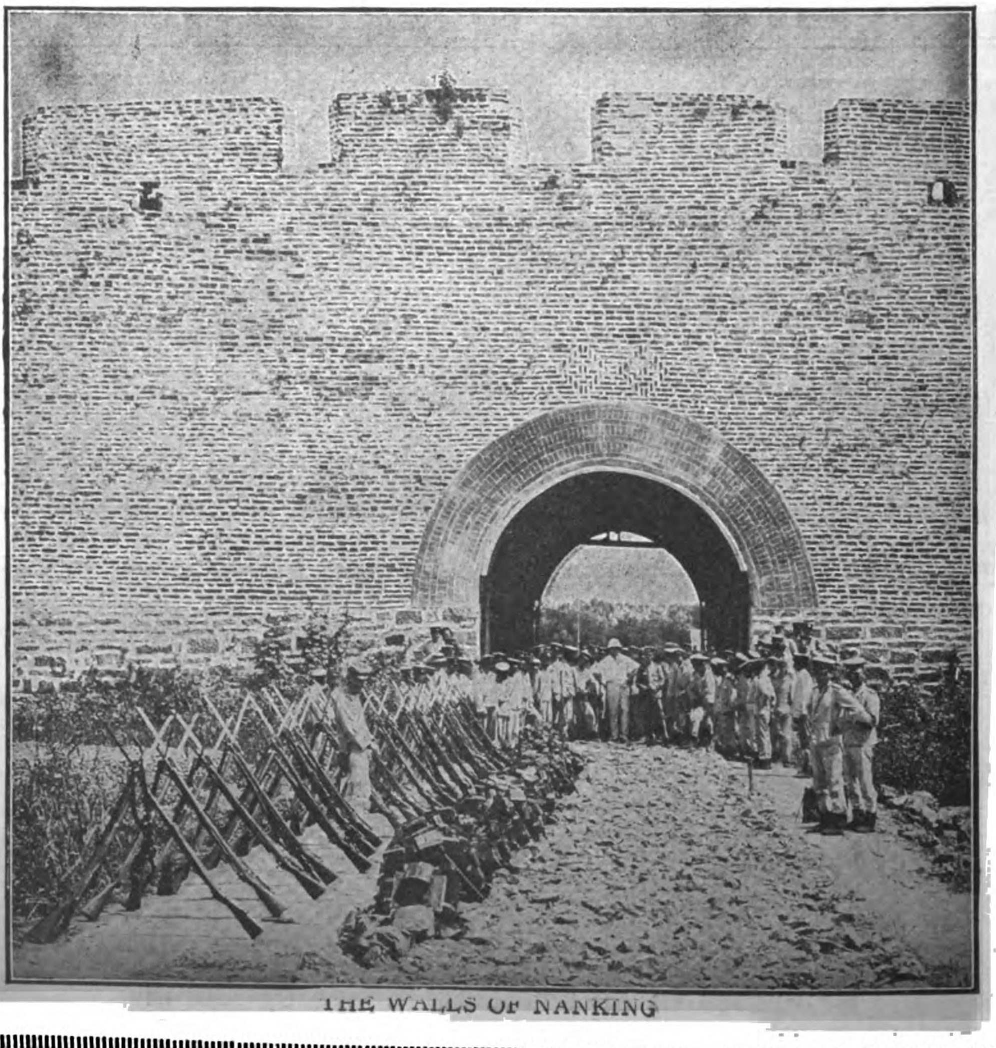

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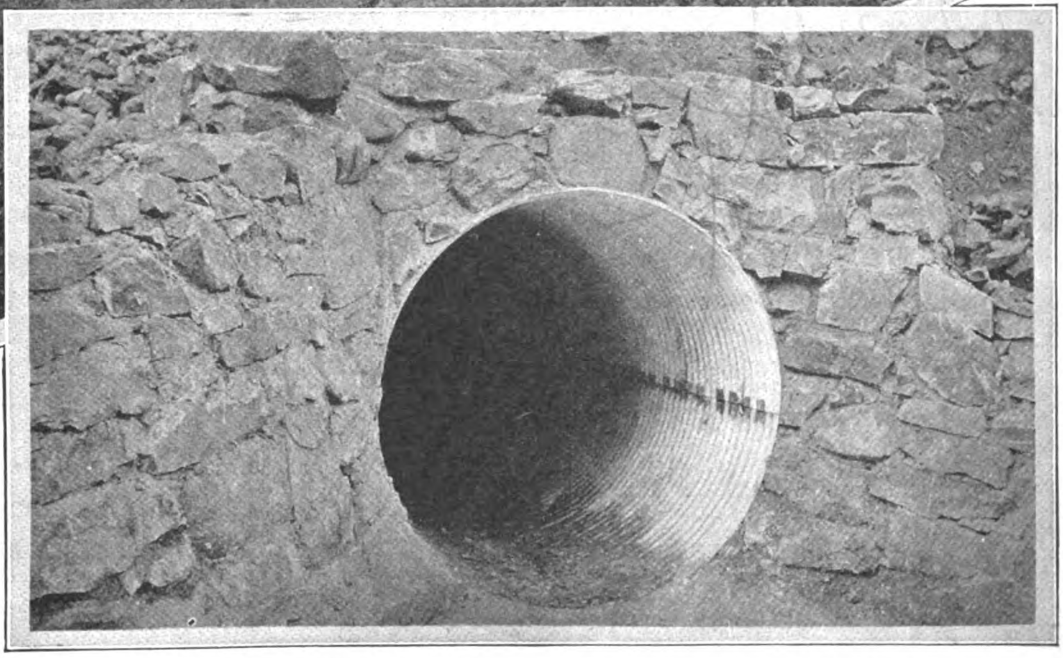

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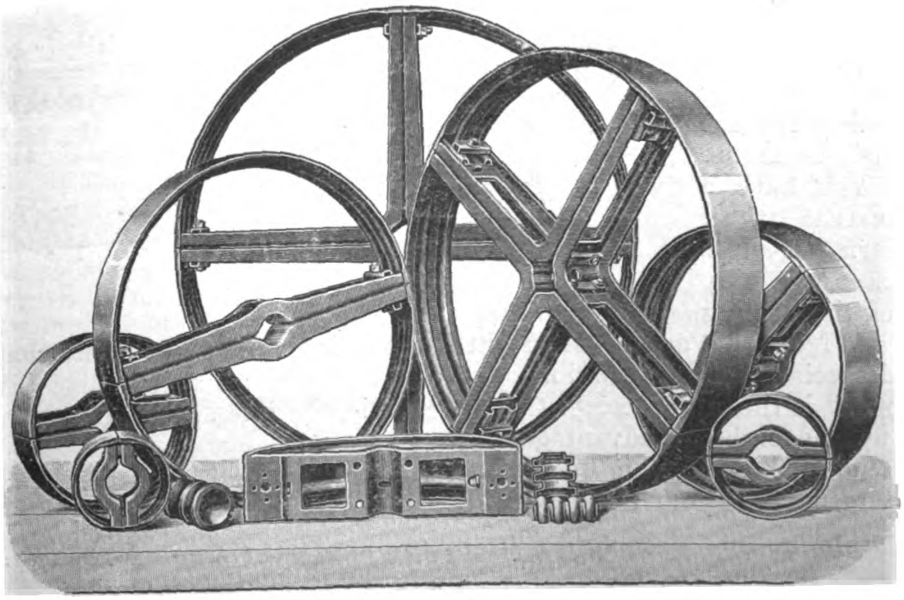

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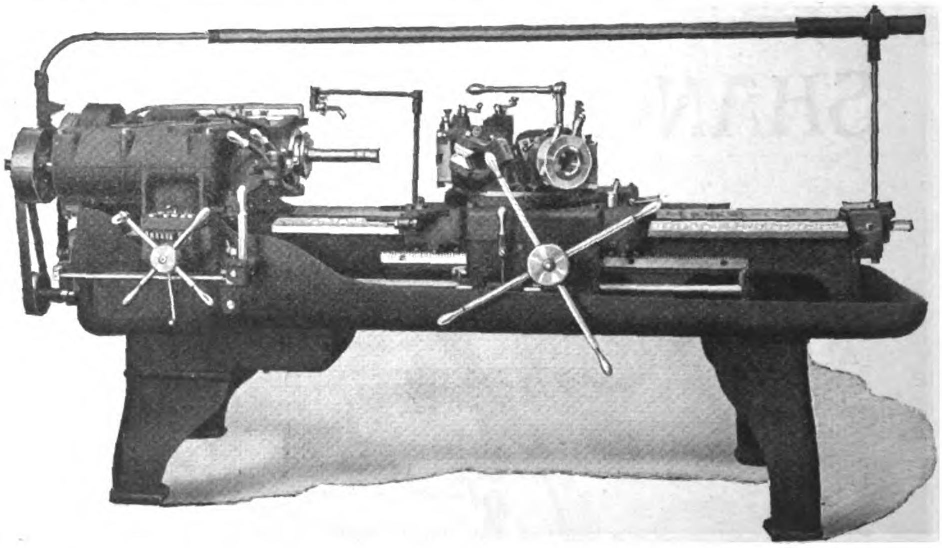

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THE FAR EASTERN REVIEW

COMMERCE :-: ENGINEERING :-: FINANCE

VOL. XII. SHANGHAI, MAY, 1916 No. 12

# "THE WHITE PERIL"

## A Japanese Military Writer Urges Japan to Prepare to Fight the World.

THE BOGEY OF ISOLATION RAISED TO JUSTIFY THE APOTHEOSIS OF MILITARISM.

**We publish below the first instalment of a translation, or rather paraphrase, of a remarkable book published in Tokyo in November, 1915. The book is entitled "The Japanese Empire after the War," and the writer, who hides his identity behind initials, is obviously a Japanese military officer on the reserve list. The object of the writer is frankly militaristic. He seeks to inspire the Japanese people with the belief that the Empire is in danger of being conquered by the white races, after they have patched up their own differences. To avert this disaster, he declares, augmentation of the army is imperative. To make his case good the writer gives with refreshing frankness his opinion of the European nations and America. As an indication of the strength of the hold that militarism has obtained in Japan the book is well worth studying, and we have no doubt that the instalment now printed, and those that will follow, will be read with interest.**

### PREFACE

Over a year has passed since the outbreak of the European war. Germany, it is believed, is in the grip of an economic famine, and is growing more and more frantic in her mad exertions; there is something demoniacal in her dash at the eastern and western fronts. On the other hand, we see the Entente Powers, Great Britain, France and Russia, growing firmer; their determination to continue the war, no matter for how long, till they gain the victory, is becoming more and more inflexible.

A century ago, when Napoleon threatened to overpower Europe, William Pitt of Great Britain was determined to crush him, at all cost. In defiance of public opinion he kept up the war for twenty years, and finally achieved a glorious victory on the memorable field of Waterloo.

We believe that the Allies will be able to persevere through pains and difficulties, till they win the final triumph. But to-day there is something potential in the influence of public opinion over the policy of the state, which was hardly dreamed of a century ago. Consequently it may happen that the belligerents on both sides will be induced to consider their burdens too heavy, and, overcome by the horror of warfare, arrive at the conclusion that nothing is to be gained commensurate with the enormous expenditure, with the possible result that the restoration of peace may be effected at an earlier date than we expect. But, even if such an unexpected eventuality does not occur, it is certain that the war must come to an end sooner or later. When the war ends, it does not require any prophetic vision to foresee that the Powers concerned will find themselves in the most complex international diplomatic relationship that can be imagined. Some one has said, "The unprecendented war will be followed by a great peace of an unprecedented duration."

But the peace to come will not be the kind which is dreamed of by the Christian, that is, the realization of the gospel of universal brotherhood. Rather we fear the advent of a dreadful series of racial wars waged under the pretext of peace for the preservation of different members of the world's family.

Then it is certain that the road which our Empire must take after the war will be very difficult and dangerous. Hence our fears and anxiety. The idea that the end of the war will find the national resources of the combatants well nigh exhausted, and that the peace to come after the war will be the realisation of the doctrines of universal brotherhood, is but the optimism of near-sighted arm-chair theorists who have no right to discuss with us the important scheme of national expansion.

LIEUT.-COL. V. I.

Nov. 1915.

### CHAPTER I

#### INTERNATIONAL RIVALRY

Our opinion of the European war, as expressed at its beginning, was that it was a great collision between Pan-Germanism and Pan-Slavism. At first we doubted if the two combinations were likely to remain intact, but the progress of the war has convinced us that they are far stronger in their union than we thought. Take for instance the conduct of Socialists.

#### 1.—THE ATTITUDE OF SOCIALIST PARTIES IN VARIOUS STATES

The Socialist is an absolute pacifist; he would destroy the barrier of national frontiers, remove the differences between the rich and the poor, and upholding the principles of universal brotherhood and of common property, is a relentless enemy of war. He holds that warlike action or preparation is calculated only to enrich capitalists and deprive labourers of their work, and to beget many other social evils. To the present war all Socialists were vehemently opposed at first. Their journalistic organs published anti-war views. Not content with this, they

held a meeting in the capital of Belgium on July 29, 1914, at which eleven countries were represented. On this memorable occasion they were unanimous in opposing hostilities, and in declaring that they should do everything to avert the coming world's war. They also agreed to hold a great international Socialist conference in Paris on August 9.

But what did they do after the war actually broke out? Their anti-war fever immediately disappeared and there was not a vestige of the "general strike" they had threatened to carry out. Not one of them expressed any antagonism to the war budget of his own country.

*The Attitude of German Socialists.*

The Kaiser once said of the Socialists, that "they are people without a country." But, after the outbreak of the war, the German Socialists declared that those who loved their fatherland best in a time of national emergency were the Socialists, and they gave enormous support to the special war estimates presented in the Reichstag in August and December.

*Franke,* a Socialist leader, when about to expire from a bullet wound at Mullhauzen, said, "I have no other idea now than to fight with the enemy."

In the session of the Reichstag opened in May, 1915, two eminent Socialist members delivered speeches, asserting there was no cause to suspect that their declaration made at the outset of the war as regards their attitude towards it, had in any way changed.

*The Attitude of French Socialists.*

A French Socialist leader was assassinated at Paris on July 31, 1914, but his colleagues were unanimous in approving of the war estimates on August 4. In the reconstruction of the Cabinet that followed, two Socialists obtained portfolios. One of them was the man who had often publicly denounced any idea of retaliative war with Germany, and the other had been a denouncer of the Russo-French Alliance. But now they had joined the anti-German ministry, breathing fire against the enemy. This is a remarkable phenomenon. Again, a member of the French Socialist party went so far as to assert that the war should be kept up till German militarism was crushed. All the French Socialists have been converted into enthusiastic advocates of the war.

In the Chamber's session of January this year (1915), all the members of the Socialist Party, gave their full approval to the Government's military plans against Germany.

*The Attitude of Belgian Socialists*

The leader of the Belgian Socialist Party, cried at the top of his voice that Belgium should arise in defence of her neutrality, and that to thwart the advance of German militarists was the only way to ensure her liberty. In the war Cabinet subsequently formed this Socialist was included.

*The Attitude of English Socialists*

They tried at first to hold fast to their theories, but their voice has since become inaudible. Now they are responding loyally to the Government's call for soldiers and war funds.

*The Attitude of Russian Socialists*

On the whole, the Russian Socialists seem to have stuck to their guns most faithfully. But to the war budget they consented. It is true that they rejected the call for the 2,000 million roubles loan made in October(?) But those who were supposed to be worse than Socialists, namely, Revolutionists and Nihilists, exhibited a vehemently warlike spirit. They enthusiastically approved of the war against Germany, they exclaimed that Germany was the enemy of Russian labourers, and those who were working abroad, including editors of Socialist organs, returned home to fight for their country.

There were many other admirable instances of the fact that Russian thinkers of various schools have sacrificed their own principles on the altar of their nation's emergency.

Since the outbreak of the war, we have often heard of German Socialists making zealous efforts in favour of peace. But we know they are in most cases only an attempt to throw dust in the eyes of the Kaiser's adversaries. In other cases their alleged remarks were either officially contradicted, or indignantly repudiated by the Kaiser.

Some people think that this laxity of Socialism is only a temporary phenomenon, but that the time will come when Socialism will have its way in war as well as in peace. In proof of this assertion, they point to the strikes in English coal-mines, and the disaffection among the employees of Krupps. But such incidents reflect the views of only sections of the many large organisations of Socialists, and when contrasted with the spirit of patriotic nationalism exhibited by their representative bodies, as already stated, are too insignificant to negative the general attitude of the Socialists towards the war. This section of the chapter is intended only to show how a section of the people cherishing Socialistic principles, have, in the ardour of their patriotism, sacrificed their own private views, and it perchance proves how strong and firm becomes the spirit of nationalism in time of emergency.

2. Unity and Co-operation of Various People

It is a matter of course that the subjects of any nation should join with one another in doing their utmost in their country's cause in a serious national crisis, and yet we cannot but be deeply impressed by the wonderful spirit of unity and co-operation shown in countries in which so many different races are mingled.

Most of the facts illustrative of this national co-operation in various countries have already been reported through the Press magazines. But we will recapitulate some typical facts in a systematic form.

*Germany.* Germany is inherently a warlike nation. Besides, her soil is sterile, her climate is cold, and she is beset with enemies on three sides. Unless she strives and fights with all her might and main, she can never hope to make any progress. For many decades she has been expecting and preparing for the outbreak of the present war, and now that it has come, all her people are resolutely conscious of its critical life and death significance; they know that Germany must either win or be ruined. So there is something in the German spirit to-day which is hardly equalled elsewhere.

Even the English observer cannot withhold admiration for Germany's military organisation. (The opinion of an English writer is here quoted concerning what Germany has done in industrial, financial as well as in military organisation).

Directly the war broke out Germany took over the monopoly of all cereals, and the local administrative bodies are allowed only to sell sufficient quantities of them to meet the requirements of their respective populations.

All things and materials of the slightest military value have been requisitioned, even to cotton and silk yarns. All the court festivities and banquets were abolished, the amount they would have cost being contributed to homes for disabled soldiers.

Young men between 16 and 18 receive military training under the discipline of retired officers, and men over 17 years can volunteer for the service without the consent of their parents.

The strictest restriction is exercised on travel and communication of people to exclude the danger of espionage.

Relatives of deceased soldiers are not allowed to wear mourning or to advertise their bereavements in the press.

War prisoners are employed in the reclamation of waste land, they are employed in ploughing some parts of parade grounds, parks, gymnasiums, etc., to increase the agricultural output.

The method of breeding cattle and other animals has been altered so as to diminish the consumption of their food.

Representatives of business men have met and sworn that they will not shrink from making any sacrifice needed so that their country may attain the object of the war. Industrial workers and agriculturalists have made the same patriotic pledge, that is to make any personal sacrifice necessary, and to do everything to prevent the prices of things unduly appreciating.

On August 13, last year (1914), the number of German volunteers reached, 1,300,000. (?)

Women have petitioned the authorities proposing that a women's national defence corps be organised to do home duties so that as many soldiers may be sent to the front as possible.

The greatest economy is exercised in every German home, even the refuse of food-stuff, if it is deemed eatable, is set aside for the indigent, while that part which is fit for the food of animals is also carefully stored for feeding cattle and other beasts.

For the benefit of families of soldiers, more than 100 cheap restaurants have been established by aristocrats and Socialists, and there meals are sold for between 12 and 18 *sen*. (Japanese cents.)

All public entertainments are restricted to those which inspire patriotic sentiments.

Various charity enterprises and subscription funds have been got up and liberally responded to.

Scholars are using their talents in defending their country's cause, in exciting the sympathy of other nations, and inspiring the people with martial spirit by books or lectures.

University professors are urging their students to volunteer for service, and some colleges have been closed owing to all the students going to the front. At the primary school, the teacher endeavours to give the students the latest information about the operations so as to keep up their interest in the war. Every class room has a map of the war and pictures of famous soldiers are hung up to excite admiration and adulation on the part of the students.

Scientists are taking the greatest pains to discover substitutes for the necessaries of life and war, the demand for which has increased out of all proportion to the natural supply. They are said to have succeeded in discovering many useful substitutes. (Many examples are mentioned.)

*France*. In France, Britain and Russia, the national enthusiasm displayed is no less keen than in Germany. Countless acts of patriotism, both public and private, have been recorded.

Particularly is this true in the case of France. The spirit of vengeance against Germany has been burning during the past forty years. Though there was some internal strife in the Chambers, the Government's bills were passed both in the sessions of August last and January this year. That the French people, who had a notorious reputation for flippancy, should now place implicit confidence in the conduct of the military authorities, and that not a sound of grumbling has been heard though the soldiers had led over a year's trench-life without making any marked advance, strikes us as a remarkable fact.

*The Times* correspondent at Paris wrote something as follows:—

> "Men from 19 to 48 have nearly all enlisted in the service, all work at home being done by women and old men. All motor omnibuses have been requisitioned and the traffic is covered by the old fashioned horse bus driven by old men or juveniles. Newspapers are sold only by women and children. Wealthy people and actors are doing charity work, and the distribution of food among poor families of soldiers is chiefly done by high-class ladies. Many cafes and restaurants are closed and Paris at night is unbelievably quiet."

The traditional frivolity of the French character has gone and is replaced by earnestness and steadiness of purpose. In the conversation of adults and the play of children you find the spirit of French patriotism.

*Russia*.—Russian patriotism was doubtless at a high pitch during the Russo-Japanese war, but the students were then more enthusiastic about social reforms, and towards the close of the war a revolutionary movement actually broke out which seriously interfered with the conduct of the war. In the present conflict, however, the Russian people are concentrating their whole energy on the war, free from all internal troubles. The Press in a chorus has declared that the German oppression of the Slav race has reached the last extreme, so that Germany, the enemy of humanity, must be exterminated in the interest of the world's peace, and that the Government and people, parties, Jews and Poles should combine in destroying their common enemy.

The name of the capital has been changed to signalize Russian animosity against the Teutons.

The veto on alcoholic drinks, which was suggested during the wars with Japan and Turkey, but not carried out, has now been put into operation. This prohibition causes the Government the loss of 670,000,000 *yen*, and those who were making their living by the liquor business numbered 200,000 not including 4,823,000 retailers. But, after the veto was enforced, the number of crimes and fires is reported to have greatly decreased, while the savings of the people increased.

All the famous palaces have been placed at the service of the Red Cross Society by their royal owners, to be used for the accommodation of the wounded. Throughout Russia so-called "provincial union associations" are organised under the control of Prince Ruoff (?) and these associations contributed 64,000 beds and necessary medical requisites. They are also constructing 50 sanitary trains. Some Government subsidy is allowed them, but more of their work is being paid for by the voluntary contributions of their members.

Scholars and students are doing their duty as readily as others. Twenty-five per cent of the students of the Peers' school at Moscow have volunteered for the front. Many students offered their services for carrying wounded soldiers and other work. At technical schools students are turning out or mending weapons or making chemicals for war uses. Many boys and girls also offered their services for war duties, some of them being decorated for gallant and meritorious services.

Our Lieutenant commander Edahara who has been with the Russian troops attests that the loyalty of the Russian people towards the Czar, being imbued as it is by religious sentiments, is perhaps more fervent than Japanese loyalty towards the Mikado.

*Britain*. Previous to the war, the situation in Ireland was assuming an ominous aspect. Bloody scenes had already occurred in Dublin, and there was a widespread fear of a civil war breaking out. All the papers of the Liberal and Socialist parties advocated neutrality and expressed anti-war views. But, once hostilities were declared, all the internal hubbub and journalistic fulminations vanished, and the whole Empire began to move towards the same objective of war. The Prime Minister fraternized with the leader of the opposition, and both appealed to the patriotism of the people from the same platform.

As regards the people in general, they reposed full confidence in the invincibility of their unrivalled Navy, and turning a deaf ear to foreigners' criticism of their army they are making deliberate preparations for a perpetual war, never flagging in their confidence of ultimate victory.

Within a month of the outbreak of the war, over 700 men connected with universities had gone to the front as volunteers. All public schools are giving military drill to the students and the inculcation of military knowledge is aimed at by every school. Juvenile battalions are being formed and boy scout movements are receiving warm support. General Baden-Powell is said to have prepared a scheme for creating a national defence battalion from the juvenile volunteers.

Women are taking the place of men workers in many branches of public work. As chauffers, railway porters, booking clerks, station masters, post deliveries, workers at factories, car drivers, and policemen the English women are working admirably.

Sir Gilbert Parker declares—"To destroy a perfectly organised state like Germany, nothing but the mobilization of every British resource in man and material will be effectual."

### 3.—Nationalism and World Politics.

*Nationalism*.—By nationalism we mean that attitude of a people, who possessing the same characteristics, language, customs, etc., realize their own collective interests and endeavour with mutual co-operation to share their common political destiny for better or worse. This doctrine holds that the people of one

country may differ from those of another in their political aspirations.

There have been many tyrannical rulers from the olden time who broke or tried to destroy the natural boundaries between people of different race and tradition, with the consequence that some very unnatural national combinations have been made. One of the greatest illusions which animated these tyrants was what may be called world subjugation.

After the collapse of Napoleon, it was suggested that a general re-adjustment of the confused boundaries of the European states should be effected upon the principles of nationalism. But this plan was not adopted, so that Europe relapsed into the chaotic state that preceded the French revolution. Thus it was that all the European embroglios which have since occurred are traceable to nationalism. The independence of Greece, Belgium and Italy and the building up of the German Empire were the results of the collective endeavours of people of the same races, customs, and languages to break through the yoke of alien rulers.

The fact that great Russia was vanquished by small Japan gave a strong impetus to the nationalistic instincts of many people. Revolutions have broken out in Turkey and China, and the Balkan states have seen outbreak after outbreak of a bloody nature. And yet the division of people does not as yet coincide with the division of nations. In various parts of the world, therefore, we see a dormant tendency to nationalistic revolutions. They are like the fire in the volcano, biding their time of eruption.

*World Politics.*—Napoleon was a worshipper of the world subjugation policy. With his strong nationalistic patriotism, tainted by his no less strong prejudice and superficiality, he endeavoured to accomplish his ambition. The *weld politik* of the Kaiser is a close approach to Napoleon's dream.

This scheme of subjugating the world, however it may seem, cannot be declared impossible of attainment if there appeared an extraordinary military genius endowed with unlimited power. Even in olden times, when communication organs were in the most imperfect condition, such men as Kublai Khan and Alexander the Great accomplished at least part of their world subjugation policy, so we cannot but think that the wonderful progress that has been made and is being made in all facilities of communication, is adding to the possibility of the conquest of the world.

### 4. The Combination of the White Races

If the realisation of the *weld politik* is extremely difficult, we must admit that it is possible that nations possessing the same or kindred languages and interests, customs, and belonging to the same or similar races, should combine in protecting their common or mutual interests against some nation or nations of different racial origin.

The German Emperor once proclaimed the "yellow peril," and Kuropatkin went further by asserting that all the nations of Europe should unite their forces to remove this peril to the peace of the earth, and that the Russo-Japanese war was only a prelude to a gigantic encounter between the white and yellow races.

We cannot altogether deny the possibility of the recrudescence of some such opinion among the white people. When they have experienced enough of the horrors of the present war, they will then see plainly the stupidity of fighting among themselves, and set about removing the cause of further trouble among themselves. As a first step towards this end they will devote their united efforts to bringing pressure upon the nations of other different races. They have already brought pressure to bear on different races. The historic crusade was a typical illustration.

The demands which Japan recently made on China while the European war was at its height seemed to have created a disagreeable impression abroad to the effect that it was a glaring instance of Japan's Imperialism. Above all, it must be remembered that China, which ever constitutes the spring of Asiatic catastrophes, is looking on Japan with a jealous eye and is trying to use white people as a tool to persecute Japan, quite forgetting that she is thereby unconsciously inviting her own ruin.

We need refer only to the conditions which may eventuate after the war. As we turn our thoughts to the anti-Japanese movements in America, the British movements in the South Seas, the Russian expansion in Manchuria and Mongolia, we cannot forbear entertaining the deepest solicitude in regard to the future of our country.

*Frobenew's Opinion.*—A few months before the outbreak of the war, a German Lieutenant Colonel, Frobenew by name, published a pamphlet entitled "German Empire's Crisis." Though it is a small brochure of less than 100 pages, it sets forth the possibility of conflict of interests between the Entente and Central Powers, prophesies the outbreak of a gigantic war, and, finally anticipating the rise of the Asiatic race, advocates that the whole of Europe should rise to protect itself against Asia. It is plain from this that the idea of the "yellow peril" has not as yet disappeared from the German brain. Following is the general purport of the pamphlet.

"*The World Conflict between Europeans and Asiatics.*"—"After the fall of the Roman Empire, various European nations of German and Roman blood had become leaders of the world's civilisation, and had been able to open to the world's civilization many uncivilized countries of exclusive policy, and at the same time plant their own political and spiritual influences in many foreign lands. But the history of national progress shows that a nation with enough spirit and energy often succeeds in adopting all the trophies of civilisation possessed by other superior nations, and finally in freeing herself from the leadership of those superior nations. The nations of Europe are in danger of being deprived of their place of command and of being driven back into the narrow regions they inherited from their ancestors. Unless the European nations combine to protect themselves against this danger, they will be getting closer and closer to disaster. We saw the germ of this peril in the Russo-Japanese war. We must expect to see some day a world conflict among the Europeans, Americans and Asiatics on the Pacific where Russia had been vanquished. The Kaiser said 'European nations should beware lest they should lose their own sacred soil.' His warning has a deep significance."

*European combination against the yellow race.*—"Every one will recognise the necessity of this combination. The different peoples of Europe should maintain friendly relations and restrain their respective ambitions relating to colonisation, acquisition of rights and territory, etc., in their mutual dealings, in case they should be threatened by their common enemy. It is scarcely conceivable that the nations of Europe should wrangle among themselves so much as to endanger their own life as a whole. But the international situation shows that the six Powers are keeping up their hostile attitude against one another, inflicting upon themselves the interminable rivalry of armaments. If once a war should break out between two nations, that would at once magnify itself into a huge world war, in which case it would be impossible for many years to come for Europe to resist the encroaching influence of that race from which we are already beginning to suffer........"

This kind of argument is typical of the propaganda which Germany will surely make, not only in Germany but among the whole white nations, after the war. When they really realize the folly of fighting among themselves, who knows but what this prophecy may be credited? If you read the following view of the "Round Table" you will find that such a thought is not exclusively German.

*The "Round Table's" opinion.*—When the problem of the United States of Europe was discussed in various European countries, it was maintained in England that the proposal was the best way of assuring peace and that it was not impossible of realization. The "Round Table" discussed the question somewhat as follows:—

"The pressure which the Powers bring to bear on the small inferior states always evokes indignation and resentment which gives rise to many complicated diplomatic problems.

"So it is necessary to protect these small inferior races, and enable them to retain their language and religion, and thus advance their respective civilizations and enjoy their rights.

"The common interests of the various states of Europe should be secured by their combination.

"And the object of their combination is to protect themselves against the aggression of their common enemy from the East and elsewhere outside Europe, and at the same time prevent the avarice and ambition of some Power asserting itself too much to the menace of other European nations.

"The first step towards this object is to limit the armaments of the nations to the minimum, and cut down the enormous expenses on war preparations which are driving many a nation to bankruptcy."

5. RECUPERATION FROM THE EFFECTS OF THE WAR IS COMPARATIVELY EASY

Many people say—"The losses which the belligerent nations are suffering from the present war will be so enormous that it will be extremely difficult for them completely to recover from their effects. From now on till the time when they shall have fully recuperated their strength, Japan can enjoy sound sleep in undisturbed security, and why should we have any fear at such a time?" Yes, the losses which the belligerents have suffered and are to suffer both in men and material, are very great, but at the same time, we must remember that their power of recuperation will also be greater than one is apt to think, because most of the war funds have been raised by domestic loans. After the war of 1870 France, it was feared, would have no power of recuperation, partly because of the severe moral blow inflicted, and partly because of the enormous indemnity she had to pay to Germany. But in 1875 France had already healed from the wound of the war, and was seriously meditating a war of reprisal on Germany. Russia's defeat in the Russo-Japanese war inflicted a heavy blow on her resources, but within ten years she had quite recovered from the wound, and is now actually fighting with the greatest military organisation ever known. As for Germany, she fought with Denmark in 1864, two years later was fighting with Austria, and in 1870 took France to task, and has ever since been making rapid strides in her national progress.

The moral and material losses which the present war will inflict upon the combatants will doubtless be greater than those of any war ever fought, but this is not sufficient reason to justify the conclusion that the process of recuperation will be slow and tardy.

It will not be uninteresting to examine the probable power of Germany's recuperation by studying her financial and economic resources, seeing that she is generally supposed to be suffering from the severest economic impoverishment.

*Germany's Power of Recuperation.*—(In this section of Chapter 1, the author presents many figures and calculations which tend to support his argument, that is, that Germany will not be so badly off financially and economically after the war as she is expected to be by her enemies.)

6. PACIFIC OPPRESSION

Let us suppose for argument's sake, that there will be no fear of armed aggression against us during the period between the close of this war and the recuperation of the Powers, however short that period is. Even if this be so, we can still see as clearly as we see light, that the persecution we are destined to receive at their hands will grow more and more severe, because of our isolated position in diplomacy and trade as well as in race. It is not quite true to say that the peril is coming after the war, for at this very moment we can already hear its flutterings at the door. When the white combatants shall have wearied of the war, when they shall have realized the stupendous folly of waging war among themselves, that is, when they shall have come to sit at the peace conference, then is the time that their erstwhile animosity directed against one another will be turned into a new and different channel.

## CHAPTER II

### RUSSIA'S EASTERN POLICY

It is hardly necessary to state here that since her defeat in the Russo-Japanese war, Russia had been busy preparing for a retaliative war against us (Japan). But now that the friendly relations of the two countries are growing apace, we do not like to recur to such a subject.

Still, though Russia is grappling with her formidable enemy with her utmost power and determination, she has not in the least abandoned her long-cherished scheme in the East.

*The Amur Railway.*—The construction of the Amur railway was decided upon in the year after the Portsmouth Treaty was signed. The work was started in 1908. In explaining the reconstruction of this railway in the Duma, the Premier, M. Stolypin, declared that Russia was a gigantic eagle with two heads, the one facing Europe and the other Asia, and that it was impossible for her to become a one-headed eagle. Lieutenant-General Boliwanoff corroborated the Premier's statement, saying that it was necessary for Russia to defend her frontiers, not only in an economic, but also in a strategic sense, and that in time of need the interior States should have the means to send their troops to the frontiers.

The building of the Amur railway was, therefore, completed in the spring of 1915, a year ahead of the programme. It covers a distance of about 2,000 Russian miles, and cost 234,170,000 *yen*, the time spent in construction being seven years. In May of 1915 the proposal to build a branch line of the Amur railway between Khabarovsk and Nikolsk was submitted to the Duma.

*Russia's Administration in Mongolia.*—While Japan was carrying on interminable negotiations with China, Russia had signed a treaty with China concerning Outer Mongolia. Thus by June, 1915, she had enabled Mongolia to obtain self-administration and at the same time had secured for herself an actual protectorate over Outer Mongolia. A perusal of the Sino-Russian treaty on Outer Mongolia will show the admirable tact with which Russia secured the actual right over Mongolia without hurting China's national pride.

In September, 1915, when the Russian arms at the eastern front were in the most desperate condition, her second line of defence being broken, and the Czar fighting at the front himself, the Russian Government made a new demand to China concerning the Ajitai district. The demand was a repetition of the proposal made last year as a counterpoise to the evacuation of the Russian troops from the same district. Its aim was to secure special rights, similar to those obtained in Outer Mongolia, in the district lying between Kapula, of Outer Mongolia, and Seciharatisk, of the Russian territory.

*Russia's Attitude towards the Sino-Japanese Negotiations.*—When the commencement of the Sino-Japanese negotiations was reported, most of Russia's influential journals showed an anti-Japanese tendency. They generally argued, especially the *Rach*, the *Biljevimedmosch* and the *Dayni*, that Japan was taking advantage of the European war in executing her imperial and continental policy, and that it was not to the best and lasting interest of Japan to take too much advantage of the absence of the Powers in the East, etc.

Nothing is further from our intention than to sound the alarm bell alleging that the Russian press is unanimously anti-Japanese and thereby dampen the improving friendship between the two countries, but we should not forget that behind the facade of our friendship there is still running such a dark current. Considering that the two peoples are of a radically different race and that the one country had for nearly ten years been swearing a war of vengeance on the other, it is both superficial and dangerous to imagine that international enmity of such a nature could vanish into air at a moment's notice.

If we have once resolved on a fundamental state policy we must be determined to carry it into effect even if we are compelled to make the rest of the world our enemy. As for the war funds that may be required for the execution of such policy, we believe it is the duty of our people to come forward gladly to meet them.

*The Russo-Japanese Alliance and Our Armaments.*—Mr. Denisoff, a member of the lower house of the Duma, after making a tour in the Far East in 1913, published a book called "Russia in the Far East," in which he argued on the folly of Japan and Russia quarrelling in the Far East and warmly advocated a Russo-Japanese Alliance.

After the outbreak of the European war, Russian confidence in our fidelity has remarkably increased, and this led to our supplying her with military accoutrements and munitions of war, and also to the dispatch of our Red Cross nurses to Russia.

And now Russia has no fear about her eastern frontiers. On the contrary she is enabled to concentrate all her attention on Western Europe. Thus it is that all the enmity which has hitherto been smouldering in the Russian bosom, as well as Kuropatkin's "yellow peril bogey," have been almost dispelled, and even the advisability of a Russo-Japanese Alliance is now discussed among certain sections of Russian politicians.

*The Russo-Japanese Entente.*—On the opening day of the Duma in August, 1915, M. Sosonoff, the Foreign Minister, declared that the Japanese press had been of late earnestly urging the advisability of a Russo-Japanese Alliance, that this sentiment was cordially reciprocated in Russia, and that the *de facto* alliance relations now existing between the two nations should prove a preface to the formation of a still closer alliance in future. His speech evoked great applause. The *Ruskoeslovo* commenting on M. Sasonoff's remark, wrote as follows:—

> If the two countries have found a community of interests geographically, there is no need to wait till the end of the war for the consummation of the alliance; that alliance which withstands the test of blood and iron is really the bond which shall guarantee the two nation's friendship forever. In view of the great effects which the war is exercising both on Russia and Japan, it is also essential that Japan should do everything in her power to bring the war to the earliest termination possible.

As this paper says, since *de facto* alliance relations exist between Russia and Japan, and both are fighting against the common enemy, there is no reason why they should not sign a document and consummate the alliance with the seal of a treaty. We doubt not that the triple alliance of Britain, Russia and Japan—which countries have great interests in the Orient—will constitute an efficient instrument for the solution of various Oriental problems which may arise in future.

*The Timeliness of the Alliance.*—Some people say that the desire to form a Russo-Japanese alliance at the earliest date possible is keen in Russia, whereas Japan has no need to accelerate such an alliance. But we are of the opinion that it will be absolutely impossible to see a more remarkable manifestation of Russo-Japanese friendship than that which we witness at present. This warm feeling, on both sides, may cool down after the war. If the two nations have any desire to perpetuate the friendly relations now obtaining, they will find no more favourable opportunity than the present day. Good chances seldom come, and we hope that the alliance will be signed at least before the present war ends.

*National Influence Should be Backed by Military Power.*—Some people are advocating an alliance with Russia as a means to solve our armaments problem. But alliances and ententes will be found of little value in time of international trouble. Even if the alliance be effected on terms advantageous to us, there ought to be no connection between this and our national defence problem. To connect the two would be a serious error. Just consider Russia's national ambition to secure a good sea outlet. It is a question whether she will obtain harbours in the Mediterranean and thus satisfy her long cherished desire.

On March 30, 1915, the representatives of the Russian aristocracy, holding a general conference at Petrograd, made the declaration that they believed that Constantinople and the Bosphorus and the Dardanelles should be ceded to Russia. But in the beginning of the attack by the allies on Turkey, Sir Edward Grey hinted that Britain should obtain Gallipoli and France the opposite shore, while the Dardanelles should be neutralized. The attack on the Dardanelles may be regarded as Britain's diplomatic thrust against Russia, and that being so we can understand why Britain transferred her troops from the principal theatre to employ them on this side-issue.

What is the actual power of Russia among the Allies? Is there any hope for her obtaining any influence in the Mediterranean? Supposing that owing to the favourable vicissitudes of the campaign, Russia should succeed in obtaining influence in the Mediterranean, she would by no means be content with that. Once her national resources are amplified she will invariably begin to think of the outlet for her Siberian Railway. She would not be content with the position of a single-headed eagle. But where she wishes to thrust up her Oriental head, there Japan is trying to extend her influence, to wit, in Manchuria and Eastern Mongolia. Once our power is relaxed, Rüssia's influence will burst out like an irresistible torrent.

We by no means subscribe to the opinion held in some quarters to the effect that after the present war, Russia and Germany will shake hands to wreak vengeance upon Japan. *But we assert that in order to maintain friendly relations with Russia and to share with her the rights and interests in amicable harmony we must rely upon our great and powerful military force.* An alliance cannot affect in any way the fundamental principles of our military preparedness. The best policy for Japan would be to place Russo-Japanese relations on a firm, friendly basis, taking advantage of our present improving friendship on the one hand, and on the other endeavour by adroit diplomacy to let Russia obtain some influence, in the Near East or in the Mediterranean, so as to mollify her ambition in the Far East.

We do not know what splendid plan is being evolved in the brains of the central authorities, but we hope that the compensation that Japan should demand from Russia for the assistance we are giving her now, will be this, that Russia shall give every possible security to guarantee the peace of the Far East.

## CHAPTER III

### The American Imperialism

*American Expansion.*—The history of the United States is the history of an absolutely expansive nation. The Republic was founded in the latter part of the 18th century and subsequently bought Indiana from France, absorbed the British Oregon, deprived Mexico of Texas, and California, and bought Alaska from Russia. Her Monroe doctrine has gradually been changing its hue until in the 20th century it has transformed itself into a regular imperialism. And this American imperialism has steadily been encroaching upon the Orient. It has taken such shapes as the annexation of Hawaii, the acquisition of the Philippines, and the occupation of Carolina and Guam. In 1899 Mr. Hay, the Secretary of the State, declared the principles of the "open door and equal opportunity" in China; Mr. Roosevelt succeeded in arbitrating peace between Japan and Russia; and, in January of 1914, Mr. Knox proposed the neutralisation of the Manchurian railways. Now the Panama Canal has been completed to give great facilities to the American navy.

All this is the natural and necessary effect of the remarkable advancement which the United States has made and is making, and we entertain no suspicion of ulterior motives on her part, but we must remember that the American expansion has a close connection with the growth of our country's influence.

We do not necessarily share Homer Lea's opinion that a war by military force will eventuate between America and Japan, but do believe that war in a non-military sense, that is, a pacific war of trade, will inevitably occur in the Orient between the two nations. And this pacific warfare will create a result that will be more terrible than a military combat itself.

*The Condition of the Anti-Japanese Movements.*—Our brethren in the United States are being persecuted with the many recriminatory treatments they receive at the hands of the Americans through the latter's racial prejudice. The rejection of the Japanese immigrants, the segregation of Japanese school children, the prohibition of the entry of the Hawaiian immigrants into America, the veto on alien's (Asiatics) land ownership, etc., are clear manifestations of American nationalism and of wilful persecution of alien races.

The obnoxious example of this recriminatory treatment is proving contagious in Hawaii where our brothers have attained a wonderful influence. Of the total Hawaiian population (190,000), the Japanese number no less than 88,000, which includes over 18,000 men who should have qualifications for suffrage. The yearly birth rate of the Japanese in Hawaii is 3,500. Of those engaged in the sugar industry of the island—45,000 in all—the Japanese constitute 60 per cent.

The Administration of the islands, being jealous of the growing influence of the Japanese, took advantage of the ignorance of Japanese labourers in imposing the rule that those infants who are not registered within six months of their births, have no right to become American citizens. This is clearly an exception to the American Constitution which provides that whoever

develop China's mineral wealth on modern lines, the "China Mines Laws" have been drafted accordingly.

The small miners of China are very numerous. It has been found in practice impossible under the existing Regulations to induce them to delimit and record their claims and to secure title. But they must still be protected. So it is provided, as to existing miners, that if in the future they neglect their duty to themselves and the law as they have in the past, they will nevertheless, when danger threatens, be protected by having a claim, of a fixed standard size, staked and recorded for them. At the same time they are free, if they will but comply with the law, to take as large a claim as the largest corporation. This protection continues for the next ten years.

The investment of foreign capital is by the laws in no way impeded. It is given the same opportunity as Chinese capital. To encourage the Chinese to invest their money and become partners in foreign mining corporations in China, the Chinese are to be offered the opportunity to take a quarter of the shares. All foreign corporations would welcome the Chinese as participants in their ventures and it is undoubted that it would be to the advantage of any foreign Company to have Chinese shareholders. If the Chinese do not care to participate in this way the foreign corporation may sell the segregated quarter of its shares, or so many as are not taken by Chinese, to others.

All minerals in China belong to the State. In many instances the surface rights of lands underlain with minerals belong to private owners. These latter's rights are carefully protected in the laws and when the surface is taken for mining purposes the private owner must be properly compensated. But in addition to this, and by way of most generous treatment of the private surface owner, the State, by the law, will pay over one half of the annual rent obtained from the person who leases any mining claim from the State, to the private owner of the surface, if such there be.

The foundation principle for any country to adopt if the system of giving out concessions to the few who alone can afford to purchase them is not thought wise, and the many are to be given a fair chance to acquire mining claims, is that which encourages the prospector. And equally important is it to make clear that when the prospector has found something he must be given a secure title, subject to the conditions that he obeys the law and pays a fair tax to the State.

The laws are framed to encourage the prospector and give him secure title. The prospector is the person who finds mineral deposits and he has been the foundation of success of all modern mining. Very few prospectors succeed, but the many go on with the search lured by the hope of gain. Those who find must be fairly treated or you kill off the race, and without them you cannot succeed.

The object of the laws is to secure all who will to prospect. Prospectors cost the State nothing and perform for it a valuable service. To secure his right the prospector must obtain a permit or license. A foreigner must produce a certificate from his Consul that he is a fit and proper person to have such a license, then he gets one.

Having discovered mineral the prospector stakes a claim and records it. No minimum size of claim is fixed, so that no one may be precluded from staking a claim no matter how small. On the other hand big operations can only be carried on by big plants and the cost of these must be earned out of the mine. The plants have a long life. To deduct their cost from earnings in a few years would leave no profits. The maximum size of claim must, therefore, be such as will permit of mining ore therefrom for a fair period of time, and this principle has been adopted in fixing the maximum size of claims.

To prevent claims being staked and held for speculation instead of being made productive, all lode claims, (these are for the most part metal claims), have to be developed by doing a fixed amount of work before final title can be obtained. And with the same object rents are increased from year to year during the early life of a claim, if the holder does not work his claim. If he does, the production tax his output pays, relieves him of the extra rent. The object of the laws is to make those who acquire properties work them or give them up, and so prevent taking up claims for speculative purposes only. What is aimed at is production.

After surveying his claim, and in the case of lode claims doing the necessary work, application is made for a lease. This is granted conditional on the payment of rent and production taxes to the State. After three years if there be no dispute the title becomes indefeasible except for breach of covenants of the lease. This affords absolute security of title. Coal and lode claim leases may be for not longer than fifty years, and placer leases for from one to twenty years. All leases are renewable if there still remains mineral to be worked. Holders of large placer areas are obliged to do a large amount of work and pay heavy rentals each year or forfeit their leases.

Nothing is more perplexing and nothing is more certain to check mining than uncertainty as to the amount of taxes imposed on the industry and on getting the product to market. Hitherto native customs dues and likin (transit dues) have proved a great deterrent. The principle is assented to of including these in the production tax, which when paid will permit of the transport of ores everywhere in China without further payment.

This easy transportation is essential if encouragement is to be given to the treatment and refining of ores in China, and no one doubts the wisdom of this. Reduction and refining must for the most part be done by customs smelters, that is, smelters which will treat the ores of any miner who can carry his ore to them. To further encourage home manufacture the production tax has been made higher on exported unmanufactured ores. By the old Regulations the production tax was one and one half per cent of the pit's mouth value of the ore. On the ore is the proper place to put the tax, but it did not succeed in practice because the older habit has been to collect the tax on the finished product or refined metal. In deference to the seeming necessity to continue this older practice the production tax has been placed on the finished product, although this means taxing manufacturing processes.

The value of the manufactured metal is often many times the value of the mined ore; the relative values depending in part on the process costs. To reduce a production tax of one and one half per cent of the pit's mouth value of any ore to its equivalent percentage of the value of the metal produced would give a different result for every mineral, but would bring the average much below one percent. So to reduce transit dues from two and one half per cent of the ore value to the equivalent of the metal value would bring down the percentage to about one. To embrace transit dues, native customs and production charges in one figure, two per cent of the value of the manufactured metal has been determined on.

This figure, two per cent, is too high; compared with other countries it is very high. But the Minister of Finance (then Mr. Chow Hsueh-shih) will consent to no figure which might result in reduction in present revenue. This policy which loses sight of an ultimate large increase in revenue from new business, is not one that would guide every one. But to this ruling it is necessary to yield, and so a production tax has been fixed which will not reduce the present revenue derived from mines. As a result tin and antimony must continue to submit to the present rates of taxation, both higher than two per cent.

When one realizes that one-half of all the freight traffic of the United States consists of the products of the mines, it is difficult to appreciate a policy as to taxation which does not aim at developing new mining business. Of every dollar spent on mining, ninety cents, or nine-tenths of it, is spent on work, material and transportation. The indirect benefits of the nine-tenths expenditure to the State is far greater than the one-tenth of profit to the person who originates the industry. The Commission would have been more encouraged if a further reduction could have been secured in the amount of production tax.

All that has been said of the too high production tax (including likin and native customs) applies with equal force to export duties. It is very desirable to bring the aggregate amount of taxes to which minerals are subjected to a reasonable amount. It has not been brought down to a figure which will

not continue to place China at a disadvantage as compared with the rest of the world. Likin, native customs, export duty, and coast trade duty at the tariff amounts now aggregate more than ten per cent of the value of the exported article. If the margin of profit for mineral industry is twelve per cent, and it is not more on the average, no one will put capital into a highly speculative, hazardous enterprise like mining for a possible two percent profit. Better to lend money on safe securities at six per cent, such as bonds and mortgages, which require no expenditure of time and technical skill, necessarily devoted to scientific mining.

As to export duty, what has been done is this: The tariff puts these duties at five per cent of the value, but the value was fixed long ago. The present day values of minerals are so in excess of the earlier values that the amount by tariff collectable as duty on to-day's value falls on the average to two and one-half per cent of this. So instead of concealing this important fact, the truth has been told by fixing the export duty at the actual or at two and one-half per cent of present day values. In this way the prospective miner is frightened as little as possible.

An interesting side-light on export duties is thrown by what has actually happened in China. Miners could not afford to pay even the collectable duties. The industry could not stand them. The consequence has been to bring about not a lowering of the duties but the granting of special privileges in numerous cases, cancelling the duties altogether. This had to be done because of the necessities of the cases in point. And the astonishing result is, when the figures are worked out, that if from the average export duty of two and one-half per cent, collectable by customs, there be deducted the duties not paid because of these special privileges, the actual amount collected averages one and one-half per cent of to-day's value of all the minerals exported.

It seems unfortunate to exhibit to the intending investor the possibility of having to pay a five per cent export duty when the real amount on the average is one and one-half per cent. In the law export duty has been placed at two and one-half per cent. I have said in so fixing this the truth has been told. Not all the truth,—the privileged persons were left out. Two and one-half per cent is too high and the earliest opportunity should be taken to reduce the duty. To cancel the special privileges and reduce the export duty to one and one-half per cent would be preferable, and result in no loss of revenue.

China's sale of minerals to her own citizens would be much increased if coast trade duties were abolished. Chinese and Japanese coals in vessels for example leave their various ports with the cost per ton about equal. The duties and rebates as they are to-day give the bulk of the coal business of the coast cities to Japan. Why continue coast trade duties? They are an imposition on China and injure her industries.

The Departmental machinery for working out the laws provides for the division of China into mining districts with a Recorder in each district. An Inspector's department is arranged, members of which will move about to wherever it is necessary to make inspections and reports. The Director of Mines has charge of everything at Peking under the Minister.

All disputes are to be settled by the Recorder in the first instance. If the parties are not satisfied with his decision they may appeal to the Director of Mines and provisions for original hearings and appeals are worked out in detail. If the parties are even then dissatisfied they may settle the dispute themselves by appointing each an arbitrator and these two appointing a third arbitrator whose decision shall be final. If the parties fail to agree on a third arbitrator the Minister of Mines appoints one of his foreign technical advisers who has been not less than two years in the service of the Department.

Provisions are contained in the laws for the acquiring on proper terms as to compensation, all rights necessary to carry on mining operations, such as surface rights, timber rights, water rights, drains, tunnels, road rights, rights of way and easements; and a Schedule of fees is included.

## NEW SIBERIAN PORT

The port of Nikolaievsk, at the mouth of the Amur River in Siberia, which will be opened for navigation on June 14 will provide a new channel for foreign goods and war munitions to reach the Russian market. The opening of this port will materially relieve the terminal yards of the Trans-Siberian Railway as it is anticipated that much of the freight which has been going to Vladivostok during the winter months will now be diverted to the new port. Here it will be transshipped to river boats and transported up the Amur to Stretyinsk, where connection is made with the Amur railroad line, a part of the Trans-Siberian Railroad system.

## JAPAN TO WORK CHINA MINE

An agreement for developing the Taochung Iron Mine under Japanese control has been arrived at. The iron mine to be worked is situated at Taochung, Fanchang-Hsien, Anhui Province, and contains more than 60,000,000 tons of ores which are said to contain 65 per cent. of pure iron against the 60 per cent. usually contained in Taya ores. The negotiations which the Sino-Japanese Industrial Development Company has carried on since 1914 with the Chinese authorities have recently been satisfactorily concluded, and the rights to work the mine have been definitely conceded.

As to the management of the mine, the company has decided in view of the provisions of the company's articles of association, that the rights shall be transferred to some other private business corporations.

## F.M.S. TIN EXPORTS

The export of tin from the Federated Malay States during the month of March amounted to 3,696 tons compared with 3,313 tons in the previous month, and 3,653 tons in the corresponding month last year. The following is a comparative table showing the export tonnage for three years:—

| | 1914. | 1915. | 1916. |
|---|---|---|---|
| January | 4,183 | 4,395 | 4,316 |
| February | 3,555 | 3,780 | 3,313 |
| March | 3,839 | 3,653 | 3,696 |
| Total | 12,377 | 11,828 | 11,325 |

## NEW SOUTH WALES FISHERIES

The Government deep-sea fisheries inaugurated by the State of New South Wales, have proved a success in providing cheap fish for the people. In one week three small trawlers landed 65,000 pounds of fish, one boat alone bringing in 15 tons, which is said to be more than a similar boat would catch in the North Sea.

## SIZE OF JAPAN'S CITIES

The Yokohama municipality has announced the census returns in the six big cities in Japan at the end of last year, as follows:

| | Population | Households |
|---|---|---|
| Tokyo | 2,244,796 | 584,709 |
| Osaka | 1,460,218 | 309,037 |
| Kyoto | 539,153 | 93,864 |
| Kobe | 498,317 | 114,162 |
| Yokohama | 428,663 | 89,001 |
| Nagoya | 389,272 | 91,258 |

# THE FAR EASTERN REVIEW

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## TRADE POSSIBILITIES IN CHINA

Arms are being vigorously furbished for the great commercial combat which is destined to take place after the war; and one of the greatest battle fields will be provided by China. Already the emissaries of various prospective protagonists are abroad in the land reconnoitring and laying their plans, either searching for new avenues for trade or preparing to take what was previously held by the Germans. Probably the most active at present are the Japanese. Not only does territory attract them, but also they have special reasons, apart from those of a purely economic character, to see the trade statistics of Japan in China head those of any other country. Great Britain has long held supremacy in this direction, and the signs are that she will endeavor to maintain it. Her merchants will, naturally, make every effort to capture the German trade, and in that particular direction will be accompanied as far as possible by their Allies. It is certain that Germany will not for many years be able to carry on the systematic campaign which characterised her activities before the war. Then her representatives virtually stopped at nothing to get the business, though in many instances they demonstrated an enterprise and an initiative such as has not been exhibited by their older rivals in the field. It is not for a moment suggested that all of those methods ought to be copied. Many of them were far from savoury. The system of giving long credits, of providing goods inferior to sample, of bribery and corruption, of indulging in speculation, calls for the strongest condemnation. In the latter connection it is recorded that German firms at Hankow have sold export produce in Europe and America long before it has been on the Hankow market, or before it has been grown.

An aspect of German trade, which is worthy of note, however, is the co-operation which existed between the merchants and the industrial banks in Germany. This union of interests has helped the merchants to establish themselves well where they trade, providing adequate godowns and up to date equipment to carry on a business which requires a large volume and small profits to enable the extensive foreign staff and costs of installation to be paid. In the machinery trade German manufacturers established themselves firmly chiefly because of their liberality to the purchasers in the matter of credit, and as often as necessary in accommodation of a financial kind in effecting the installation of plants. The fact that such a practice is able to be followed indicates the close connexion obtaining between the importing houses and the financial establishments in Germany. With most other nationals the importer has to bear the responsibility and take the risks attendant upon financing purchasers. The manufacturer invariably refuses any assistance in this regard, and because industrial development is so backward and because people with capacity to start industries are invariably short of the capital to acquire the necessary plant they are driven to the source where they can obtain the required assistance. The American and the British manufacturer pursue the not always primrose path of conservatism and decline to meet the needs of the time, even refusing, in the majority of cases, to provide sample machines for exhibition purposes.

In these respects some change is essential if trade is to be expanded and industries in China developed. Provided financial assistance is available there is abundant opportunity for the installation of manufacturing plants, the financiers being able to stipulate what and where machinery should be bought, and have the control of the established factory until the equipment has been paid for. This is an aspect of trade which must receive attention, and which calls for the co-operation of banker, manufacturer and merchant. German houses did extensive business along these lines and gained the premier position in many places. Another method followed by Germans was to send men into the interior to study conditions, to pave the way to meet the demands of the market, and to give advice to prospective purchasers. The merchants or manufacturers were content to pay men to sit tight in various localities for considerable periods without becoming flustered because no orders were forthcoming. The men thus paid were able carefully to develop the field, the first order obtained bringing sufficient to cover

expenses to-date and more. Where the Germans have taken participation in manufacture they have, where profits have been obtained, secured their share, and it was consequently to their interests to see to it that the factories thus established were well and economically conducted, a matter to which their representative gave careful attention. Not only does this practice tend to a wider sale of machinery but it also makes for the adoption of German methods of manufacture, and can be calculated to create a predilection for German material.

The time has now come when the manufacturers of America and Great Britain should recast their systems of doing business in the East. Old-time methods which made fortunes for the few who then fared this far forth to harvest what there was to reap can not stand the keen competition which modern development has created. The manufacturer who desires orders must now be prepared to supply what the market demands and must be prepared to suffer disappointment if he imagines he will be able to compel the market to take what he manufactures. The Germans discovered this secret of getting on with the Chinese early in their career in this field, and they have done what they could to meet the wishes of prospective purchasers, with the result that they managed to work up particular lines in which they held virtual monopolies. In this direction manufacturers who desire to enter the China market might very profitably make close investigation of possibilities. There is a tremendous field for enterprise, not limited in any direction. The country is not one of vast virgin spaces like Canada and Australia. It is thickly populated; is studded throughout with cities, and towns and villages, and wherever there is arable land there is intense cultivation. The purchasing power of the people is not high, but there is a great demand for necessaries which cannot yet be made in this country, and that demand can be considerably increased if systematic assistance can be given in the development of industries. The standard of living will rise in proportion to the number who can find support in other avenues than cultivation, and it is to the interests of all manufacturing and trading countries to see to it that China is assisted to expand along the lines that have made for wealth in other parts of the world.

America and Great Britain will find Japan their keenest competitor after the war. That country has taken the greatest advantage of the occupation of others during the war to consolidate her position, but unfortunately for her suppliers the politicians have been so eager in pursuit of their desires and forgetful of the best interests of their manufacturers, that they have managed to alienate the friendship of the Chinese people. However, Japanese are peculiarly equipped to deal with the Chinese if they find it essential to cultivate friendly relations. At the moment they are depending upon the tactics of the bully, trusting that they will pay. The day is very likely to come when they will discover that they have erred, but once that day dawns the Japanese will adapt themselves to circumstances without loss of time and will at all costs readjust their relations so that they will be able to meet competitors. There is, of course, room for all in China for very many years to come, but it behooves those who wish to establish themselves thoroughly to take the necessary measures promptly and effectively.

There are signs that the British and the American manufacturers are waking up to the desirability of a change of methods. Both now have Chambers of Commerce established in Shanghai, and elsewhere, and both are preparing to develop trade as it has not been developed before. The war has materially handicapped the British for the time being but they are preparing for the day when they will be free to unleash their capital. The Americans have shown more activity with capital during recent months than at any time since their advent in China, and representatives of large American financial syndicates have been in the country investigating possibilities, and more are apparently coming.

In another article we specially deal with the desirability of co-operation between Great Britain and America in this country. Great Britain has been seriously affected by the war, and from the blood of Great Britain and her allies Americans have drawn riches undreamt of, and there is evidence that this fact is not unrealised by Americans. Because of this, and more because the two nations constitute the great Anglo-Saxon race, it is to be hoped that some unity of action in such a field as China will be possible. It is a development that would be a God-sent gift to China, and a consummation which statesmen might well burn the midnight oil to effect.

Reporting on Germans and the machinery trade of Hankow the British Consul-General says:

"In the case of more inportant classes of goods, such as engineering material, electrical machinery and the like, their success is undoubtedly due to very extended credit terms, payments in some cases being spread over five, seven or even ten years. It is again reasonable to suppose that the burden of such a system of credit is not borne entirely by the importing houses and that it points, indeed, to a very close connection between the latter and the German manufacturers, who must also bear their share.

"To these hazardous but still legitimate and possibly praiseworthy methods of business must be added others, which reputable British firms have never been willing to adopt. It is notorious that the large German importing firms make a practice of paying retaining fees to high officials in Peking and other important centres in order to obtain business, and few business men in China would be disposed to deny that perpetrators of the even more corrupt practices, common in the expenditure of official or trust funds in this country, find willing coadjutors in the German firms who capture the orders.

"Coming to the question of German and British goods as distinct from German and British importing houses, one finds that German manufactures enjoy an advantage due to the application of a similar principle. German manufacturers seem to be more alive to the requirements of the Chinese market and to be more willing to assist the merchant on the spot. I have already referred to the question of credit. Much machinery of British origin is and has been imported through German firms. The latter, however, also represent German manufacturers and are naturally prone to push German in preference to British goods wherever possible. German manufacturers gain many advantages by being willing to send out free to their agents on consignment samples of even large machines. If the machine is sold, so much is gained; if not, it remains on show. Samples of British machines, even for show purposes, must nearly always be purchased by the importing firm. The firm which attempts the business has to suffer the locking up of a large amount of capital, in which the British manufacturer refuses to contribute a share.

"The German manufacturer again is generally more alive to the importance of sending out catalogues which are fully illustrated and descriptive of his products, and which contain information to enable a customer with perhaps only a superficial knowledge of engineering to select the exact plant which will suit his requirements both with regard to output and cost. In this connection a British merchant suggests to me that British manufacturers would do well to consider the preparation of separate illustration sheets, each dealing with one particular machine, which can be given to prospective purchasers. The Chinese buyer, he says, always wishes to have a picture of the machine he is purchasing, and the sheets might advantageously contain a short description in Chinese of the particular machine illustrated.

"Another factor operating to the advantage of German manufacturers is the fact that German firms are in general more willing to finance Chinese enterprises, especially of a semi-official or official nature. It is made a condition of these contracts that the whole of the machinery and supplies for the period of years covered by the loan shall be purchased exclusively from the firm advancing the funds. This leads to the consideration, which is ultimately the reason for the greater activity of Germans in all branches of trade in China, namely, their lack of colonies and dependencies as an outlet for their capital. It is argued that British firms are able to make use of their resources with greater security and profit in other parts of the world. The examination of this explanation for the comparative neglect of China trade is, however, outside the scope of this report.

"In concluding my remarks on the present preponderance of German enterprise I would draw attention to the advantages

reaped in the import business by the presence at places far inland of Germans primarily employed in purchasing export produce. These men, the majority of whom speak Chinese, are all over the country in places unvisited except by missionaries and travellers, at several places on the Upper Yangtse and at Chengtu, 2,000 miles by water from the coast. They have unparalleled opportunities for gauging the possibilities of extending the use of German goods and for soliciting orders for machines and the like. It is unlikely that they do not make full use of their time. Their principals adopt that wise policy of not expecting immediate business and are often content to keep an agent for months in some provincial station waiting for orders, which when they do come, more than pay for the delay.

"The effect of the war on the German import business has up to the present been slight. It is true that supplies from Germany and Austria-Hungary have been cut off and this fact must inevitably sooner or later give an impetus to British manufacturers. Up to the present, however, the losses thereby inflicted on German as compared with British firms have been minimised by the fact that the stocks held in the Treaty Ports and by dealers in nearly all branches are very heavy, and no new business is being done even in British goods. The heavy fall in the value of silver has accentuated the stagnation and further difficulties arise from the fact that up-country dealers are holding out for higher prices for existing stocks. Moreover, prices of export produce have on the whole fallen so that in addition to general tightness less money is available for purchasing foreign goods. It will be seen that the immediate prospects of the import trade are not favourable.

"The following articles imported into Hankow have hitherto been largely of German or Austrian origin:—Machinery of all kinds; small tools; hardware, such as galvanised corrugated and flat sheets, wire nails, wire, steel plates, rods and bars of various sections, window glass, nail rods, copper and brass bars and sheets; needles; Berlin wool; braid; buttons, ribbons; trimmings; lamps; soap; wash-basins and enamelled ware; aniline dyes; beer; chemical products; electrical material and fittings; cups and saucers and generally small metal goods of inferior quality and low price.

"German manufactured piece-goods and fancies imported here consist chiefly of cheap waste-cotton printed blankets and small sundries such as baby caps, vests, men's caps and hats, etc. The particulars of the blankets are as follow:—

Size: 58in. wide by 80in. long.

Weight: From 2lb. to 3lb., the most popular being 2lb. and 2½lb.

Retail prices in Chinese shops:—

| | |
|---|---|
| 2lb. | $2.00 each—about 3/5 |
| 2¼lb. | $2.20 each—about 3/9 |
| 2½lb. | $2.40 each—about 4/1 |
| 2¾lb. | $2.80 each—about 4/9 |
| 3lb. | $3.25 each—about 5/6 |

"Cotton trouserings are imported also from Austria and Italy.

"Most of the trade in imports is done with dealers in Hankow and the exploitation of the interior and treaty ports further removed from the coast is left entirely to them. There is no doubt that the business could be much expanded if this exploitation could be undertaken to a larger extent by foreigners. The firms in China, being merely merchants, are not in a very good position to do this, unless they are materially assisted by manufacturers and exporters at home. Some lines, of course, lend themselves better than others to this treatment. A considerable amount of organization is necessary. That of the kerosene oil and cigarette trades is admirable, and one firm has found it pay to recruit its staff to a considerable extent from the Universities, placing the men from the start in positions of responsibility. Some firms again have been very successful in organizing up-country agencies under Chinese merchants for the sale of sewing machines, knitting machines, patent medicines and the like. Many other articles could also find an extended market in this way. It would, of course, be essential that the goods should be sent out on consignment to agents."

## ANGLO-AMERICAN CO-OPERATION IN CHINA

There is general belief that the end of the European War will see the beginning of an economic struggle not less bitter in its intensity. All the belligerent nations will have used up a large percentage of their capital, and will seek to make good their losses in the least possible time. If every nation acted independently the military hostilities would be followed by a commercial war in which the hand of each of the commercial nations would be turned against all others, erstwhile enemy and ally alike. From every point of view this would be undesirable, and in fact would be liable to bring about, sooner or later, another appeal to arms. As a precaution the Entente Powers and the Central European Powers respectively have already begun to formulate plans for concerted economic action. The Germanic States are endeavouring to form a Central European Customs Union to oppose an economic combination composed of Great Britain, France, Italy, Russia and Belgium. There seems to be some doubt whether Japan will join the latter combination. It is also impossible as yet to say what effect this concerting of economic effort would have upon commercial affairs in China.

Assuming that Great Britain will not lose her freedom of commercial action in China after the war as a result of arrangements made with her allies, a most favourable opportunity will be presented for closer association between British and American interests. Both countries are pledged to maintain the independence of China and the policy of the Open Door. There are other countries so pledged, but, as far as the Chinese are concerned, it is to America and Great Britain that they look with most confidence for a due performance of their undertakings. Neither country is suspected of political designs, nor of a desire to acquire territory at China's expense. Their interests are purely commercial, and the Chinese, consequently, are inclined to welcome the investment of American and British capital. They feel that the larger the material interests of Great Britain and America become in China, the greater the assurance that the country will be allowed to work out its own political salvation without interference. However large such interests became, the Chinese feel confident that there would be no danger of the establishment of exclusive spheres of influence, or the impairment of China's sovereignty by the creation of railway zones. It is certain, therefore, that the Chinese would heartily welcome the co-operation of America and Great Britain in the work of developing the resources of China.

Co-operation would obviously be more beneficial to the two countries concerned than competition. As they have common commercial ideals there would be little difficulty in arranging the terms on which they could work together. The compact would be commercial and not political, and consequently its arrangement should not be more difficult than was that of the associations of American and British capital that already exist. The splendid position of the British-American Tobacco Company to mention but one successful joint organization, is a proof that co-operation is not only possible, but may be attended by striking success. There would be no need for direct support from the Government of the two countries. Their goodwill would, of course, be desirable, and it is certain that it would be freely extended. The British, having been longer in the field, would be able to contribute to the common fund, besides their moiety of the capital required, a vast store of knowledge and experience of local conditions, while the Americans would contribute commercial alertness and familiarity with huge financial and engineering undertakings. Such a combination, reinforced by the goodwill of both their Governments and of the Chinese people, would be in a commanding position. The combination would need to have available a large capital fund, and it would be desirable for its constituent parts to consist of a number of strong financial concerns and leading manufacturing and contracting houses of both countries. British manufacturers in recent times have found it advisable to form combinations in which several firms in non-competitive lines are associated. The same principle could be applied to the international combination. For individual firms, and even for

small combinations, the initial cost of establishing branches throughout China is practically prohibitive. But it is essential that any concern that wishes to carry on business on a really large scale in China should be represented in every important centre, and this could easily be accomplished by a combination on the lines that we have suggested. Co-operation of British and American interests in China on an extensive scale is feasible and desirable, and it is sincerely to be hoped that no economic arrangements resulting from the war will prevent its inception.

## THE FINANCES OF CHINA

The declaration of a moratorium by the Chinese Government on May 12 was not altogether unexpected. In the provinces in which independence has been declared the branches of the Bank of China and of the Bank of Communications were taken over by the revolutionaries. It is stated, probably with justification, that in these branches were large quantities of notes that had not been issued, which were immediately placed in circulation. Furthermore it is alleged that the subjects of a certain Power, that has shown rather more than platonic sympathy with the revolutionaries, have been accumulating the notes of the two banks in question with the object of creating embarrassment by suddenly presenting a gigantic number for payment.

Apart from sinister activities of this kind, the action taken by the Yokohama Specie Bank in withholding payment of the surplus salt revenue which Sir Richard Dane had certified might safely be handed over to the Chinese Government, caused serious difficulties. Although the amount withheld was not of itself of great importance, the action of the Japanese bank practically compelled the other banks in the Consortium to announce that in the future they would follow its example. Thus the Chinese Government found itself deprived of a monthly revenue of several million dollars at a time when, for obvious reasons, ordinary revenue collections were below the normal. In such circumstances it was deemed the part of wisdom to take the steps necessary to conserve the silver in the possession of the national banks. It is declared that the banks hold sufficient silver to meet foreign engagements for several months to come, and to pay the army. China's credit depends upon her ability promptly to discharge her obligations to foreign investors, and, though it sounds paradoxical, the declaration of a moratorium was regarded by the Government as necessary to preserve her credit.

Apart from other considerations, it is regrettable that a financial crisis should be created in China by the action of one of the foreign concerns which obtained certain powers by the terms of the Reorganisation Loan Agreement. The Chinese have always been bitterly opposed to the idea of an extension of foreign control over the finances of the country. The excellent results obtained by the co-operation of foreign and Chinese officials in the administration of the salt monopoly has, however, convinced responsible Chinese that, without parting with control, they can with advantage make full use of sympathetic foreign assistance in the collection of revenues. Had nothing occurred to prevent it in all probability foreigners would, in the near future, have been engaged to reorganise other revenue producing services. Undoubtedly this possibility has been rendered more remote by the action of the Consortium taken at the instigation of Japan. The Chinese are naturally inclined to doubt the benefit of reorganizing their revenue producing departments if the increased revenues can be withheld upon the initiative of any Power that professes anxiety with regard to China's ability to meet her engagements. The danger of political considerations operating to create such anxiety is obvious.

While the financial situation in China is far from bright, it would be easy to be unduly pessimistic. The European War has adversely affected the Customs receipts, but it is reasonable to expect that they will show an unprecedented increase when the belligerent Powers transfer their activities to the commercial arena. Moreover the differences between the Central Government and the independent provinces must be settled sooner or later, and with the restoration of normal conditions the revenue will also speedily become normal. Notwithstanding the loss caused by dislocation of trade on account of the unsettled conditions, there has been no large amount of actual destruction of wealth during the hostilities in the South of China. For these reasons the financial future of China is less gloomy than it would appear to be from superficial observation.

## CHINESE EASTERN RAILWAY RETURNS

The returns of the Chinese Eastern Railway for the conveyance of passengers, luggage and goods, for the year 1915, are as follows:

| | | |
|---|---|---|
| Passengers, by general and reduced tariff, including immigrants and military people .. .. .. | | 1,286,655 persons. |
| Luggage and parcels .. .. .. | | 386,515 pouds. |
| Amount collected for the conveyance of passengers and luggage | Roubles | 5,613,738,98 |
| Various goods transported .. .. | | 139,563,251 pouds. |
| Increase over 1914 .. .. .. | | 57,084,268 „ |
| Total Amount collected, including various other items of revenue independent of the tariff, and receipts from supplementary undertakings .. .. | Roubles | 37,802,413,37 |
| Increase over 1914 .. | „ | 13,965,286,29 |
| The net profit is expected to be about.. .. .. | Roubles | 18,000,000 |

Following is a statement of the totals of receipts and expenses from 1911 to 1914:

| Years | Receipts. | Expenses. | net Profits. |
|---|---|---|---|
| 1911 | Rs. 19,577,429.51 | Rs. 15,830,971.65 | Rs. 3,746,457.86 |
| 1912 | 20,353,023.84 | 15,434,360.94 | 4,918,633.90 |
| 1913 | 22,797,535.57 | 15,575,166.44 | 7,222,369.13 |
| 1914 | 23,837,127.08 | 15,891,980.15 | 7,945,146.93 |

Some details as to the traffic in cereals over the Chinese Eastern Railway also have recently been made available and show that the amount of produce carried by the Chinese Eastern Railway during 1915 totalled 32,096,288 pouds, beating the previous record of 26,000,000 pouds for the season 1911-1912 by more than 6,000,000 pouds. It is noticed from the past experience that the European War has had only an inconsiderable effect on the transportation of export produce by the Railway. Statistics for the last season compare with those for the preceding one as follows:—

| | 1913-1914 Pouds | 1914-1915 Pouds |
|---|---|---|
| **Booked to Vladivostok.** | | |
| Beans.. .. .. .. | 24,039,935 | 23,032,102 |
| Other cereals .. .. | 2,127,974 | 4,192,959 |
| **Transferred to S. M. Railway** | Pouds | Pouds |
| Beans.. .. .. .. | 413,694 | 6,544,354 |
| Other cereals .. .. | 1,720,251 | 2,667,449 |

The 1914 report goes into still further details as to the diverse character of the traffic in agricultural products in the region traversed by this railway. The 1914 production seggregated under the chief areas of origin is as follows:

| | via Pogranichnaya pouds | via Manchouli pouds | via Kwanchengtzu pouds | Total pouds |
|---|---|---|---|---|
| Wheat ... ... ... | 2,992,80 | 34,300 | 762,000 | 3,789,170 |
| Oats ... ... ... | 170,900 | 37,200 | 200 | 208,461 |
| Millet ... ... ... | 464,800 | 200 | 300 | 465,440 |
| Kaoliang ... ... ... | 61,300 | 13,100 | 13,300 | 87,865 |
| Buckwheat ... ... | 105,110 | — | 9,300 | 164,458 |
| Barley ... ... ... | 69,600 | 1,000 | 10,600 | 81,290 |
| Maize ... ... ... | 86,600 | — | 1,600 | 88,318 |
| Sweet peas ... ... | 22,900 | 3,600 | — | 33,554 |
| Beans ... ... ... | 17,179,000 | 13,700 | 1,869,200 | 19,061,900 |
| Flour ... ... ... | 73,500 | 8,800 | 700,100 | 782,587 |
| Wheat bran ... ... | 36,000 | 800 | — | 36,888 |
| Bean Cake ... ... | 1,488,000 | — | 20,200 | 1,508,345 |
| Seeds ... ... ... | 508,500 | 5,500 | 3,800 | 517,915 |
| Sundries ... ... ... | 2,100 | 2,300 | 1,300 | 5,789 |
| Total ... ... ... | 23,311,700 | 90,500 | 3,392,300 | 26,825,140 |

# CHINA REVERTS TO REPUBLICANISM

## Factional Struggles for Power

The appointment of what is called a "responsible" cabinet under the Premiership of General Tuan Chi-jui, as announced in the last issue of the FAR EASTERN REVIEW, gave satisfaction to the North, but was received with disapproval by the Independent Provinces. They demanded the retirement of Yuan Shih-kai and were not ready to consider any step calculated to retain the man whom they regard as their arch-enemy in a position of power. There was, however, nothing in the shape of a policy given out by the new Cabinet which could be construed as an intention to retain Yuan Shih-kai in the Presidency. On the contrary the Premier, in an interview with the Editor of the FAR EASTERN REVIEW, plainly stated that the matter of the Presidency would be left entirely to a new Parliament to be called somewhere about July. In reply to a definite question as to the powers of the Cabinet and the possibility of interference by the President, it was stated that not only was the Cabinet the master of its own actions, but that President Yuan Shih-kai would not attend any of the meetings. The Premier also stated that the control of the army had been relinquished by Yuan Shih-kai and that no matters would be referred to him unless they were of great national moment and then only for discussion. The President also declared to the editor of this paper that he had handed over all power to the Cabinet, and stated when questioned as to the actual control of the army, that the Parliament and the Cabinet would be the ones ultimately to decide that point.

Similar declarations were publicly made but they were received with the utmost scepticism by the South, the accusation being made that the new Cabinet was but a perpetuation of the old regime under a different cloak. This allegation was founded, of course, on the fact that financial control still remained under the direction of Mr. Liang Shih-yi, without whom, the Premier asserted to various foreign ministers, it was impossible for him, or any one else, to proceed.

Through different mediums Yuan Shih-kai let it become known that he was ready to retire when arrangements could be made, and when a Parliament had been constituted which could take charge of Government affairs, but no confidence was placed in any statements of this kind, lacking as they did the support of an outright public declaration. It was contended that no public announcement of this nature could be made by Yuan Shih-kai for the reason that certain military forces were almost sure to express their disapproval in methods not calculated to make for peace and harmony and happiness in the Capital, to say nothing of other large Northern cities. In other words it was feared should it be known to these certain forces that their old founder was being displaced, that they would begin an orgie of looting which might lead to burning and killing. Could it have been possible for Yuan Shih-kai publicly to announce his readiness to retire the chief difficulty with regard to a settlement between the various provinces would have been removed. The uncertainty had disturbing effects throughout the country and constituted a fertile source for all manner of rumours.

Telegrams and letters from various provinces and people were received in Peking urging Yuan Shih-kai to retire. Among these was one from Mr. Chang Chien, Ex-Minister of Commerce, Agriculture and Industry, and one of the "four friends" of the President.

### Dr. Wu Ting-fang Speaks

Another was from Dr. Wu Ting-fang, who it will be remembered, figured largely in the 1911 Revolution. His letter was a lengthy one, but the substance of his contention is as follows:—

(1) The prospect of restoring peace by means of military strength is a very doubtful one. The prolongation of the struggle may give rise to International complications which may again result in the long-feared disruption of the country. In the latter event, Yuan would be alone to blame in spite of his claim to have acted according to his sense of patriotism.

(2) The leaders such as Tsai Ao, Liang Chih-chao and Tang Chi-yao of the anti-monarchical risings in the provinces, are sincerely desirous of political reforms and, being all men of unimpeachable reputation, are not bent upon self-interest as common rebels and robbers are. The policy "Fight to the last" may be criticized by International public opinion.

(3) War has always caused suffering and misery from time immemorial to the people of both sides. Why should a man, who loves the people as Yuan does, be so obstinate as to sacrifice tens of thousands of lives and tens of millions worth of property simply in order to uphold his own opinion?

(4) The wholesale emigration of people to foreign settlements and other places tells eloquently the pitiful plight in which they are put. The merchants have their business calculations upset. This condition of affairs will, if not soon amended, very likely cause universal dissatisfaction amongst both Chinese and foreign merchants. Yuan should bring himself to understand that all these evil consequences have been caused simply and solely by his unbridled ambition.

(5) To resort to military force, supplies of munitions, money and men must be maintained. The European War precludes the possibility of purchasing arms from abroad, while the capacity of manufacturing them at home is very limited and the reserves now held will soon become exhausted. The same handicaps may apply to the question of funds as regards foreign countries while few Chinese would care to subscribe to any Home Loan at the present time of crisis. As to "men," since the heart of the people is already quite alienated, the heart of the soldier will also become disaffected.

(6) Even assuming that a military campaign may lead to results gratifying to the Government, the people will then only fear but never love their rulers. They may even express contempt for power acquired in this manner. The loss of the people's affection would soon be followed by an aggressive and insolent attitude on the part of foreign countries. Orders would be ignored, and what relish would there be then in pursuing such a policy?

(7) When more provinces had risen against the Government, and when the clamour of the whole nation for the President to abdicate had become louder and more irresistible, the President would lose yet more "face" then. Better devise a more dignified way to retire at once. There is always a time for the actor to exit. Why not now?

(8) As regards any fear that no qualified person will be available to succeed the President, this fear is misplaced. The Provisional Constitution stipulates that the Vice-President shall act as President when the President vacates his office. Vice-President Li Yuan-hung, who was the first man who rendered meritorious services to the Republic, and whose kind heart and upright character have won the respect of all, will be gladly acclaimed President by all.

(9) "Your Excellency had been viceroy in the provinces and Grand Councillor in Peking during the Manchu *regime* at the end of which a dukedom was conferred upon you. Upon the inauguration of the Republic you were elected President; you have also reached the exalted position of an emperor, creating a title of your Imperial Reign. What more do you want, having reached the climax of nobility? Now, you have cancelled the monarchy and reassumed the office of President, just as a Minister of State was reduced to a Vice-Minister or a Viceroy to a Taotai. What relish do you find in climbing down from a post of honour and in occupying a humble seat?"

(10) As Yuan has devoted himself to the service of the State for several decades, until now when his hair has turned gray, he should deem it time to have a good rest. He may either enjoy the happiness of a country life or elect to make a tour throughout the world to study the politics obtaining abroad upon his retirement, and in consideration of his improved knowledge in politics, the people may again elect him their Great President, who knows?

### Statement by Tsen Chun-hsuan

Tsen Chun-hsuan, who is regarded as one of the foremost of the southern leaders, also published a statement. He is an inveterate enemy of Yuan Shih-kai, and for that reason more than any other is to be regarded as uncompromising in his attitude when the question of a settlement is under discussion. His statement is as follows:

I, Tsen Chun-hsuan, do hereby make the following statement to the Military and Civil Governors of the Provinces and to the rest of my fellow-countrymen, young and old:—

I have remained silent as a political refugee for three years, during which period I have not had the opportunity of expressing my long-cherished principles. The time has now arrived when I can remain silent no longer. Being frank by nature, I can only say what I mean, though I may not always see what is right. If what comes from the bottom of my heart is wrong, I hope you will rectify it, otherwise I hope you will believe it.

I am opposed to Yuan Shih-kai, not for the purpose of vengeance, nor to advance private interests, but solely to uphold the principles of justice and humanity which have been our national heritage for several thousand years. I was once a minister of the Manchu Dynasty. As Yuan Shih-kai betrayed the Manchu Dynasty, it is my bounden duty to bring him to justice on its behalf.

I am now a citizen of the Republic. As Yuan Shih-kai has attempted to overthrow the Republic, it is likewise my bounden duty to bring him to justice on behalf of the Republic. For these reasons, I have pledged myself to do what is in my power to mete out condign punishment to the national betrayer. If he is allowed to go unpunished, how precarious are the principles of justice and humanity! If the citizens do not fulfil their duties as citizens, how can the nation continue? Even were I to eke out my existence without any sense of shame, my descendants would degenerate little by little to the level of brutes. Is it said that I have the sinister motive of wreaking vengeance? It is well-known that I have no animosity against Yuan Shih-kai. Is it said that I want to advance my private interests? I have still enough for my own subsistence and I am not one of those who slave that their descendants may be idle.

Is it said that I have the ambition of becoming a high official? I have had enough of official life, and only regret that I was not able to follow the example of the philosopher Ma Di in sacrificing everything for the benefit of society. Has the traitor paid the extreme penalty of the law? If not, then I am willing to lay down my own life. If he has, I shall be glad to lead the life of a private citizen. I will not attempt to refute the charges of lack of foresight and judgment, but to entertain suspicion of my motives is not only unfair to me, but savours of narrow-mindedness.

As I have said, I am not able to follow the example of Ma Di. Who, then, will bear the heavy responsibilities of state after the fall of Yuan? Concerning this question I shall say nothing beyond referring you to the Constitution. From the assassination of Sung Chao-jen to the time of Yuan's proclamation of himself as emperor, he repeatedly violated the Constitution. This has stirred the indignation of the entire people. It is therefore as important to uphold the Constitution which has been thus set aside as it is to overthrow the person who trampled upon it. He who, according to the constitution, has to assume the responsibilities of state, should not shirk them, though, by so doing, he may incur public censure and expose himself to considerable risk.

On the other hand, no person should compete for the office of President, even though this may lead to fame without endangering his personal safety. Our citizens have determined to sacrifice their lives in order to overthrow Yuan in his attempt to make himself emperor. If, hereafter, anybody dares to fight for his private interests, our citizens will, I am sure, overthrow him in the same manner as they have done the would-be emperor. I am not so foolish as to place private interests first. And though I may be daring enough to undertake difficult state affairs, I am not equal to the onerous duties of the chief magistrate of the nation; and I sincerely hope that our heroes and other patriots will not plan to make me the target of the nation.

What part shall I play after the fall of Yuan? If pressed to discharge the duty I owe the country, I shall, incapable as I am, willingly accept, as did Confucius, any subordinate role that may be assigned to me, provided the duties are not beyond my ability. Personal fame and honour are matters of indifference to me. Though not a man of wide knowledge, I have heard that in America the upper classes work as private citizens. If, therefore, the public leaves to me to follow my own inclinations, I will do whatever I can for the benefit of my native village in particular and of the country at large. For this, I need no official position, always, owing to the vicissitudes of politics, uncertain.

Moreover, the people are the all-important factor in a republic. The life of a private citizen is in no way inferior to that of a public man. When I said, "I have enough for my own subsistence," I was not deceiving myself; and when I said, "I have had enough of official life," I was speaking from my heartrending experiences. You need not be anxious about me, for if I reappear in public, I will harbour no inordinate ambitions; and if I retire into obscurity, I know how to abide by my own principles.

In conclusion, I may say that my only desire is to see that the national betrayer is dealt with according to law. If any one can work with me in upholding the principles of justice and humanity and fighting against the common foe, I will befriend him, respect him, and love him, even though he be my greatest enemy. But if any one should take the side of the betrayer, I will sever my connexion with him, even though he be my best friend or nearest kinsman.

It is in keeping with my nature to submit to what is right, and to fight against what is wrong. Ill-will must yield to reason, and everything must be subordinated to the common cause. Those who are on intimate terms with me will bear testimony to what I have announced as to my life principles. Even those who bear me malice will readily admit that I cannot be so cruel as to plot against the life of a man with whom I may be talking and laughing, or to order the execution of a guest in the midst of a banquet.

Our country is now in a most critical condition. I may have occasion to address you again; but as this is the first time that I have had the opportunity to do so since I left China, I do not dare to say more than what is necessary to express my principles. Hereafter I will give my opinions on current events. If you think I am wrong, do not hesitate to criticise me; but if you think I am not sincere, you do not know me at all.

### General Feng-kuo-chang's Attitude

In our last issue we referred to the doubt which existed in connection with the attitude of General Feng Kuo-chang. Friends of the Independent Provinces believed that he was supporting them, and opinion in Peking was that he stoutly adhered to his old friend, Yuan Shih-kai. On April 26, he gave some indication of his feelings in a telegram to the President. The following is the translation given by the *Peking Daily News:*

Since the outbreak in Yunnan and Kueichow the revolutionary influence has spread to several provinces; and the general situation of the country has now become most critical. Many times I thought to express freely my opinion, but I did not venture to do so, for fear of incurring your displeasure. As danger has arrived from every direction, I cannot remain silent any longer.

For the past few years the Government has enforced energetically the policy of centralization of powers, and it has assumed full control of the local financial and military affairs. High provincial officials have been handicapped in every way, and they have not been able to effect any improvement in their respective provinces because they cannot do anything without interfering with the authority of the Central Government. The original provincial troops have been reduced again and again, disregarding the fact whether the remaining forces are sufficient to make good the local defence or not. In normal times peace and order might be maintained temporarily with difficulty but as soon as any trouble arises the Chiang Chun and Governors become most helpless as they have no control over the troops stationed in their provinces. It is well said that their authority is only confined to the provincial capitals where they are, and in the territory outside these capitals they can exercise no power. In the late Kuangtung trouble we notice that when Chaochow, Swatow, Chingchow and Lienchow declared independence successively, the provincial capital could do nothing to prevent what they were doing, but was finally compelled to follow their steps. Although we high provincial authorities have control over a certain portion of troops, we cannot predict whether they would be sufficient to cope with the situation or be willing to submit to our control. All the trouble and inconvenience have been the outcome of the policy of the centralization of powers.

So far peace and order have still been maintained in Kiangsu When the news of the declaration of independence in Chekiang reached this province the people were seized with consternation, and rumours of all sorts were rife. It was through our great and extraordinary efforts that the normal condition has been maintained so long, but if the present fundamental problems of the State are not solved in time the situation will become most hopeless. By the agitation of bad characters, thieves and robbers may arise from various districts, and the troops will be insufficient to suppress them. Revolutionaries may seize the opportunity to plot against the authorities, and the future is indeed exceedingly gloomy. I, Kuo-chang, who am responsible for the protection of this province, may become helpless to face such a grave situation. All I have described is only the condition of one province, but it will show the colossal task of the President to deal with the situation of the whole country. Since the outbreak of trouble one after another province has gone over to the other side, the people of the country have been seriously disturbed, troops of the Central Government have not shown any desire and enthusiasm to fight, and neither persuasion nor the military influence of the Central Government can effect any remedy for the present situation. However Your Excellency who has been endowed with extraordinary ability and experience, may be equal to the situation, and I hope that my fears and anxiety will after all prove to be unfounded.

As soon as the form of State was changed, troubles broke out from all directions, and it is unnecessary to affirm who have been the cause of the present disasters. The policy for the internal administration has been changed many times. All men of experience and ability of the former days have retired refusing to shoulder the responsibility of the State affairs, and Your Excellency is now surrounded by newcomers. Small military officers of the former days are all now promoted to the highest ranks and titles the Government could give, and there is nothing now to encourage them. Favours have been shown to flatterers, and men of uprightness and integrity have been suspected. Everybody feels the danger of incurring the displeasure of the authorities, and all have tried to

deceive them. When consulted on State affairs, no one has dared to express his true opinion. This is the reason that in the morning one sent in a petition urging Your Excellency to ascend the Throne, but in the afternoon raised an army to fight against the Central Government. There is none that has out of his heart given Your Excellency his support from the beginning to end. It is true that the troops in the Metropolis and the Commanders in the front are faithful to Your Excellency, but their strength has dwindled from day to day. Still no one can tell that these faithful few are really supporting the cause of Your Excellency.

When the expedition was first sent out all the Northern troops fought for the Imperial Cause, and after the monarchy was cancelled the North has lost its pretext for the war. Now both sides are republicans, and should the troops in front understand that they have been fighting without a cause, they will not listen to the order of the Central Government. If no fundamental solution be arrived at immediately the heart of the people of this country will be alienated from the Central Government. The only course left for the President is to deal with the nation in sincerity. No troops should be sent to the provinces which have not yet severed their connection with the Central Government; and the armistice be faithfully kept sending no more troops to reinforce the front.

Curiously quite a different interpretation was placed upon General Feng's telegram by supporters of the South, and although the translation given above was denounced as incorrect, later developments seem to give conclusive proof that the other version, which claimed that Feng had urged the retirement of Yuan Shih-kai, was incorrect. To this telegram the President sent the following reply:

The policy of Centralization of Power was copied from our Eastern Neighbour; but it has not been properly enforced, hence the great failure. However we must now change our policy to that which is more suitable for the circumstances of this nation. If the said Chiang Chun has any suggestion to make the Central Government is ready to follow his advice. We have deeply appreciated his advice to beware of flatterers, promote the experienced and able, exercise care in conferring titles and ranks, and deal with the nation in sincerity. For the past few days Hsu Shih-chang, the Secretary of State, Tuan Chi-jui and all other Ministers of State have been holding conferences to decide the best means for the formation of the Government and to draw up regulations for the organization of a responsible Cabinet. Thus the foundation of a responsible Cabinet has been laid, and at the same time we have been devising means for the revival of the National and Provincial Assemblies, the introduction of the Self Government System, etc. These are the fundamental solution of the present problems of the State, and by their enforcement reforms will no doubt be effected. We are glad to learn that the said Chiang Chun has done his best to maintain peace and order of his province. It is hoped that he will consult with other provinces regarding the peaceful settlement of the present situation. At this critical juncture it is imperative that all should abandon their differences and act unitedly to effect the salvation of the nation. We heartily accept the faithful advice, and repent of the past errors.

Knowledge of the exact attitude of Feng Kuo-chang was naturally of the utmost importance both to the South and the North. He stood as commander of the foremost province on the Yangtze—Kiangsu province—and also his connections with the army were of the strongest. If the Independent Provinces could secure his co-operation it was felt that the North must collapse, and likewise the North considered its salvation to be in the retention of the allegiance of the Yangtze Provinces, which virtually were in the hands of General Feng. Emissaries of both sides constantly belaboured him with proposals, and it ultimately became manifest that he had no desire to make any definite commitment, he probably feeling like the famous swain that he could be happy with either were the other dear charmer away. General Feng undoubtedly played for a long time with both sides.

### A Set of Peace Terms

Constant talk of peace negotiations filled the air but nothing complete emanated from either side. The South made no overtures as a united body subsequent to the cancellation of the monarchy and this was ascribed to the fact that unity was impossible, there being considerable dissension between the factions in Kwangtung Province. However, towards the end of April it was reported that Eight Demands for a settlement had been submitted, in connection with which the following statement was published in the *Peking Daily News*:

Being very sincere in its desire to effect a peaceful solution the Government has recently organised two conferences under the respective names of Kuo-shih-ping-pan-hui and Kou-ho-cheng-pai-chu for the study and discussion of the demands lodged by the independent provinces. The progress of their discussion and the contents of the eight demands are in brief as under:—

1.—The retirement of the President from his present post. (This is said to be too grave a question to be decided by either of the two parties, it should be submitted to the formal National Assembly, when organised, for decision).

2.—The renewal of the Provisional Constitutional Compact of the First Year of Ming Kuo. (This will be agreed upon by the Government, since there is not much difference between the provisional Constitutional Compact and the formal Constitutional Compact. It should, however, be left to the decision of the National Assembly, as it is the law of the country).

3.—The organisation of a responsible Cabinet. (This demand has been complied with by the Government by the issuance of the Mandate on the 21st instant dealing with the reform and organisation of a responsible government).

4.—The convocation of the National Assembly. (This demand is not objected to by the Government, since it is an organ representing the will of the people).

5.—The introduction of local self-government. (This demand will be accepted by the Government, as it identifies the intention of the President, who appointed Wang Ta, during last year, as the Director for the introduction of the model self-government in the Peking Prefecture in order to extend the same all over the Country).

6.—The Restriction of the military power of the Chief Executive. (By the inauguration of a responsible Cabinet, it is but natural that the military power of the President be handed over to the former).

7.—A general pardon for the rebels. (This question is still under discussion).

8.—Severe punishment for the originators of the monarchical movement. (This question is still under discussion by the Government).

### General Tsai Ao Urges Retirement of Yuan

The efforts made by General Tsai Ao, the leader of the Yunnanese troops, who instituted the campaign of independence, and General Chen Yi, the Governor of Szechuan, to devise a basis for compromise developed into a proposal, submitted by General Chen Yi to Peking, for the retirement of Yuan Shih-kai, the message emanating, ostensibly, from General Tsai Ao. It was (*Peking Gazette* translation) in the following terms:

Following the cancellation of the monarchy, Er-an [Chen Yi's *hao*] despatched a delegate to me with peace proposals for discussion. The first proposal related to the retention of Yuan Hsiang-cheng [Hsiang-cheng is the name of the Chief Executive's native city] in the office of President subject to certain safeguards intended to prevent a recurrence of the monarchical movement and at the same time to avert the dangers of the moment and to reach a settlement for the maintenance of the general situation. I am conscious of the genuineness of all the efforts made in this connexion; and while the present situation of the country is assuredly precarious, we are not of the class of men that will pour oil on the fire if peace and rest can be vouchsafed the people by any compromise. The subject now under discussion is of such a momentous nature that it must be subjected to the fullest consideration.

From the point of view of law, Hsiang-cheng deliberately nullified the validity of the action of the National Assembly which elected him to the office of President, when in accepting the throne, he issued a mandate practically renouncing his office as President. It is therefore legally impossible for him to reoccupy again his former position. A self-appointed President is a phenomenon that is unknown in history; and if this point of illegality be allowed to go unchallenged, what sort of statecraft will be left to China? From the standpoint of conduct, we find that Hsiang-cheng has been unable to restrain himself whilst acting as President and lacking in firmness when he accepted the throne. When it is remembered that he has thrice changed his attitude within the brief space of a few months, what credit can be given him for dignity and moral responsibility? In these circumstances it will be impossible for Hsiang-cheng to reassure the people and regain their confidence even if he were to swear by Heaven and Sun that he would be faithful in the future to his promises as President of China. For obvious reasons, it is proper that safeguards should be exacted. But where would national dignity be in the case of a settlement that would result in our suspecting and guarding against one another like people guarding against robbers and thieves? It would be impossible under such circumstances for the Government to exercise authority in future. The continuation of Hsiang-cheng as President is therefore an impossibility.

We understand that the advice of the five Powers in connexion with the monarchical movement was presented to our Government at the instance of Japan. As the monarchy is now cancelled, Japan is boasting that her advice has yielded her a victory; and at the same time her derision of Yuan has increased in intensity. The Japanese are presently expressing the view that, inasmuch as Yuan

has disturbed the peace of the Far East by suddenly becoming emperor and suddenly going back to his position as President, Japan would have to intervene if Yuan should again be recognised as President. The relations between Hsiang-cheng and Japan have been anything but friendly; and the unnecessary disturbances caused by the action of Yuan have given them a fresh excuse. Japan is known to have always been watching and looking for the opportunity which has now been given her. In what way shall we deal with Japan if she should intervene in our internal affairs in case Yuan is recognised President at a time when Great Britain, France and other countries are unable to restrain her? The continuance of Hsiang-cheng as President is therefore impossible even from the point of view of diplomatic difficulties.

When the proposals of Er-an were forwarded to Yunnan, Kueichow, Kuangsi, and Kuangtung for their views, the same were considered impossible and rejected. Prominent people within and without China have also been expressing themselves in words even more vigorous in tone. What then can be causing Hsiang-cheng to linger at his post when he knows that the indignation of the people has risen so greatly against him?

Responsible people all agree that Hsiang cheng must retire, that the Vice-President should temporarily function in his stead in accordance with the provisions of the Provisional Constitution [not the "Goodnow Constitution" known as the Constitutional Compact], and that the National Assembly be again convened to hold another election. At the same time if Tung-hai [Hsu Shih-chang], Chih Lao [Tuan Chi-jui] and Hua Lao [Feng Kuo-chang] be placed in positions to assume the responsibility of the various departments of Government, there will be no difficulty whether the situation is regarded from the standpoint of legality or practicability.

Huang-Pi [Vice-President Li Yuan-hung], Tung-hai [Hsu Shih chang], Chih Lao [Tuan Chi-jui] and Hua Lao [Feng Kuo-chang] are quite capable of doing properly whatever Hsiang-cheng can do and they do not labour under the disadvantage of being suspected by the people as Hsiang-cheng undoubtedly is. Viewed in this sense, we see that the retirement of Hsiang-cheng will at once cause all difficulties to vanish; indeed no act will prove as powerful for the elimination of internal trouble.

A mortal does not live for ever; and if a man of sixty can pacify the country by an act of retirement, what more can he wish to achieve? Besides, the qualities of modesty and meekness necessarily involved in such a course will not fail to arouse in future generations a sense of admiration; and, in this event, when the day comes to reckon the merits of past patriots, it is certain that Hsiang-cheng will be praised as the father of the Min Kuo.

If, however, Hsiang-cheng should continue to linger and delay to make a prompt decision in the sense of retirement and compel the people to elaborate their demand in plainer language, his retirement will be a compulsory instead of being a voluntary act and his high virtue will be lowered. If he should decide to retain his office by force of arms, then hostilities, which have been suspended on account of the truce, will be resumed for which the responsibility will be on him. The choice is before him. In the interests of the State as well as of Hsiang-cheng, we have to ask you, Gentlemen, to remonstrate with him in a united voice in order that he may not miss this last opportunity. Tsai Ao continues to appreciate Hsiang-cheng's friendly sentiments towards him; and what he now seeks to express in words at once plain and intimate is intended for the benefit of the country and in the sense of a return for personal kindness. You, Gentlemen, are besought to give due consideration to my humble views.

On April 22 and 23 disturbances broke out in Kiangsu Province at Wusieh, on the Shanghai-Nanking Railway, between government troops and rebels from the Kiangyin forts, on the Yangtsze River, some 30 miles from Wusieh, who had previously declared "independence." The rebels were driven off, though they cut the railway and caused a suspension of traffic between Shanghai and Nanking for a day or two. Kiangyin fort was later recaptured and the rebels were dispersed.

Fighting also took place in Kwangtung Province near Kongmoon between troops under the command of the "independent" Governor of Kwangtung, General Lung, and so-called rebels, a faction opposed to the one in power. The "rebels" were defeated. This was merely one further illustration of the difficulties confronting the leaders in the southern Provinces.

April closed with actual factional fighting suppressed.

### The Governor of Chekiang

In Chekiang Province there was dissatisfaction with the attitude of the "independent" Tutuh, Chu Yen-kwang. He was accused of being only half-heartedly "independent," and certainly his demeanour gave justification for the suspicion. In an endeavour to reassure the advocates of independence he telegraphed Peking as follows, according to a *Peking Daily News* translation:

The independence declared by the provincial capital here has been unanimously supported by the people of all districts in the province. In the afternoon of the same day of the declaration I was obliged to take over the affairs of the province at the earnest request of the high civil and military officials, and local gentry, although I was perfectly convinced that my ability was not equal to the occasion, or up to the expectation of the people of the province. However, I was aware of the seriousness of the situation of our country, and I did not therefore hesitate to take over the responsibility. I must point out that the steps taken by the people of this province are without any mean motives. The various classes of people have a common desire to see peace and prosperity returning to this nation, so that further troubles and disasters may be averted.

The independents do not seek for wealth and power, nor any personal interest, and they have a proper object in view, quite different from the actions of those violent and rash characters. Consequently after obtaining the success, all promoters of the independence have returned to their former posts of occupations. Troops have returned to the places from which they came, and the people have again settled down as heretofore. Peace and order have been maintained as usual without causing any disturbance. I therefore affirm that the people and troops of Chekiang are really patriotic and have devoted their whole attention to the furtherance of the interest of the nation; and their patriotism may be easily observed by both the people of this and other countries.

The influence of revolution has spread, and it seems that one province after another would in course of time declare its seccession from the Central Government. It will be serious if some false steps should be taken. The object of the declaration of independence is the re-union at the end, otherwise the present steps will be a serious blunder and failure. It is important that the work of destruction should precede the work of construction, but the delay of constructive work will cause great misery to the people. Therefore, the remedy should be applied in time lest it be too late to effect the salvation of the nation. I believe all the provinces which have either declared or not yet declared independence will share the same idea with me, and feel the same responsibility.

The only means to effect the salvation of this nation is to shorten the period of quarrel, and proceed to the root of the trouble at once with the view of effecting a rapid solution. The point for us to settle now is whether the Chief Executive will abdicate or not. They have been so absorbed by this important problem that they have neglected to consider the procedure to be adopted in connection with the act of abdication. As both sides do not like to yield, fighting can not cease, and the innocent people have suffered and will suffer untold misery on account of the war. It is easy to read the mind of the people of the country under the present circumstances. We have noticed that Mr. "Hsiang Cheng," (President Yuan) has cancelled the monarchy, is willing to part with the crown which was within his reach, therefore we believe that he will not remain in a nominal Presidential post to bring woe and affliction to the people. Moreover, in view of the present critical situation, there is not much to be enjoyed by occupying the post of President of this country. The responsibility of President is exceedingly great, and he cannot enjoy himself as if he were in a time of peace and prosperity. He would no doubt prefer to retire and to seek pleasure at his countryside in fishing and other delightful pastimes. Under the present circumstances there is no doubt that he would be pleased to retire. But if the South should force him too hard, it would oblige him to resort to means for his own protection. On the other hand if too strong support be given him it would do him more harm.

I, Yen-kuang, am of opinion that the first step should be to cease all hostility, so that the people will gain a little respite. Secondly, both sides should at once appoint representatives to organize a conference for the discussion of the terms of abdication. Thirdly, all the great problems of construction should at once be discussed. All the provinces which have either declared independence or not, should at this time combine themselves together in a right and patriotic spirit to devise means for the salvation of the nation in accordance with right principle and the present circumstances of the country. I should further suggest that a few provinces be nominated to consider and decide the measures to be adopted by the country, and after having made their decisions they should promulgate the same, thus no time will be lost.

The effect was not as desired by General Chu, and the leaders of the "independence" movement in Chekiang quickly assembled and voted him out of office, appointing an active officer of the Chekiang forces in his stead.

The province of Heilungkiang, in Manchuria, declared what the Southerners described as "loyal independence"—"independent though loyal to Peking."

On May 3, a serious development took place at Tsinanfu, the capital of Shantung, the province from which the Japanese ousted the Germans as a result of the capture of the German colony of Tsingtau. Bombs were thrown, it is alleged by Japanese, and while no great damage was done to property, considerable panic was caused, and definite evidence was given of

the active interest of certain Japanese in the movement to upset the Central Government.

More significant, however, was the extraordinary conduct of Japanese military authorities explained by the *Peking Daily News* as follows: "At Weihsien (Shantung), there is a division of loyal troops under General Chang. On the evening of May 4 a force of close upon 1,000 armed men, clad in a kind of grey uniform were brought by the Japanese controlled railway to Weihsien. The gates of the city were closed, but the rebels started firing and made an assault, which was easily repulsed. Another couple of hundred of the uniformed rebels were brought to Weihsien by the railway on May 5 and in the evening a company of Japanese soldiers, under the command of a Japanese officer named Ishu Oura, arrived and expressed a wish to parley with the loyalists. General Chang sent the magistrate of the city to ascertain what the Japanese officer wanted. The latter presented two demands, (1) That General Chang should declare independence and arrange terms with Chu Cheng and (2) That the city should be surrendered and that General Chang's troops should leave. Of course these demands were not acceded to. The city magistrate was not allowed to return to the city. Pillaging is being carried on at Fangtze and Chowtsun by rebels who were taken thither on the Japanese railway."

A formal protest against such outrages as these was lodged by the Chinese Government with the Japanese Government, but the latter received the protest with the declaration that they had no information in connexion with the matter. Independent evidence is available that the Japanese have been conspicuously active in creating disturbances in Shantung, and this is particularly regrettable in view of the fact that Japan labors industriously to try and prove to foreign Powers that she is bent upon nothing but the maintenance of peace in Asia in general and the integrity of China in particular.

### The Legality of Yuan's Position

On May 8 the new Minister of the Interior, Mr. Wang Yi-tang, issued a Ministerial Order, giving his interpretation of the law with regard to the standing of the President. The order (*Peking Gazette* translation) was as follows:

The general public is hereby notified that while confused discussions are capable of upsetting sound principles and representing white as black, mistakes made by misinterpreting the meaning of law are doubly liable to disturb the minds of the people and misrepresent actual facts. It is feared that unless prompt correction be made, mistakes will beget mistakes and the eyes and ears of the people may thereby be unduly influenced, resulting in the disturbance of local peace and order. This Ministry, in control of all internal affairs, is immediately responsible for the protection of the people and the maintenance of order. A perusal of the articles and telegrams published in the newspapers shows that discussions in the connexion are mostly partial. Some say the title "Great President" should have disappeared upon the establishment of the monarchy, while others argue that the existence of the Min Kuo was interrupted on the day the Convention of the Representatives of the Citizens decided to adopt a constitutional monarchy. These arguments are nothing but a miscellaneous collection of partial views gathered for the purpose of supporting certain views. They are neither facts nor sound theory in the eyes of the law. We fear that misunderstanding will arise if they be allowed to pass uncorrected.

It must be remembered that it was a foreign official of the Government [Dr. Goodnow] who raised the question of monarchy by writing an article on the subject; and Chinese scholars studied and discussed the subject afterwards. The Chou An Hui was started because our people and scholars, deeply struck by the danger of internal warfare which continued for over ten (*sic*) years in Mexico, which had five different Presidents at one time, were convinced that nothing else could avail but to discuss the question of Kuo-ti. The people of the provinces and administrative areas poured in telegram after telegram, when they heard of the movement, asking that the *Kuo-ti* be changed. All the civil and military officials then also sent in telegrams of approval; and thus the voice of the country was unanimous. Owing to the position he then occupied, however, the Great President, who was responsible for maintaining the then existing form of State, made repeated declarations and issued a mandate in which he openly declared that the change of Kuo-ti was inadvisable having regard to the tendency of the time. The Convention of the Representatives of the Citizens, on the other hand, unanimously decided to adopt the constitutional monarchy system and also designated the Great President as emperor.

From the view point of law this was not an attempt to destroy the Min Kuo and then to elect an emperor. Rather it was an act to prepare for the formation of an empire and election in advance of the then Great President as the future emperor. As the empire was not actually formed and the emperor never actually ascended the throne, the continuance of the Min Kuo was never interrupted. Consequently the position of the Great President was never altered. This, we assert, is without doubt correct.

A mandate was issued on the 11th of the 12th month of the 4th year of Min Kuo, stating, "I shall, in my original capacity and name and with my original authority and power, maintain the existing conditions." Is not the "original name" the name "Great President," and the "original authority and power" the authority and power of the Great President? Were not the "then existing conditions" the conditions of the Min Kuo? It must also be remembered that the Great President from the beginning to the end never issued any mandate in the name of an emperor; and the term "Ti Kuo" (Empire) never appeared in any of the documents and the telegrams. This is an unquestionable proof that the empire never came into existence. And as the empire never came into existence, the continuance of the Min Kuo has never been interrupted. Consequently the Great President never for a day vacated his position as the Great President.

This is not all. When the people of the whole country repeatedly begged the Great President to ascend the throne, the latter always firmly declined. Internally he ordered the postponement of the drafting of the constitution of the monarchy, and externally he declared to the foreign powers that the establishment of the monarchy would be postponed. Indeed the Bureau for the Preparation of the Grand Ceremony was established, but this was done in order to humour the people who were clamouring for the coronation and not to prepare for the actual coronation. If it is claimed that the existence of the Min Kuo was interrupted without the empire being established, then we must also accept the theory that China ceased to have a formal government on the day the Convention of the Representatives of the Citizens decided to adopt a constitutional monarchy. We are all aware, however, that the Chung Hua Min Kuo has held unbroken diplomatic relations with the treaty nations right up to this day without interruption; and the formal intercourse between the Great President and the heads of the foreign countries has been maintained up to this day. If the fact is to be denied that the Min Kuo and the Great President were in existence during this period, then are we ready to allow the views of a small number of people to raise the important question of formal intercourse between China and the foreign countries during the same period? Is it not a reckless thing to suggest that we were once without a government even before foreigners have said so?

The change of the *Kuo ti* was brought about first by the petition of the people and then by the demand of the civil and military officials of the provinces. This can be ascertained by examining the telegrams and documents still on file. Since the petitioners based their plea on the strengthening of the foundation of the country and since their acts were always guided by law, they cannot be governed by the common law. If they are to be bound by the limits of law then all those who petitioned for the establishment of the monarchy as well as all the superior officials should be held responsible. This is very plain and therefore needs no argument. At this time when opinions are numerous and rights and wrongs confused, our citizens should be united in heart and effort for the maintenance of the situation. They should not give ear lightly to rumours or be influenced by incitement, otherwise they will be endangering the country and throwing the people into devastation, in which case they will repent when it is too late. For the purpose of protecting the people and maintaining peace and order we feel that we are in duty bound to issue this advice in a clear and detailed manner. Let the myriads of people be one in mind in upholding the right principles. By protecting the country you will be protecting your homes; and so if you wish to love yourself love the country first. Of this, this Ministry has great hopes. Thus do we order.

### Feng Kuo-chang's Definite Policy

During the early part of May steps were taken to marshal the loyal provinces with the object of commanding a declaration of terms from the five "Independent" Provinces of the South; namely, Yunnan, Kweichow, Kwangsi, Kwangtung and Chekiang. These steps led to an unmistakable pronouncement of the attitude of General Feng Kuo-chang which was very disconcerting to Southern leaders. He, personally, brought matters to a head by visiting General Ni Shih-chung at Pengpu, and urged co-operation with General Chang Hsun, at Hsu Chow Fu, with the object of bringing the various provinces into line. General Ni Shih-chung accompanied General Feng Kuo-chang to Hsu Chow Fu, and, as a result they dispatched the following circular telegram to the Provinces, urging that delegates be dispatched with full power to meet at Nanking to discuss terms of peace.

We, Feng Kuo-chang and Ni Shih-chung arrived at Hsuchowfu to-day and have had a conference with Chang Hsun. As a result we agreed to dispatch the following circular telegram to the provinces:

"Several months have elapsed since fighting commenced on the Szechuan borders. Notwithstanding the fact that many proposals have been made for a peaceful settlement, yet no proper solution of the question at issue has so far been found. This may be attributed to differences of views held by different provinces. But it should be remembered that at the present critical moment, the extinction of the nation is hourly threatened. The different localities are rife with signs of unrest and disturbance and foreign aggression is daily expected. Under such circumstances, the Central Government has become powerless in regard to the settlement of the question, while each province holds itself out and insists on its own views. Rumours have become so plentiful that it has been difficult to understand the real situation of the country. Yunnan, Kueichow and other provinces have made excessive demands, which are ever-increasing. If such a deplorable state of affairs be allowed to continue, we can hardly foretell the danger and trouble which will befall this country.

"Being greatly concerned with this, I, Feng Kuo-chang, have, according to my limited views, proposed eight conditions as terms of peace, which have been communicated to you in a circular telegram dated the 1st inst. and I presume the same have already been brought to your notice. But in view of the importance of this event, which will affect the future destiny of the country to no small degree, I deem it neither convenient nor proper to discuss the question by telegraph. For this reason I personally went to Hsuchowfu on the 5th inst. to discuss the matter with Chang Hsun. When I was passing Pengpu, I asked Ni Shih-chung to accompany me.

"We arived at Hsuchowfu this morning. After a thorough discussion, we resolved that in view of the present situation of the country, which is full of perilous possibilities, we, having appointed ourselves as peacemakers, must first of all unite together into a solid body, before we can expect to advance our purpose. In this way our words will be considered as impartial and we can insist upon the settlement of the question. If we fail to do this, we shall allow the present state of affairs to continue until matters go to such extremes that they will be beyond remedy. We hereby telegraph to you for your wise counsel on the subject and request you to depute a delegate with full power to meet with delegates of other provinces at Nanking on the 15th inst., when we shall advance our purpose. We believe that only in this way we can avoid disagreement and will be able to push the matter to a definite conclusion. We, Chang Hsun and others, have taken the question into mature consideration and find our views in accord with one another. For the sake of the Central Government and the country we can adopt no measure other than this. We hope you will telegraph us your wise counsel on the subject and inform us of the name of the delegate you intend to despatch to us. Thus we shall hope to act upon your instructions as far as possible."

Having despatched the above telegram to the provinces, we hereby beg to bring it to the notice of Your Excellencies.

Several replies having been received to this telegram, a further message was sent by General Feng to the various authorities of the seventeen loyal provinces. The telegram (*Peking Gazette* translation) was as follows:

In acknowledging receipt of your esteemed replies to my telegraphic inquiry I beg to take the opportunity to thank you for your support of my views, which has stirred my admiration for your public spirit and loyalty in no small degree. The present situation in China is like a bunch of tangled silk. As it is impossible to solve the question by force of arms, a peaceful remedy should be found without delay. The 8 articles named in my *Chiao* telegram [sent in "elucidation" of the telegram which we published on April 26] were merely general outlines for discussion. The provinces of Yunnan, Kueichow and others have, however, persistently demanded that article 1 should be struck out [this article deals with the retention of the present Chief Executive]. On the other hand we should proceed in strict accordance with law if a solution of the difficult question is to be found, in order that the opposing parties may not insist on their own extreme views and thus give an opportunity to our ever watchful foe to intervene. Still basing my opining on the original proposal, I beg now to put forward new suggestions, which I have prepared after considering the various phases, for your criticism.

The first question is the position of the Great President. Great President Yuan first organised the Republican Government under the power entrusted to him by the late Tsing House, and thus became the ruler of the Min Kuo. His position in the process has been clear and definite. On account of the monarchist movement, however, events have taken a reverse turn. Indeed, the monarchy has been cancelled; but the view of the critics is that the existence of the Min Kuo was interrupted in the middle and that the original position of the Great President has been cancelled. It is therefore impossible to recognise his position again. This conclusion is reasonable. But if we are to discuss the question from the legal standpoint we are forced to the conclusion that not only the position of the Great President but also that of the Vice-President ended since after the 4th year of Min Kuo (*sic*) China therefore has been a country without a government or law. [It is understood that Premier Tuan Chi-jui has repudiated this nonsensical view in a reply to Feng Kuo-chang.] It is an unsound theory to suggest that the Vice-President should function in the place of the Great President, even basing the argument on the Provisional Constitution.

In order to maintain the Republic the administration should be improved; and if the task of reforming the administration cannot be expected of Great President Yuan, the only alternative is to elect another President. In order to elect another President it will be necessary to convene the Parliament; and in order to convene Parliament some one must issue a mandate calling on the members to assemble. The proposal to place the Vice-President in the position of the President and authorise him to function as such, as has been made by some one according to the provisions of the Provisional Constitution, is contrary to actual facts (*sic*). It would therefore be better to base our decision on the view that the Great President has been entrusted with power by the Tsing dynasty and has therefore the duty of temporarily maintaining the general situation. At the same time the position of the Vice-President should be revived and he should be compelled to assume office so that the inadequacy of the law may be remedied (*sic*). Meantime a method should be devised for the speedy convocation of Parliament, and the Great President should issue a mandate in advance to the effect that he would resign as soon as Parliament is convened. In this manner the future President may be duly elected in accordance with law, a responsible cabinet actually organised, a new Government formed, and many other affairs attended to one by one. Like the "veins" of a tree the source of life begins from the root and extends to the many branches. So by going about the matter in an orderly and systematic way a firm and solid foundation will be laid and the danger of emphasising the unimportant may be avoided.

The next thing is the question of the Parliament. From what I have already mentioned above, the election and convocation of a Parliament are seen to be steps of immediate importance. While it is to be recognised that the process of election is exceedingly complicated and difficult, undue delay of the matter will not improbably cause dissatisfaction. We should therefore modify the law on the organisation of the Parliament and the election law with a view that the formation of the Parliament may be hastened to an early date. The date on which the Parliament is to assemble should be made definite so that the successor to the Presidency may be promptly decided. It will be necessary, however, to lay down strict rules for the election of members of Parliament. Precautions should be taken to guard against corruption; and those who resort to bribery for the purpose of securing a seat and the demagogues of political parties should be excluded so that the true wish of the people may be represented and the defects of a disorderly crowd avoided. We should take a lesson from our past experience in this respect.

Another question is the constitution. The constitution should be drawn up without delay upon the establishment of the Parliament in accordance with the proper process. By having a constitution the whole country will be able to direct their actions. Prior to the passage of the constitution, the act and decisions of the government should be guided by the Provisional Constitution promulgated in the first year of the Min Kuo, which shall serve as a general model. And since the said Provisional Constitution contains many provisions which are unsuitable to conditions in China or the general situation, only those which are practicable should be selected and promulgated for temporary observance. The same may even be modified with the view that they should be made absolutely practicable without the slightest defect. In short the utmost care should be exercised in the making of the constitution as it is the fundamental law on which the life of the country rests.

Then the question of finance. The finances at the present day have reached the limit of stringency. The national treasury is depleted and the last fish has been caught by drying the pond. We are in a situation where we do not know what is in store for us in the evening after passing the morning. The major portion of the expenditure has been due to the wastage caused by the internal war. Peace negotiations have been going on but the military expenses are as great as ever. Even if the reforms mentioned above be carried out according to programme, we shall be faced with the problem of reorganising the situation in the provinces of Yunnan and Kueichow which have been affected by war. Funds are therefore needed everywhere and immediate steps should be taken to make the necessary preparations. The Central Government should make a declaration on the policy of handling funds in future, while the provinces of Yunnan and Kueichow should state clearly how much will be needed to put the provinces in order again. First of all, the unnecessary affairs of the State should be stopped and means devised to distribute the funds equitably for all important purposes. If this should be found to be inadequate then foreign loans may be contracted. In the latter case, however, the application of the loan must be definitely declared and the same used for no other purpose.

A budget should be compiled and the evil of extravagance should be sincerely and effectively cured. Reform in this connexion should be energetically pushed so that the vitality of the nation may be restored and the premature death by starvation of the nation prevented.

Now as to the question of the Army. Peace negotiations have begun and the troops despatched by the Central Government to Szechuan, Hunan and other places have been ordered to cease fighting. Yunnan, Kueichow and other provinces should also strictly control their forces and order them to wait quietly for a peaceful settlement. They should not be allowed to break the truce and interrupt the peace negotiations. As soon as a settlement is reached troops shall be sent back to their original garrison stations. In order

to reduce expenditure, the new units recruited by both sides after the outbreak of war should be disbanded and the soldiers sent home with adequate remuneration. Hereafter all the military forces of the whole country should be organised on a universal system, named in the order of their formation and placed under the control of the Ministry of War so that the whole may be made one united body without any distinction of provincial boundary. As to the introduction of conscription, due consideration should first be given to the existing conditions, and General Staff and the Ministry of War should jointly consider the question on a broad basis.

The question of officials is another important one. The qualifications and standing of all military and civil officials as well as all those who serve the Min Kuo in any other capacity during the regime of the Min Kuo should continue to be valid. The Chiang Chuns and Governors of the [independent] four provinces should also continue in their offices. All official systems and rules now in force should be left alone for the time being in order to avoid confusion. Those parts which need revision should be left till after the establishment of Parliament, when they may be discussed. Others such as unemployed military officers, returned students from abroad, and graduates of schools in China who have not yet been given employment, should be given employment by the Government so that real talents may be utilised and their service not overlooked.

The principal offenders are another question. The question of monarchy was raised by Yang Tu and others. They were doubtless prompted at first by the desire to create a sensation in consequence of erroneous notions about scientific research. Unfortunately their mistaken views had the effect of inciting the minds of the people and creating a disturbed situation. War was finally declared, the vitality of the country undermined and the people thrown into utter misery. Their sins are so numerous that they cannot be numbered even by counting the hair on one's head. The present situation is, however, most precarious and we should place the question of saving the nation before everything else. It will not benefit the country in the least even if we expose the corpses of these offenders in the public market. They should, however, be deprived of their rights as citizens of the Republic and considered as outcasts of society. Their crimes may be announced and sentences passed on them after the establishment of the Parliament upon due trial by process of law so that the law of the nation may be eventually carried out and the hearts of the people appeased.

The question of party members. Numerous parties sprung up after the establishment of the Min Kuo, and their aims differed widely. While it should be admitted that some of them have seceded from the Government as the result of disagreement with the latter owing to patriotic reasons, there are nevertheless many who, for the purpose of selfish aggrandisement, have advocated a policy of obstruction and destruction. These have mixed themselves with real patriots by establishing a banner of their own. As actual evidence can be produced against them there is no need to conceal the fact. The Government should examine the original indictments and judge who are genuine rebels and who are not. The decision should then be submitted to Parliament and the approval of the latter should be secured before a general amnesty can be declared. In this way violation of law will be avoided and causes of future disagreement removed.

The above points embrace in a rough manner the general outline. Kuo-chang is of opinion, after taking into consideration the tendency of the time and the present state of affairs, that if the foundation of the future Government is to be consolidated. The question, however, should only be tackled with great caution and care, guiding every action by the principle of law so that we may not become a laughing-stock in the eyes of the world. This is the only method by which a settlement can be reached. You gentlemen, being capable of making great plans, can surely make good my defects. It is therefore sincerely hoped that you will give the question your careful and esteemed consideration with a view that the final proposals may be without fault. Should you decide to approve these suggestions I beg that you will favour me with a reply before the 6th, whereupon I shall draft a telegram to be sent to Yunnan, Kueichow and other provinces as well as to the Central Government which will be asked to forward the same to the provinces for your perusal. Eagerly awaiting your reply.

### Southern Provinces form a Government

This exhaustive statement was naturally severely criticised by opponents of Northern politics, because it was construed to mean that Feng Kuo-chang desired to have Yuan Shih-kai retire so that he (Feng) might become President. The South have quite other ideas in that respect, and these were put in concrete shape by May 8 when the leaders managed finally to sink their differences and organize a government. They proclaimed the completion of the formal organization of the Southern independent provinces into a Central Government, with Canton as the Capital, and the appointment of General Li Yuan-hung as Great President and Commander-in-Chief of the army and navy. A War Cabinet was formed with Tang Chi-yao as Chief of the Military Council, and Tsen Chun-hsuan as Deputy-Chief. The following were elected members of the Council: Messrs. Liang Chi-chao, (Chief of the Administrative Department), Lu Yung-ting, Liu Hsien-shih, Lung Chi-kuang, Tsai-ao, Li Lieh-chun, and Chen Ping-kun. The following circular telegram was despatched to the various Provinces by the new "government:"

> Since the President has forfeited his title and rights, we have in accordance with the provisions made in the Constitutional Compact declared Mr. Li Yuan-hung, Vice-Minister, as Acting President of the Chung Hua Min Kuo. Unfortunately as Mr. Li has not at present been able to enjoy personal liberty, he is unable to carry on the function of a President. According to the provisions made in the Constitutional Compact the Cabinet should carry on the function of a President if there is no Vice-President; but as the National Assembly has not yet been organized no Cabinet can be formed to attend to the affairs of the State. After careful consideration the authorities of Yunnan, Kueichow, Kuangsi and Kuangtung, not including Chekiang which has not yet given a reply to our inquiries owing to the interruption of communications, hereby declare that in order to carry on the function of the State, a military Government should be introduced to consolidate and unite the efforts of the independent provinces, etc.
>
> The following is a set of Regulations governing the Workings of the Chun Wu Yuan (War Office) of the Southern Military Government, promulgated by the above mentioned telegram:—
>
> Art. 1.—The Chun Wu Yuan (War Office) shall be under the direct control of the President of the Chung Hua Min Kuo, and it shall manage and direct military affairs of the whole country during the time of War and to attend to the reorganization of the administration after the war.
>
> Art. 2.—Before the arrival of the President at the place where the Chun Wu Yuan is, all civil, military, internal and external affairs shall be administered in the name of this Yuan.
>
> Art. 3.—In the Chun Wu Yuan there shall be appointed Fu Chun (High Military Councillors), who shall exercise the power of the Yuan by their unanimous decisions. The Tutuhs of the province, the Commander-in-Chief, or Chief of the Staff of two or more provinces, and the Commander of two or more Army Divisions shall act temporarily as Fu Chun of the Chun Wu Yuan. As soon as a person has acquired the above qualifications he will become a Fu Chun automatically, as the number of Fu Chun is not fixed.
>
> Art. 4.—There shall be one Chief and one Vice-Chief Fu Chun elected from among all the Fu Chun to enforce the resolutions passed by the Fu Chun of the Yuan. The Vice-Chief shall assist the Chief to manage the affairs of the Yuan, and if the latter be absent the former shall act for him, but if both of them should be absent, another acting Chief shall be elected.
>
> Art. 5.—An Administrative Commission shall be established in the Yuan, and a Chairman shall be elected from among the Fu Chun. This Commission shall appoint various officials to manage the affairs in connection with Diplomacy, Finance, Army, Justice, etc.
>
> Art. 6.—A Commission of Representatives of the Provinces shall be introduced in the Yuan, and each Tutuh shall appoint two representatives to attend the Commission and to answer all inquires made regarding provincial affairs.
>
> Art. 7.—There shall be appointed a number of Secretaries who shall under the direction of the Chief and the Vice-Chief take charge of the important affairs of the Yuan.
>
> Art. 8.—Whenever there are important or external affairs to be settled, Senior Clerks may be appointed at the decision of the meetings of Fu Chun to attend to the same.
>
> Art. 9.—Detailed regulations governing the Working of the Commissions, etc., shall be fixed separately by the Order of the Yuan.
>
> Art. 10.—As soon as the formal Cabinet is formed this Yuan shall be abolished.

### A Financial Crisis

On May 11 an important step was taken by the Cabinet with a view to conserving financial resources, the Bank of China and the Bank of Communications being instructed not to cash their notes or to allow depositors to withdraw their funds. It is officially explained that this drastic step was dictated by a set of conditions which if allowed to continue would spell financial ruin for the Government. Apart from the public unrest due to the disturbing conditions and the constant rumours of probable trouble, which frightened people into cashing notes and withdrawing deposits, a serious situation was created by the Independents seizing the Government banks in whatever provinces came under their control and releasing the notes kept there on reserve. Thus a flood of paper, for which there was no adequate silver reserve, was let loose in the south and quickly began to move towards the northern market. Again, the great demand for silver abroad forced the price higher than it has been for many years and as a result large sums began to move outwards. The temporary measures to render notes inconvertible

prevented the further movement of silver from the bank vaults, and enabled the Government to retain sufficient funds to meet obligations to foreign creditors not covered by the Customs and Salt revenues. For this purpose a minimum of a little over £6000 per month is required. The virtual failure of provinces to contribute the usual amount of revenue to Peking, plus the Government's inability to raise loans from foreign or domestic sources, brought matters to a head and demanded the introduction of heroic measures. When the Ministerial order which follows was issued there was some excitement in the Capital, but no outward demonstration, though at Tientsin, Shanghai and a few other places there was a brief panic among lower class Chinese who were unable to obtain cash for their small notes. It must be mentioned that notes of twenty cent, and fifty cent denomination are in circulation as well as of one dollar and upwards. As the coolie class make purchases in fractions of cents—actually with "cash," a copper or brass token with a square hole in the centre—their failure to obtain the usual metal for their notes not only angered them, but seriously inconvenienced them, and it was only natural that they should adopt the only measure left them to evidence their disapproval. The day following the issue of the order, however, the Banks made arrangements for the cashing of notes up to one dollar in value. The Ministerial order signed by the Premier was as follows, according to the *Peking Daily News* translation:

> Since the outbreak of European War, the money market of the country has become stagnant and commerce has declined. Now unfortunately owing to the internal disturbances of the country the condition of the people has become worse and worse; and we are indeed anxious for the situation. According to the practice of foreign countries whenever there is a financial crisis the cashing of the notes of national banks may be temporarily suspended and the deposits of the public may not be transferred or removed from the banks. Thus the financial condition of the locality may be maintained by keeping a reserve of ready money at the National Banks to the great advantage of merchants and traders. As this practice is very sound and profitable, it should be copied by our Government at the present time.
>
> The Ministries of Finance and Communications are hereby instructed to issue an order to the Bank of China and the Bank of Communications to the effect that commencing from the date of the promulgation of this Cabinet Order the Bank of China and the Bank of Communications should suspend the cashing of all their bank notes and the deposits of the public. As soon as the situation becomes normal again, this Cabinet shall issue another order fixing the dates for the cashing of the above notes and deposits. The said two Banks are hereby instructed to take the responsibility for storing and sealing up funds.
>
> In the provinces or Districts where the branches of the said Banks have been established, the Chiang Chun, Governors or Lieutenant Generals are hereby instructed to order police and troops to exercise a supervision over these branches preventing them from cashing notes privately, and preventing disturbances. Should any person refuse to accept or should accept with discounts these notes, he should be punished whenever discovered in accordance with the provisions made in article 9 of the Law Governing national currency.
>
> The Chambers of Commerce and the said Banks should be consulted with the hope that all should act unitedly for the interest of the Nation. The said Banks are to be instructed to prepare detailed reports containing particulars regarding the amounts and denominations of the notes issued by them, and submit the same to the Ministry of Finance, thus preventing a superfluous issue of notes, etc.
>
> Issued on this 12th day of the 5th month of the 5th Year of Min Kuo.

### The Premier Criticises Canton Government

The formation of the government in Canton did not fill the North with pleasure, nor did it result as the South desired. Instead of producing any immediate results favorable to the South among wavering Northern Generals the tendency seems to have been the opposite. It consolidated the Northern military men in opposition to an organization which seemed to have disregarded their claims, and evoked much comment of a kind not calculated to be to the best interests of the South. Chiefly, military leaders declared that they would not play "second fiddle" to the organization at Canton, and in many quarters there seemed to be strong disapproval of the use of the name of the Vice-President by the southern leaders. Not that the Northern military ever had much use for General Li Yuan-hung, but it gave them opportunity to express "righteous indignation" and perhaps justification for exerting pressure upon the Vice-President to keep him in the North. The South undoubtedly did an injury to General Li Yuan-hung in thus publicly proclaiming him President of China. He was penned up in Peking, as it were, and was not a party to the move in Canton, yet was compromised in the eyes of those whose interests it was to see the Southern Government suppressed. In connexion with this matter the Premier issued a statement on May 14 in which he strongly criticised the Southern Government. It was as follows, and was sent to the various provinces:

> A telegram has been received here from Kuangtung in which the revolutionary leaders of the South declare that the Southern provinces, which have declared independence, have organised a new Government with Kuangchow [Canton] as the capital, Li Yuan-hung as Great President and Generalissimo of the Army and Navy, thereby cancelling the Peking Government. The declaration also states that a Military Council has been established with well-defined powers, and that the same shall attend to diplomatic, financial and military affairs, etc. The Tutuh of Yunnan has been elected as Chief of the Military Council and Tsen Chun-hsuan as Vice-Chief, etc. The Peking Government has been obeyed by the whole country and reorganised by the foreign Powers as the permanent Government by process of the law after going through the stage of a provisional government. Can a few revolutionary leaders abolish the same? The question of a national capital was settled by the National Assembly and observed for several years. It is the place where the Ministers of the treaty powers reside—a fact definitely stated in the treaties—and for this reason the capital is of great importance in matters of national intercourse. It is therefore impossible for a small number of revolutionary leaders to change both the Government and the capital from the internal or external point of view. The Great President was elected by the representatives of the people of the whole country in accordance with the nation's fundamental law, and he has been honoured and obeyed by the people of the five families. How then can a small number of revolutionary leaders appoint a Great President? The report that these revolutionary leaders have appointed Vice-President Li as the Great President is a great surprise to all. Mr. Li is now living in Peking and is carefully obeying the law. How can he accept the appointment of a small number of revolutionary leaders? Kuangtung is separated from Peking by a distance of several thousand li. It is evident, therefore, that Tang and Tsen are trying to use Li as a mere puppet by putting up his name while they themselves assume the actual power. No insult to Mr. Li can be more serious than this. These acts are nothing short of a violation of the republican principle and the trampling of the will of the people. To attempt to set up a rule over the masses of the 18 provinces, three special administrative areas, the Manchus, Mongolians and Mohammedans by a mere paper declaration, is an affront to these masses of people, and the same might result in the dismemberment of the nation. We tremble in fear at the thought that this united nation of several thousand years may thus be made to split. Since the outbreak in Yunnan, the Government has been pursuing a policy of patience and peace. It has gone out of the way to yield to the wish of a minority of people in the hope that thereby the country might be saved from partition, and peace and order might be maintained. But while negotiations are proceeding, the small number of revolutionary leaders have boldly disregarded the welfare of the citizens and the safety of the nation by occupying a small corner of the country and setting up an illegal government. How can we deal with them in the sincere spirit of patience and peace when they are deliberately the enemies of the people and the country? Their cry was to support the Republic; but in actual deeds they have trampled on the fundamental principle of republicanism and the will of the people. If this can be passed over without notice then our country will no longer be a properly constituted country. If you have any opinions to express, please communicate direct with Messrs. Feng, Chang and Ni at Nanking, who shall discuss the same with the representatives of the provinces together with other affairs.

On May 13 a statement was published that Generals Feng Kuo-chang, Ni Shih-chung and Chang Hsun had telegraphed Yuan Shih-kai pointing out that the ultimate aim of the Nanking Conference was the retention of Yuan Shih-kai as President, but stipulating that he should hand over all power, military, executive and legislative, to the new Cabinet. The three Generals wished to have telegraphic assurances from Yuan Shih-kai, however, that he was sincere in his declaration that he would hand over all power, and sink his personal ambitions for the sake of the country. Upon receipt of such a telegram they stated that they would wire the southern leaders urging them to cancel the demand for the retirement of Yuan Shih-kai.

On May 16 news leaked out in Peking that the Government had secured a loan of Yen 4,000,000 from Japan through the medium of the Sino-Japanese Corporation, certain industrial concessions being granted in return. The attitude of the Japanese in this connexion puzzled not a few in view of the

active efforts of Japan to assist the South, but it is not surprising when Japan's efforts to be on both sides during the 1911 Revolution are remembered.

### The Views of the South

The discussion of the arrangements for, and probable action of, the conference at Nanking did not inspire the Southern leaders to leap with the open arms of peace towards the North. They have set their minds on no settlement which will include the retention of Yuan Shih-kai as President, and it was given out early that the conference at Nanking would in all probability vote to prevent the retirement of Yuan Shih-kai providing that he handed over all power to the Cabinet. The Southern leaders desire to have more guarantees than can be given that Yuan Shih-kai will keep his word before they will, even for the sake of peace, agree to any compromise that will not exclude him. If the Nanking conference does vote solidly for Yuan Shih-kai as President the fat will once again be in the fire if the temper of the following circular telegram, signed by Tsen Chun-hsuan, "Commander-in-Chief of the National Protection Army," and Liang Chi-chao, "Chief of the Administrative Bureau of the Military Government of the Four Provinces," is at all indicative of the real feeling, the which there is every reason to believe:

"Situated as the country is, there is no other method which will cause fighting to cease save the retirement of Hsiang-cheng [Yuan Shih-kai]. This is the unanimous view of the country. Yet some are still advancing the suggestion of a patched-up settlement on the ground that, as the monarchy has been cancelled, Hsiang-cheng may be re-recognised as President. Tsai Sung-po's [Tsai Ao] reply is most effective. He suggests the case is like that of a woman who has trampled on her womanly virtue by divorcing her husband and then asks to be permitted to retire to the home and become the lawful mistress of the house again. This is at once offensive to law and decency. There is therefore no need to argue that this suggestion is unreasonable and impracticable.

"Some may even suggest that nobody but Yuan can control the Northern troops, the number of which is large. Apparently this argument is plausible, but upon careful consideration it is only superficially true. The question whether Hsiang-cheng is really able to control the Northern troops is already a doubtful one. But let us suppose that he is really able to do so. Then we must remember that Hsiang-cheng is already 58 years of age, and how long he will yet live no one knows. A mortal's life is limited, and we may do well to ask ourselves who will succeed Hsiang-cheng in the control of the Northern troops when he dies. In the humble opinion of Chun-hsuan and Chi-chao, the Northern generals, if they really care for the permanent welfare of the country, should take immediate steps to co-operate with one another and so bring about an effective control of their soldiery. If they will but do this, the retention or departure of Hsiang-cheng will not affect the peace and order of the North. If this be impossible and we are therefore compelled to rely on Hsiang-cheng alone, then we must not forget that Hsiang-cheng is a mortal and will die some day, be it one, two, five or ten years from to-day. On this view, some day the Northern troops will be out of control. If his retirement will cause trouble among the troops then what about his death? The attempt to secure a temporary peace on a basis of mere compromise is therefore to lay a dangerous mine for future explosion. The longer the doctor delays lancing a boil, the worse the suffering of the patient. Can we consider such Generals patriotic when they are thus satisfied?

"Among the Northern generals are the pick of China's martial heroes. Outside of Peking there are men like Feng Kuo-chang and Chang Hsun, and inside the Capital are Tuan Chi-jui and Wang Shih-chen. These are men admired by the whole country and looked up to as men of the hour. Not only are they famous for their military achievements but are also admired for their matchless excellence. What could they not do, if they would work in co-operation. If they would devise a method by which to settle the present question at a time of extraordinary difficulty, they would repay Hsiang-cheng for his former kindness to them by helping him to unshoulder his burdens, and show their patriotism by giving genuine and permanent peace to the country. Is this not what a real patriot should do?

"If on the other hand they should wish to retain Hsiang-cheng against the wish of the people, while we are not ready to say whether the North will be able to hold together, we are certain that it would be impossible to compel the South to yield on this point. Hsiang-cheng may act like a lean cow which is quite able to suffocate a pig by lying on top of it; the South, however, will not tolerate the swallowing of a cow by a strong tiger. Even if we grant that no other province but the five which have already declared independence will in future sever their connexion with Peking—which is of course most improbable—we wish to point out that it will be impossible for Hsiang-cheng to shoot down all the troops of the five provinces or massacre all the people of these five provinces. On the other hand the people of the five provinces are determined to fight to the last drop of blood. To expect them to change their mind would be like hoping to see the seas dry up. The fate of the country is therefore in the hands of those who will not sincerely seek for a permanent settlement.

"Those who advocate a compromise often base their arguments on foreign intervention. In the humble opinion of your servants if the advocates are really aware of the danger of foreign intervention they should realise all the more the urgency of the immediate retirement of Hsiang-cheng. It does not take an extraordinarily wise man to see that foreigners cannot remain indefinitely quiet while we continue to disagree internally. But when righteousness and morality and humanity are concerned no government in the world will deliberately embitter the feelings of four hundred millions of people for the purpose of protecting one single individual. It is not difficult to forecast what the conditions of intervention will be if intervention should actually become a fact.

"Since Hsiang-cheng has been morally defeated in the eyes of Chinese as well as foreigners, the iron verdict has been passed on him demanding his retirement. If he is still wise enough to retire before it is too late, he will—besides protecting his own life and reputation—spare the people from further suffering and save the nation from further humiliation. If he should continue to rely on his military power and cling to his presidential chair until he is forced to go, then........but let us refrain from making threats. What will these Generals, who love Hsiang-cheng as well as their country, say to this?

"It has been a regular practice of Yuan to accuse others of struggling for power and authority whenever he wants to attack those differing from him. He can but measure others according to his own standard. The more he speaks in this strain, the more his own offensive image will be revealed to the general public.

"Others we will leave alone. Chun-hsuan is both old and feeble in health. From his sick-bed he has risen with a great effort so that he might fight for the cause of republicanism. His idea is to seek death rather than glory. If Hsiang-cheng will retire in the morning, Chun-hsuan will disappear from the public in the evening. May heaven, sun and the gods take his life if he harbour any ambition to seize power with the intention of retaining the same. As to Chi-chao he is a mere scholar and not a politician. It has been against his real wish that he has put aside his author's pen and joined the army, but he has already made preparations to resume his quiet life when the time comes. This is a fact which needs no elucidation.

"Now since Huang Pi [Li Yuan-hung] has already succeeded to the presidential office in accordance with law, other matters will be solved without much difficulty. There are many who are capable of putting things again in order and reorganising the government. It is therefore his intention to enjoy the peace of a plain citizen when peace is actually restored. But the danger of the present position is extremely real. Strife will disappear if Hsiang-cheng will retire. In the interests of the country as well as Hsiang-cheng himself, there is no other safe course for him to take. We therefore take the liberty of pouring out our true heart. We respectfully await your advice."

The issue of the "moratorium" order was not obeyed by the Banks in Shanghai, Tientsin, and other centres. In Shanghai the Chinese merchants, and shareholders in the Banks of China and Communications, decided that it would be in the best interests of commerce if the Banks remained open and faced the "run." Both banks consequently paid out as demanded by the crowds of people who flocked at the doors, and with the aid of foreign banks they were able to weather the storm. The Bank of Territorial Development, however, closed its doors after a run of a couple of days. The foreign Banks agreed to advance $2,000,000 to the Bank of China if the Government would guarantee the repayment of the loan. When requested for an expression of view on this point the Ministry of Communications forwarded a letter from the Minister of Finance to Sir John Jordan, the British Minister at Peking, stating that the Government would guarantee the loan if it was divided between the Bank of China and the Bank of Communications, both being Government Banks.

Generals Feng Kuo-chang and Chang Hsun both opposed the "moratorium," telegraphing the Capital urging the immediate suspension of the order on the ground that it would create disturbances which might develop seriously.

Despite the acknowledged shortage of money the Government issued notifications that the interest for the 6% domestic loan, due in June, would be paid at due date and that the funds for the purpose were already in the Banks awaiting payment.

### Shensi Declares Independence

By the middle of May the situation in Shensi province had grown critical. Bandits were active at Sianfu and elsewhere

and altogether it was obvious that the Central Government could not expect its representative, General Lu Chien-chang, to hold out against the pressure being exerted by the rebels. There was some fighting between the loyal troops and the rebel forces, but the former were compelled to surrender, the city being taken over by Chen Hsu-fan, who was appointed Tutuh. He later telegraphed the Central Government as follows:

"Ever since the movement for Imperial restoration was launched, the whole country has been seething with suppressed indignation against it. The people of Shensi, having taken greater pains and experienced more hardships in building up the Republic, now have a more intense feeling against Yuan than anywhere else. I, Hsu-fan, being of the opinion that since the Revolution of 1911 the people of this province have exhausted their energy, have used my best efforts to maintain peace and tranquillity for the last few months in the hope of averting the horrors of war which would render the lot of the people more unbearable. But, contrary to expectation, no understanding has been reached between the North and the South respecting the much-rumoured peace although some protracted negotiations have been entered into by both parties: while on the other hand, the inhabitants of Shensi have "accumulated" their hatred and vengeance against Chiang Chun Lu for his avarice and cruelty and the same has found expression in the recent riots and uprisings which have spread far and wide into towns and cities. To make matters worse the troops under the command of the Chiang Chun have molested the people, mercilessly slaughtered their brethren and violated the principles of humanity. Being unable to tolerate such a deplorable state of affairs, I on the 9th inst. at Pu-shan, in Northern Shensi, proclaimed formal independence and assumed the name of the Commander-in-Chief of the Protection Army of Shensi in the hope of hastening the conclusion of peace between the North and the South and maintaining peace and order in this province. Hardly had I made this declaration, all the "righteous troops" rallied around me. Now I am at Shanyuan at the head of my troops and negotiating with Chiang Chun Lu respecting the terms of his surrender. I am demanding from the Chiang Chun the surrender of the arms and the men under his command and his withdrawal from Shensi soil without delay. These terms have been accepted by the Chiang Chun and we are ready to enter Sianfu to accept the Chiang Chun's surrender tomorrow. My object in taking this step is simply to mitigate the horrors of war in this land and to prevent as far as possible the places from being ravaged through civil strife. It is indeed a matter of regret rather than of pride for me to take this step. As you are gifted with exceptional sagacity and foresight, you must have a definite plan to end the civil commotion. Every human and well principled person in this land can never support the author of the present trouble who has committed treason, to fight the whole country and thereby bring woe and disaster upon the innocent people."

Naturally any disaffection in Shensi is almost certain seriously to affect the neighbouring province of Shansi, and at this writing the "independence" of that province was daily expected. With Shensi's departure from the fold of the Central Government the situation in Szechuan also became worse. The Yunnanese made good use of the armistice to "consolidate their position" and interest the Szechuanese in the delights of "independence," and as a result the position of General Tsao Kun and his force of Northern troops in Szechuan became precarious. The troops showed signs of disaffection and could not be depended upon especially as they were open to an attack from the rear by the Shensi force as well as being confronted by the Yunnan troops. The Governor of Szechuan, too, was under very strong pressure from General Tsai-Ao, the leader of the revolt in Yunnan, and others, and found his position of loyalty to Peking difficult to maintain.

### Japanese Activity in Shantung

On May 15 the Governor of Shantung reported by telegram to Peking that he was being pressed by Japanese not only to declare independence from the Central Government but also from other provinces. His message was as follows:

*To the Office of the Generalissimo.* The reason why I stated in the telegram of the 15th that I was forced by the Japanese to declare independence and sever all connexion with the whole country was that when the Japanese pressed me again and again to declare independence, I told them that as the Chief Executive had already agreed to retire from his presidential office, there could be no good reason for Shantung to declare independence. The Japanese, however, replied that by independence they meant autonomy and that as the Chinese Government was unable to protect Shantung, Shantung should at once become independent and place itself under the protection of some one else. From this it is to be inferred that the Japanese have forced me not only to sever connexion with the Government but also in respect of the whole country. This is why I said in my telegram that I was forced by the Japanese to sever all connexion with the whole country. Respectfully I despatch this telegram in reply and hope that it will receive your kind perusal. Signed, Chin Yun-peng.

This significant statement scarcely calls for any comment. The fact is that the Japanese, deny it as they might, were actively operating to cause disturbances and difficulties in Shantung. They were, as stated, giving open assistance to rebels. They afforded them the use of the railway and protection in railway territory. Japanese were, without disguise, aiding the rebel military officers, and Japanese rowdies were terrorising the citizens and police of Tsinanfu, the capital of the province. Investigations by independent people have without question established the complicity of Japanese in the Shantung upheaval, and denial of knowledge of the situation by Japan is useless.

On May 17, Mr. Lu Tseng-hsiang, Minister of Foreign Affairs, asked permission to resign, but his request was refused. He was given one month's leave of absence and the Minister of Communications, Mr. Tsao Ju-lin, was appointed acting Minister of Foreign Affairs. Mr. Tsao had previously been vice-Minister of Foreign Affairs and was thoroughly versed in all diplomatic questions affecting China and other nations.

A day later Mr. Sun Pao-chi, the Minister of Foreign Affairs, tendered his resignation, and Mr. Chow Tse-chi, previously Minister of Commerce, Agriculture and Industry, was appointed acting Minister of Finance in addition to his duties as Governor of the Bank of China. In view of the financial stringency his posts were the most difficult in the Cabinet.

### Assassination of a Revolutionary General

On May 18 General Chen Chi-mei, one of the most notorious of the revolutionary leaders, was assassinated at the house in which he was residing in Shanghai, No. 14 Rue Chapsal. A group of Chinese, introduced by a Japanese, waited on Chen Chi-mei alleging that they wished to talk to him about a loan. Some conversation ensued, the party made an excuse for suspending the conversation, and as they were shaking hands to depart the ringleader produced a revolver and shot the revolutionist at point-blank range, the bullet striking him in the forehead and killing him outright. Other shots were fired, another Chinese being killed and some wounded. Four arrests were made immediately after the shooting. The assassination created a great sensation in political circles in the South, particularly because friction existed between various factions. The murder was naturally immediately ascribed to agents of the Peking Government, and the trial will no doubt prove whether the allegations are correct or not.

The removal of Chen Chi-mei deprives the old revolutionary organization of their most capable leader. He was undoubtedly one of the most active and courageous men the party possessed. His long-time associates were Sun Yat Sen and Hwang-hsin, and with them he worked up the old revolutionary party, the Tung Men-hui, and took a prominent part in the revolution of 1911, and the rebellion of 1913, as well as that of 1916.

### The Nanking Conference and Yuan

In the meantime delegates from various provinces were proceeding to the Conference at Nanking. The "independent" provinces in the South refused to send delegates, and declined to discuss any terms with Peking while Yuan Shih-kai held his position. The first condition of peace so far as they were concerned was the retirement of Yuan Shih-kai.

Without this they refused to discuss anything, and from all reports went about their business of conducting a Southern Government oblivious of what Peking did or thought.

On the matter of retirement Yuan Shih-kai was reported to have definite views. It was stated that he was ready to abandon office provided that trouble could be avoided if he did so. In a telegram to the Nanking Conference he set out his attitude as follows, according to the *Peking Gazette:*

"When I lived in retirement in my own gardens, I had no intention to re-enter public life. Unfortunately the trouble of Hsin Hai arose and reluctantly I took on myself the burdens of the State together with others. This I did in defiance of difficulties and dangers. My spirit has been willing but my ability has proved insufficient. Thorns of trouble have sprung up everywhere. Ever since the uprising in Yunnan and Kueichow the people far and near

have greatly stirred. I confess that I lack the ability to see through misrepresentations as well as wisdom to rise to all occasions. My heart has been filled with remorse day and night and I have long cherished the desire to retire. Repeatedly have I consulted with important persons for a method by which again to set the house in order. They are all of the view that as the step will vitally affect internal and external relations, the same should only be taken with extraordinary care, otherwise disaster will result to the nation. Recently Tang Chi-yao, Liu Hsien-shih, Lu Yung-ting and Lung Chi-kuang have all demanded that I should retire, and Chen Yi has also advised me to take a rest. All these requests coincide with the intention which has long been in my heart. I, being a man of small virtue and little capability and deeply embarrassed by difficulties and hardship, earnestly hope that my original intention may be fulfilled. I assure you that I have not the least desire to linger at my post nor am I unwilling to yield power and position.

### To Hand Down Power of Succession?

"But it will be against my original intention of saving the country if I were to leave my post without devising a method for reorganisation and so leave the country to disaster. I shall not be able to face the citizens if I were to do so. The most important question now is how to devise a measure to assure our future. As soon as this measure is devised, the other question can be solved at once. The said Shang Chiang Chun have invited the representatives of the provinces to discuss the question of the "great policy" (*sic*). This I am exceedingly glad to know. The situation is delicate, and dangers internal and external are surrounding us from every side. It is therefore hoped that you will thoroughly discuss the method of 'future reorganisation' and lay down a policy. You will from time to time consult the Government and agree upon a measure that all may share in the responsibility with a view that the country may be kept safe and whole instead of coming to immediate grief. With sincere expectations, I am, The Great President."

### Shanghai Protests Against the Conference

As was to be expected the Southern leaders in Shanghai objected strongly to the Nanking conference. They regarded it as a measure solely to perpetuate the rule of Yuan Shih-kai, and consequently determined to do everything they could to prevent its voice having any weight in the country. Purporting to speak on behalf of 13,971 other Chinese Mr. Tang Shao-yi sent the following views to General Feng Kuo-chang:

"For the Martial Perusal of Chiang Chun Feng Hua-fu: As the result of the sedition of the Chief Executive the country has been thrown into the whirlpool of civil war. The whole country has been shaken from the foundation; and the four classes of people have been robbed of livelihood. The country has therefore received with some feeling of approval the news that you were to unite the provinces in an effort to solve the present question.

"But we are greatly surprised to learn from the newspapers that your name heads that of others under a telegram to the provinces, in which eight points for discussion are proposed. In the opinion of the public this is an ill omen; for how can we imagine a broad-minded person like you to put time into writing such extraordinary views. Without a single exception all the righteous banners against Yuan have been raised with the specific purpose of upholding the Provisional Constitution. There can be no other means which will bring about peace and yield satisfaction to all except the revival of the Provisional Constitution.

### Position of the President

"You have indicated the only solution when you stated in your telegram that the law must be the final arbiter. But a careful perusal of the eight points you have raised shows that, with the exception of point 4 which touches on the financial question, every one is in direct conflict with the law. Take for instance the first point, which deals with the question of the Great President. The first sentence is that Yuan derived his authority from the power entrusted to him by the late Tsing House. On what principle of law is this based? Let us leave aside the law and look at the question in the sense of fact. Yuan Shih-kai received his title as provisional President upon the formal and legal election by the provisional Senate of Nanking; and he assumed the office of the Great President as the result of a formal election in accordance with law by the National Assembly. Would it not have been a useless waste of energy to hold such elections if the Tsing House could secretly appoint a Great President?

### The Vice-President Must Succeed

"The reason why Yuan has lost his position as the Great President is because he has rebelled against the nation and illegally assumed the role of an emperor. As the Vice-President is not at all implicated in the plot of sedition, how can his status as the Vice-President be cancelled simultaneously with that of the President, who has actually committed an act of high treason? It is obvious that General Li Yuan-hung has the right to succeed as the new Great President of the Min Kuo. This is plainly provided for in the Presidential Election Law. On what is the nation going to base its authority if even this is to be denied?

### The National Assembly

"As to the second question of the National Assembly. The question whether the parliament organisation law and the election law need to be revised or not rests with the National Assembly itself. We state with emphasis that no one is entitled to or will be allowed to alter the same at his own sweet will before the same have been formally revised in accordance with law.

### The Question of Constitution

"The third point is about the constitution. If the Provisional Constitution of the first year of Min Kuo is to be used as the standard, as your telegrams say it will be, how can any one tolerate the idea of a non-legal organ (the Nanking Conference for instance) assuming the right to decide which part is suitable and which part is unsuitable for observance?

### Location of the Army

"If the proposal made in point 5 respecting the army is to be actually put into effect, all the troops (Northern) hitherto opposing the righteous army of the South in the provinces of Szechuan and Hunan will be withdrawn to the Capital, and thus practically surround the new government. Can harmony and peace result from such a policy of suspicion and frightfulness?

"Furthermore, if the proposal of point 6 is to be carried out, Chu Jui, who opposed the righteous cause in the province of Chekiang, and Wang Chu-tung, a co-conspirator, will all be restored to their former posts. The confusion in future will then be worse than even it is now.

### Punishment of Monarchists

"Your 7th point refers to the principal offenders. You openly recognise in your telegram that the sins of Yang Tu and others are piled mountain high and as innumerable as the hair; yet the only punishment you mention is to deprive them of the rights of citizenship. If so then the rebels [monarchists], who hoped to become princes and dukes if their movement succeeded, would only be considered as social outcasts. Who will not want to try his hand at sedition if this is to be law?

"As to the party members you mention in the 8th point, they will be entitled to have their rights restored to them as they have been unlawfully trampled upon for their opposition to Yuan. How then can any one unlawfully judge who is to be punished and who is not?

### The Only Question for Settlement

"We hear that you have already telegraphically advised the provinces, which have not yet declared independence, to send representatives to Nanking to attend a conference, and it is your intention to discuss these eight points at the conference and have the same passed for actual observance. You must remember that the country will indubitably fight if a rebel is upheld in the position of Chief Executive, leaving alone the fact that usurpation of a high post is forbidden by law and decency. How much more this is true when we remember that by the retirement of one man the whole country will come back to life once more. Yuan has repeatedly made the declaration that he is willing to sacrifice himself for the salvation of the country and the people. Why then is he still clinging to his post? There is and can be only one solution to the present situation; that is, Yuan must retire and General Li Yuan-hung must succeed him in office. This is a principle that is as great as the heaven and earth; and no one can have any objection to it. All other questions properly belong to the new Government and therefore have nothing to do with the retirement of Yuan.

### A Word of Warning

"If the law is to be thrust aside merely for the purpose of retaining Yuan in his position, and artificial means devised to attain this end, nothing beneficial will result. On the contrary war will be prolonged. It is not difficult to see on whose shoulder responsibility will then rest. We wish to point out that the citizens will under no circumstance recognise the decision of the Conference.

### Three False Views

"We have to notice the alleged triple reason why Yuan cannot retire: namely, (1) diplomatic difficulties; (2) revolt of troops, and (3) financial embarrassment. These reasons are false. What the foreign Governments have recognised is the Chung Hua Min Kuo. The legal successor to the presidential office must therefore be recognised by the friendly foreign powers. Besides, it is a fact that the foreign diplomats have just now lost all confidence in Yuan. Even for solving diplomatic difficulties the retirement of Yuan is the only solution. The troops are servants of the country and not servants of Yuan. If it is to be believed that no one but Yuan is able to control them, what can we expect of them if Yuan should die a sudden death? It has been an open secret that it was Yuan who incited the troops to revolt in Peking and Tientsin in the year Jen Tse. It is apparent therefore that unless the person in power order the troops to revolt upon his retirement, the soldiers will give no trouble. As to the question of finance, Yuan has done all he could during the last four years to scrape every bit of money, yet the confusion of finance has increased day by day. Recently for the

purpose of massing silver to pay the troops for another war, he has arbitrarily ordered the Bank of China and Bank of Communications to suspend specie payment, which has created a financial panic unknown in history. It will thus be seen that every day's delay regarding Yuan's retirement means more financial trouble to China.

"The conclusion is therefore precisely the opposite to that advanced in your telegram. Tang Shao-yi and his colleagues, bitterly struck by the prospect of the sad fate of an exterminated nation and seeking for a method to avoid such a calamity, are convinced that salvation lies in one word, namely 'Law.' Any attempt to run against it will result in disaster. In pursuance of our duty as citizens of the Min Kuo, we hereby present you this open message and pray that the wise and virtuous will give it due consideration. In the interests of the country, we remain

Yours,

Citizens from other provinces but resident in Shanghai,
Tang Shao-yi and 13,971 others."

On May 19 and 20, the Conference held meetings. The following delegates were nominated to represent the following provinces by the officers named but all were not in attendance when the Conference opened:

Kiangsi:—Ho En-pu representing the Chiangchun, and Chen Yong-chi representing the Civil Governor.

Honan:—Pi Tai-chang representing the Chiangchun, and Ye Chi, representing the Civil Governor.

Shansi:—Tsai Ting-hsien, representing the Chiangchun, and Li Chun representing the Civil Governor.

Shantung:—Sun Chia-lin, representing the Chiangchun, and Ting Chia-tu, representing the Civil Governor.

Mukden:—Liu En-hung, representing the Chiangchun, and Chao Hsi-fu, representing the Civil Governor.

Jehol:—Hsia Tung-jao representing the Tutung.

Kirin:—Chang Ju, representing the Chiangchun and Tai Shi-yuan, representing the Civil Governor.

Chahar:—Ho Yuan-chun, representing the Tutung.

Suiyuan:—Hsiun Kui-sheng, representing the Tutung.

Heilungkiang:—Li Ching-lin, representing the Chiangchun.

Hunan:—Hu Yin-su, representing the Chiangchun.

Hupeh:—Feng Yu, representing the Chiangchun and Yang Wen-kai, representing the Civil Governor.

Fukien:—Ko Wen-hsiang representing the Chiangchun.

Shanghai:—Chao Zen, representing the Military Commissioner General Yang Shan-teh.

Woosung:—Wang Ping, representing the Deputy Military Commissioner General Lu Jung-hsiang.

Szechwan:—Chang Lien-feng, representing the Chiangchun and Liu Hsi-chun representing the Civil Governor.

It was early seen that the delegates were not unanimous as to what action they should take to determine the future of the Presidency. Some were in favour of retaining Yuan Shih-kai, others advocated Li Yuan-hung, while a section desired an election for President as soon as possible. This group were prepared to allow Yuan Shih-kai to retain his post until a Parliament could be called and an election be held. No delegates from the "independent" provinces were present but southern leaders expressed their views by telegraph. Delegates from the South were invited, and particularly it was desired that Tang Shao-yi should attend, but the latter declined to take any step until Yuan Shih-kai had made it manifest that he would retire. Discussion ultimately developed a line of action. It was decided to intimate to the South that the conference was in favor of Yuan Shih-kai retiring, and was ready to announce that, but in view of such a step it was advisable to have delegates from all provinces present, so that a vote embracing all provinces could be taken. To enable the southern representatives to be present, the Conference was postponed for a few days.

At this time of writing (May 24) the indications are that Yuan Shih-kai will be requested to relinquish office, and that there will then be a contest for the post between General Tuan Chi-jui, General Feng Kuo-chang, and Tsen Chen-hsuan.

The Japanese have expressed a desire to give sanctuary to Yuan Shih-kai, and have, it is stated, gone so far as to arrange for train and boat to carry him to Japan. It is likely, however, that the invitation will not be accepted, but that some other Legation will do the honours in the event of Yuan Shih-kai needing protection should he ultimately decide to leave Peking as desired by the people.

## NEW ZEALAND WATER POWER

The scheme for the harnessing of the Wairoa Falls for hydro-electric purposes is now rapidly approaching completion. The power from the falls is to be used for the supply of electricity to the town of Whangarei. The work has been undertaken by a local cement company which is also erecting a new cement mill at Portland, on the shore of Whangarei Harbour and it is expected that in three or four months time the whole of the new works should be in operation. The central principle of the hydro-electric scheme is the tapping of the Wairoa River, one of the main branches of the Northern Wairoa, just above the celebrated Wairoa Falls, which are situated about midway between the two coasts of North Island, and the conveyance of a large body of the water to a power house on the river-side a mile and a half lower down.

The canal into which the water is diverted has a minimum width at the bottom of 24 ft. and a maximum width at the top of 60 ft. This canal terminates in a reservoir 360 ft. long by 100 ft. wide, whence the water is conveyed through the largest water-carrying pipes in the Dominion to the power house. The power house is designed to accommodate eventually turbines of 6,000 h.p.; the 3,000 h.p. plant now provided is sufficient for present purposes, but can easily be doubled by augmenting the pipe lines and electrical machinery as the demand increases.

Some of the latest ideas and inventions have been employed in connection with the scheme. One of these is an automatic weir on the overflow of the big dam, the first of its kind to be erected outside Europe. The installation of this weir, which consists of two 44 ft. gates which rise and fall automatically with the flood water, is the result of a demand by the Public Department that arrangements should be made in the river for the discharge, in flood-time, of more than 30,000 gallons of water per second.

## JAPANESE HYDROELECTRIC COMPANY

It is reported that business men of Tokyo are planning a new hydroelectric company to utilize the water power of the Namchon River in the south of the Korean peninsula. The company will be capitalized at $1,500,000, and will purchase the rights of the present Taiku Electric Co. It will not only supply electricity to the district but will also assist in the irrigation of neighboring lands. As application has already been made, it is expected that work will be begun in the spring of 1916. The plant of the company will be located at Hyopchon, South Kyongsang Province.

## SIAM'S IRRIGATION SCHEME

The Siamese Government has decided to proceed at once with the construction of the "Prasak" scheme of irrigation. The estimated cost of this scheme is $4,255,000, and it is designed to provide an extensive canal for Prasak, and to develop more fully the existing canal system of Klong Rangsit. In the budget estimates for the fiscal year ending March 31, 1916, $555,000 was set aside for irrigation purposes, and the preliminary expenses in connection with the Prasak scheme will be provided for by this appropriation. This project will initiate a system of irrigation which will eventually make about 2,400,000 acres of waste land of lower Siam available for rice cultivation, and for the carrying out of which the British India irrigation expert thought that a capital outlay of about $50,000,000 gold would be required during the present generation.

## JAPAN'S INTEREST IN SHEEP RAISING

Japan's new interest in sheep raising is noted in Australia, where press reports give the details of the visit to that country of the chief of the Imperial stock farm at Hokkaido. The Japanese official purchased some merino and Romney rams at Monaro in New South Wales, and sought Corriedales and Romneys in New Zealand. There are now in Japan not more than 15,000 sheep, and only by the most intensive efforts can the country support 500,000. Even should Japan be able to raise the number of sheep to half a million, this number would not begin to meet the demand for wool and for mutton, and the nation would have to continue importing both. The possibilities in Chosen are cited as making a radical difference in Japan's standing as a consumer and importer of wool.

# ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

## RAILWAYS

**South Manchurian Railway Estimates.**—The S. M. R. Co. Enterprise Estimates for the current fiscal year are larger than those for the preceding year by about Y6,000,000, and are scheduled under various headings as follows:

ENTERPRISE ESTIMATES

| | | |
|---|---|---|
| Mining ... ... ... ... ... ... | | Y5,741,273 |
| Railway | Main & Branch Lines. | 2,562,350 |
| | Mukden-Antung Line. | 207,205 |
| Harbour ... ... ... ... ... | | 1,793,873 |
| Improvements in Railway Area and land items ... ... ... | | 858,507 |
| Buildings ... ... ... ... ... | | 411,694 |
| Electricity ... ... ... ... ... | | 159,615 |
| Gas ... ... ... ... ... ... | | 74,298 |
| Hotels ... ... ... ... ... ... | | 15,985 |
| | | 11,824,799 |
| Emergency fund ... ... ... | | 500,000 |
| Total ... ... ... ... ... ... | | Y12,324,799 |

The principal items of enterprises, both new and continuation, are as follows:—

Mining: Acquisition of appliances and installations for introducing the sand-flushing method into the Fushun Collieries. Purchase of the area for gathering sand. Extension of sidings for transporting coal and sand. Excavation of pits for sand flushing. Construction of sand waggons, locomotives, and passenger cars. Perfection of draining, coal screening, and transporting equipments. Extension of the Water Gas Producer Factory. Construction of a sulphate of ammonia manufactory. Construction of additional housing accommodation and extension of the waterworks.

Main and Branch Lines: Double-tracking of Suchiatun-Mukden Section. Construction of retaining walls and embankment, draining, cutting, etc. Continuation of the double-track bridging work over the Hun, and construction and repairing of other bridges. Laying of rails to the total length of about 38 miles. Construction of additional sidings. Improvement of points and crossings. Foundation work of new engine-shed at Dairen. Construction of engine and car sheds at Mukden. Improvement and installation of signalling appliances. Laying of additional telegraph and telephone wires. Extension of electric repairing shops. Additional equipments for Railway Workshops, Shahokou.

Mukden-Antung Line: Cutting work and construction of drains and culverts. Improvement of points and crossings. Improvement and installation of signalling appliances. Purchase of tarpaulins. Construction of four locomotives for goods trains, four 1st class cars with sleeping accommodation, four 1st class cars, ten 3rd class cars, four parcel cars, and 80 flat cars.

Harbour Works: Reclamation of shorefront at Jijiko (East End) and Hama-cho. Continuation of dredging operations in the Harbour. Continuation of construction of Northwest Breakwater and Wharf No. 3. Re-enforcing of west quay wall of Wharf No. 2. Removal of Concrete Blockyard. Re-bunding work at Yingkou and Antung. Continuation of construction of a permanent warehouse at Dairen Wharves. Installation of two cranes for cargo-work at the new warehouse. Sundry improvements at Antung, Yingkou, and Shanghai.

Improvements in Railway Area: Water supply, construction of roads, bridges, drains, etc., at the Railway Towns. Construction of isolation wards at Dairen and Penchihu and a ward for the weak-minded at Mukden; and purchase of necessary medical instruments, etc. Construction and extension of school-houses at Kaiyuan, Ssupingkai, and Changchun. Construction of school houses for the Chinese Primary Schools at Hsiungyocheng and Changchun, construction of dormitories for South Manchuria Medical College and South Manchuria Technical School, etc. Extensions and alterations for Agricultural Experimental Stations and Central Laboratory.

Buildings: Construction of new Wharf Office Building, Dairen, Stores Depot, and a storehouse for Harbour Works Office, etc.

**S. M. R. Traffic Returns.**—The South Manchuria Railway Traffic Returns for April totalled Y1,994,540 giving the daily average of Y66,484 and showing a decrease from the figures for the corresponding month of last year of Y21,518.

Increase of Y6,000,000 in the estimates for the current fiscal year over those for the last fiscal year has been announced. The total deficit to be met in the current fiscal year is about Y8,000,000, which amount will be raised by further calls on the Company's shareholders probably in October and again in April next year.

**Shanghai-Hangchow Railway.**—A peculiar state of political affairs has stopped traffic over a 21 mile section of the Shanghai Hangchow Railway whose tracks lie in both Kiangsu and Chekiang provinces.

The Shanghai-Hangchow Railway, it is stated, is quite ready to run through trains to the Chekiang capital, but it is pointed out that Chekiang province has declared its independence of the Peking Government and Kiangsu has not. Consequently a state of semi-hostility exists between the two provinces. This political condition may exist only in theory, but until the two provinces are of one mind politically, the military authorities of each may prefer that through railway traffic should be suspended. Trains are running from Shanghai to Sungkiang, and from Kashai to Hangchow. The distance between the two stations, which may be covered on foot, by launch, or railway trolley, is 21 miles. When the military authorities of both provinces are in full agreement through traffic will be resumed.

**Russo-Japanese Through Traffic Conference.**—Altogether 43 items were agreed upon at the Russo-Japanese Through Traffic Conference which was signed on April 28th, and the Conference brought to a close. The next Conference is expected to be held at Petrograd in November. The chief features of agreements reached are as under:—

Instead of holding a formal meeting of the respective delegates once annually, a meeting may be called whenever occasion may require. As regards the issue of Japan-Manchuria excursion tickets the Russian delegates shall arrive at a final decision after their return to Petrograd. The fall of the rouble shall not be made a cause of loss to the Japanese members of the compact. The interpretations of the through goods tariff and shall be made uniform. Certain additions shall be made to the lists of the through traffic stations as well as to the list of through goods. Matters concerning the freights on cotton goods and through railway goods in bond for transportation through Chinese territory also were settled.

**Japan Plans Broad Gauge.**—At a meeting of the Railway Investigation Commission which was held recently at the Railway Board, Count Okuma, the chairman, was absent, and Dr. Soyeda, assistant chairman, presided. The relative merits of the broad and narrow gauge systems for carrying freight were discussed. Dr. Furukawa, vice-president of the Imperial Railway Board, and Mr. Sugiura and Mr. Morimoto, both directors of the board, replied to inquiries raised by other members of the commission.

Under the plans for making the railway system of Japan a broad gauge system recently announced by the Railway Board, it is estimated, will take until 1943 for completion and will be carried out at a cost of approximately 1,408,000,000 yen. The outlines of this comprehensive project have been sketched in a report submitted by a committee which has made estimates of the outlays necessary and has even worked out the figures and measurements in connection with the tracks and rolling stock for the new system. The money necessary for the proposed change will come from the following sources:

From 1916 to 1940, 20,000,000 yen shall be transferred from the general accounts of the government annually, making 500,000,000 yen in all. The profits of the railways in those years will amount to 908,000,000 yen, making a total of 1,408,000,000 yen. Against this, the expenses of construction and the extension of new lines will be 317,000,000 yen; the expenses for repairs of various lines other than the broad gauge lines (Kyushu, Hokkaido, Shikoku, Sohu lines), 209,500,000 yen; the expenses of changing the line from Tokyo to Shimonoseki into a broad gauge line 232,000,000 yen; repairs after the change of that line, 49,400,000 yen; the change of lines other than the trunk line in Honshu into broad gauge lines 600,100,000 yen, which will bring the total up to 1,408,000,000 yen.

The expenses of changing the main line are estimated as follows: For the period to 1926 the outlays for railways, 192,625,784 yen; for machine shops, 5,393,500 yen; for cars 59,978,-545 yen; for electricity, 1,639,191 yen; for expenses connected with the railway tracks after the change, 4,806,000 yen; for cars in that connection, 12,090,000; a total of 276,533,040 yen. The disposition of disused rails, bridges, sleepers and cars is expected to bring in 44,270,970 yen and when this amount is deducted, the expenses will amount to 232,260,-270. Between 1926 and 1943, the expenses of the change, after deducting the sale of disused property, will be 297,152,450 yen. In the business department the entire amount needed will be 50,078,713 yen.

The standard gauge will be adopted for the main railways. The width of tracks will be 4 feet 8½ inches; the weight of the rails 90 pounds for the trunk lines and 80 pounds for the side lines; the height of the cars 15 feet 6 inches, the width 12 feet 3 inches; the weight of the locomotives, 108 tons for express passenger service, 86 tons for ordinary passenger service and 160 tons for freight service. The capacity of a passenger car will be 132 persons (third class); the average length 60 feet 6 inches. The average capacity of the freight cars will be 26.65 tons, with an average length of 24 feet 3 inches. The aver-

age number of cars in one train will be 87 for passengers, and the average capacity of trains will be 629 persons, or 30 cars of freight with a maximum capacity of 780 tons and an average capacity of 390 tons.

**Japanese Travellers Save Money.**—The economical tendencies which are now prevailing in Japan are marked especially among railway passengers. According to the figures given by the railway bureau in 1907, the number of the first and second class passengers decreased, while that of the third increased. This was again true in 1915. The figures for 1911 and 1915 follow:

| | 1911 | 1915 |
|---|---|---|
| First class passengers ... | 7,432 | 5,733 |
| Second class passengers | 162,043 | 161,737 |
| Third class passengers... | 2,830,854 | 3,125,103 |

**Chosen Ry. Hotel at Pyengyang.**—The local press reports that the authorities of the Railway Bureau of the Government General of Chosen have included in the budget for the next fiscal year (ending Mar. 31, 1917) an estimate for the erection of a railway hotel at Pyengyang, Chosen. Correspondence regarding supplies for this undertaking should be addressed to S. Inohara, Esq., general manager of the Railway Hotels, care Chosen Hotel, Seoul.

**Railway Facilities at Vladivostok.**—The British consul at Vladivostok reports that cargo arriving at that port now is proceeding to European Russia without any serious delay. This is the case with private cargo as well as with Government cargo. The number of cars leaving Vladivostok daily for Siberia and Russia is 200, each car carrying 1,000 poods (about 18 tons). As a rule 100 of these 200 cars are taken up for the conveyance of cargo belonging to the Government, the remainder being allotted to owners of private cargo. The distribution of space is in the hands of a committee, which meets every week, and is presided over by the commandant of the fortress. For some time, since Government cargo has been slack, there has been ample accommodation for the goods of private persons, and it is a matter of fairly frequent occurrence for this space to be partly unutilized. It will thus be seen that there may be said to be no congestion of goods at the port, since all merchandise arriving is proceeding normally. Additional berthing accommodation has been supplied recently at Vladivostok, but this does not at present increase the capacity of the port for general trade, since the new quays and several of the old ones are taken up by the steamers bringing railway material from the United States. There is at present, however, no lack of room for general cargo steamers.

**Steel Cars on Indian Railway.**—The Great Indian Peninsular Railway which recently successfully experimented with one steel passenger coach, has now constructed an entire train of that material. The train runs as the Bombay-Delhi Express, carrying intermediate and third-class passengers. Each carriage is 68 feet long and the body, including the roof, is of steel plate riveted and welded to steel supporting members, so that the whole of the body and the underframe, on which the former is built as one piece, are of steel. Inside the "shell" the fittings and furniture in touch with the passengers are of wood, as are the window frames, venetians, etc., while the actual lining is of asbestos heat-resisting composition, held up with wooden mouldings secured to the steel members. One carriage has all its internal woodwork made of Japanese ash as an experiment.

**Siamese Railway Progress.**—The Siamese Railway is making good progress. The line has been opened south of Koh Lah 26 kilometres to Huey Yang, and a further 50 kilometres south of the town to Bang Taphan. It is proposed to open the intervening gap between Bang Wa and Bang Taphan in August, when there will be through rail communication between Bangkok and Singgora. At present there is a tri-weekly train service from Trang to Nakon. The date fixed for the Bangkok-Kedah line to be opened is June, 1917, but doubtless there will be through rail communication before that.

**Shanghai Tramways.**—The following is the traffic return of the Shanghai Tramways (Foreign Settlement) for April, 1916, and for 4 months ended 30th April, 1916, with figures for the corresponding periods last year:—

| | April, 1916. | April, 1915. |
|---|---|---|
| Gross Receipts | $118,791.02 | $100,693.83 |
| Loss by currency depreciation......... | 31,305.01 | 27,216.18 |
| Effective Receipts......... | $87,486 01 | $73,477.70 |
| Percentage of loss by currency depreciation ......... | 28.00 | 28.79 |
| Car Miles run.. | 298,039 | 261,818 |
| Passengers carried ........... | 5,252,402 | 4,362,344 |
| | 4 months 1916. | 4 months 1915. |
| Gross Receipts | $472,298.07 | $410,824.59 |
| Loss by currency depreciation ......... | 123,322.76 | 109,479.02 |
| Effective Receipts ......... | $348,975.31 | $301,345.57 |
| Increase ......... | $47,629.74 | |
| Percentage of loss by currency depreciation ......... | 27.74 | 28.44 |
| Car Miles run. | 1,165,773 | 1,053,923 |
| Passengers carried. ........... | 20,837,820 | 17,043,791 |

$ Increase 2,894,029 passengers or 16 per cent.

**Shanghai to Hankow by Rail.**—Now that trains are running daily from Hsuchowfu to Chengchow without change of cars, "via Nanking" has replaced the River trip via Hankow as the fastest route for Shanghai travellers to Kaifeng, Sianfu and Sanchowfu. This is due to the opening of the Hsuchowfu-Kaifeng section of the Lung-Hai Railway. From Chenchow, construction is being carried on towards Sianfu, and trains are running regularly to Nuanyintang, a nine hours' journey from Chengchow.

**Manila Railroad Extension.**—Opening up a rich copra producing country on the Pacific coast, and rendering the means of communication in that part of the Philippines much easier, the Manila Railroad Company inaugurated on May 8, a new line from Manila to Hondagua, in Tayabas, a distance of 240 kilometers. A party headed by Horace L. Higgins, president and general manager of the company made the trial trip. From Laguna province to Hondagua on both sides of the car track are rich coconutgroves and in Tayabas, long stretches of valuable forest land could be seen. It is the plan of the railroad company to extend the new line as far as Nueva Caceres, in Ambos Camarines, thus connecting the Manila principal line with the detached line operating now in the Bicol provinces. But this project will not be undertaken for two or three years. With the opening of the new service, the present length of track operation of the company is 625 miles. From Hondagua there is a short line running to Calauag, toward the south. After the opening of the service, it is the intention of the company to establish steamer connection between Hondagua and the ports of Alabat, Sangirin, Mauban, Infanta, Baler, and Polillo (to the North), on the Tayabas Pacific coast, and to Quezon, Capalonga, Mambulao, Paracale, Mercedes (Daet), Naga anchorage and Naga wharf (to the South), in Ambos Camarines, thus bringing these ports and quicker and closer connection with Manila than the present all water route.

**Censures P. I. Railway Plan.**—The movement started by the Philippine government to purchase the Manila Railroad Company's lines, details of which have appeared in the last two issues of the Far Eastern Review, has awakened some antagonism on the part of capitalists who have large investments in the Philippines Charles M. Swift, head of the Manila Electric Railroad and Light Company, and President of the Philippine Railway, condemned the agreement reached between the owners of the Manila Railroad Company and the American administration by which the Philippine government is to purchase the road. According to the details of the agreement, President Wilson has given his sanction to the scheme and has also approved a plan to safeguard the owners of the $16,125,000 bonds now held in the Unites. The plan, however, does not countenance safeguarding the holders of Philippine Railway bonds, on which interest has been guaranted by the Philippine government.

"The Manila Railaoad. so called," said Mr. Swift, "is owned by an English corporation, represented in the United States by James Speyer. I have not been taken into the confidence of the Administration enough to know why this particular corporation is so specially favored over American ones.

"I understand that the first payment will exhaust most, if not all, the funds in the Philippine treasury, which are raised specifically for other purposes. As the Jones bill carefully restricts the power of the Philippine government to raise money by a bond issue, it seems a little inconsistent to rush through a sale that will make a further bond issue absolutely necessary, without any investigation of the circumstances."

## SHIPPING

**New Seattle-Pacific Line.**—From Seattle comes the announcement that the Chinese-American Products Exchange Company has backed a group of Seattle business men who have formed a $5,000,000 company for a new freight service from the Pacific Slope to China, Japan and the Philippines. The Chinese-American Products Exchange Company has a capital of two million yen, with branches in Shanghai, Hongkong, and Manila. Lately it has been experiencing difficulty owing to the shortage of bottoms, and it has promised the newly organised Seattle shipping group to give it all its shipping business provided the new service meets its requirements. The company had announced its in ention of starting the new freight service within three months, but it was learned later that the company had already engaged the steamer Republic, 4,629 tons, to load for the Far East. Her departure date was then fixed for April 15. So pressing was the need for shipping space that the vessel was being loaded and repaired at the same time.

The Republic has a decidedly interesting history during the last 18 months. It was formerly the German-Australian line freighter Walkure, and had just left New Plymouth, a New Zealand port, when war broke out in August, 1914. Arriving at Papeete, one of the Pacific Islands, it was there a day when the German cruisers Scharnhorst and Gneisenau came to the island and shelled it. The Walkure at the time was lying alongside the French gunboat Zuhlee, which the Germans made their mark, but in sinking the small vessel, the raiders also sank the Walkure. Last year a San Francisco syndicate was formed to refloat the ship and this was successfully accomplished last January. The vessel arrived at San Francisco on March 24, and was refitted and renamed the Republic. It is purely a cargo steamer, but the hull nowadays is worth treble the sum compared with pre-war times under German owners.

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**Nile on Run Again.**—News from San Francisco by the Nippon Maru on May 6, reports the sale of the Pacific Mail steamer Nile, which for many years was on the run between San Francisco and the Orient. The purchaser of the vessel is H. F. Carmichael of Hongkong and while the terms are announced as "private," the figure was approximately $800,000. The Nile was registered as being owned by the Nile Steamship Company. The real owners, however, were the Southern Pacific Company, which chartered it to the Pacific Steamship Company. The Nile made its last trip from San Francisco July 25, 1914, and upon arrival in the Orient was taken over by the British Government for transport duty and only recently released. Built in Glasgow in 1893, the ship is 420 feet long, 52 feet wide and is of 3,156 tons net registry. It is anticipated that the steamer will be put on a schedule between "Frisco" and the Orient.

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**A. I. C Acquires Two Fleets.**—The American International Corporation, organized soon after the outbreak of the European War, with a capital of G.$50,000,000, is reported to have just bought up the rights and interests of the International Mercantile Co. and the Atlantic Transport Co. The Mercantile Marine Co. owns the following steamers:—Finland, 12,760 tons, built in 1902; Poland, 12,760 tons, built in 1902; New York, 10,798 tons, built in 1888; Philadelphia, 10,786 tons, built in 1889; Saint Louis, 11,629 tons, built in 1895; and the Saint Paul, 11,629 tons, built in 1895.

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**Java-China-Japan Linie.**—With regard to the reports of the increase of capital by Fl. 2,000,000 of the Java-China-Japan Linie, it is stated that the issue concerns the second half of the fourth series shares, amounting to Fl. 500,000 and the entire fifth series amounting to Fl. 1,000,000, and subscriptions were invited for Fl. 1,500,000 in shares of Fl. 1,000 each at the rate of 125 per cent. The results of the year 1915 are favourable, so that a dividend of 7 per cent. can be paid. The results of 1916 up till now are satisfactory, whilst those of the Java Pacific Linie, opened in December, 1915, have come up to expectations. The fleet consists of nine steamers of 49,188 gross tonnage, while the steamers Tjisalak and Tjileboet, of 5,800 tons each, are under construction.

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**China Mail Doubles Fleet.**—The China Mail Steamship Company, the only American company now operating a regular steamship service across the Pacific, has acquired the liner Victoria, formerly owned by the Pacific Steam Navigation Company of Liverpool, according to a recent dispatch received in Yokohama. The Victoria is given in Lloyd's Register as a steamer of 5,969 tons gross. The China, which is at present the company's only liner, has more business than it can handle. The China booked a capacity cargo at Hongkong and did not touch at Yokohama on her April voyage to the United States, calling at Nagasaki for passengers only.

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**U. S. Constructing Many Ships.**—According to a statement compiled by the foreign trade department of the San Francisco Chamber of Commerce and read at the Commonwealth Club dinner at the St. Francis by Robert Newton Lynch, vice-president and manager of the Chamber, on April 17, there are now 230 ships of more than 3,000 tonnage in construction in the United States. The cost of these vessels, all of which will have been completed before 1917, will aggregate $16,560,000. Charles H. Bentley speaking on "California's Commerce and Our Merchant Marine," said that the U. S. Government was in the humiliating position of having to violate its own navigation laws by chartering foreign vessels to carry government freight between two of its own ports, something that a shipper is prohibited from doing. This action was not merely a present condition arising from the European war but existed in time of peace, as it will be remembered that the Government had to hire foreign vessels to haul coal to the Pacific coast when the battleship fleet made its memorable trip around the world.

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**B.A.T. Boats for Pacific.**—Four more boats will soon be running in a trans-Pacific service, according to reports published in Shanghai. The British-American Tobacco Company has purchased four large new freighters with which the company will open a freight service. More boats are said to have been acquired, but the four freighters will be put into service first. At what ports they will touch is not yet known. An agent for the line has already been appointed at Shanghai.

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**Eleven Steamer Pacific Line.**—According to the San Francisco Examiner details of the plans of the Oriental Alliance Steamship Company are as follows: Eleven steamers of the $10,000,000 company will soon be operating out of San Francisco to ports in the Far East. Peter D. Milloy, president of the company, which recently organized with a fleet of nearly twenty vessels, stated that the eleven boats to be placed on the Pacific Coast were freighters from 500 to 10,000 tons, manned by American crews under American registry. Included in the company's fleet, which is operating on the Atlantic and in European waters, are the Hocking and Genessee, recently international figures through their seizure by the British Admiralty.

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**Minnesota May Come Back.**—There is a possibility that the liner Minnesota, formerly operated by the Great Northern Steamship Company across the Pacific, may return to Oriental waters in the near future, says the Japan Times. Early in April the vessel was undergoing an extensive reconstruction at the Union Iron Works. Sixteen boilers had been taken out, and new ones were being fitted on a new plan which will make the coal consumption more economical. It was reported in San Francisco early in April that negotiations were proceeding between the owners of the Minnesota and the International Corporation for the charter of the vessel for the Oriental trade. It is known that a branch of the Corporation has been seeking a large steamer for some weeks past to carry certain steel products to Vladivostok and Northern China.

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**Search for Rio Pasig.**—A cablegram from the Bureau of Insular affairs received at the Philippine Executive Bureau says the Federal Government had ordered two revenue cutters out to look for the Rio Pasig, which is believed to have been lost while enroute from Seattle to Vladivostok. The message stated that all steamers leaving the north Pacific coast have been advised to watch for any signs of the steamer, which was manned by a Philippine crew, most of the members of which have relatives in Manila. The vessel is owned by Vicente Madrigal.

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**Launch at Taikoo Dockyard.**—The str. Kajang, built for the Straits Steamship Co., Ltd., of Singapore, by the Taikoo Dockyard, was successfully launched in April. The Kajang measures 286 feet long over all, 41 feet beam, and 21 feet 9 inches moulded depth, and is constructed of Siemens-Martin steel to owners' scantlings. A double bottom is fitted amidships, suitable for water ballast or oil, the forward and after peaks being similarly arranged. Accommodation for a few passengers has been provided in a house amidships and on the bridge deck, the Captain, officers and engineers being accommodated on the bridge and boat decks, and the crew on the upper deck. The cargo handling arrangements are eight steam winches and six steam cranes ensuring rapid handling of cargo. The machinery consists of one set of triple-expansion engines of the builders' own make, having cylinders 18 inches, 29 inches and 48 inches diameter with 33 inches stroke, steam being supplied by two multitubular boilers, also constructed by the Taikoo Dockyard. The sister ship Kamuning will be launched at an early date.

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**New Yangtse Steamer.**—The Lien Hua, launched from the yards of Messrs. Nicolas Tsu, is a sister ship of the Chu Chuan, built by the Sing Fah Yung Co., Ltd. and is for the Ichang-Chungking service of the Szechuen Railway Company. The new vessel, 165ft. over all, and 158ft. between perpendiculars; moulded breadth 26ft.; and moulded depth 8ft. is fitted with two sets of triple-expansion engines, with cylinders of 12in., 20in. and 30in. diameter, by 15in. stroke, developing about 600 horse-power from each engine. Auxiliary pumps worked independently of the main engines, consist of one air pump, one centrifugal for circulating water through the condenser, and general service duplex pumps. The two boilers of the water-tube type, were built at the works. They supply steam at a pressure of 220lb. per square inch, and have been tested to a hydraulic pressure of 440lb. A small watertube boiler, for supplying steam to the auxiliaries in port, has also been made at the works. A motor-driven dynamo operates lights and fans throughout the ship.

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**New Philippine Line.**—The Hak Yek Steamship Company, organized by well known Chinese of Manila, has filed incorporation papers showing capital stock amounting to P600,000 with P330,000 subscribed for and paid up, to start operations in inter-island shipping trade.

Benito Siy Cong Bieng, of the well known Siy Cong Bieng Steamship company, Jose Velasco, owner of a general store, and Attorney Albino Z. Sycip, are among the incorporators. The directors are composed of the above company and Yap Tian Sang, and Chua To Key. Siy Cong Bieng has been designated treasurer. The shares are P1,000. Messrs. Siy Cong Bieng and Velasco hold P105,000 each, while Mr. Yap has P110,000. The other two members of the board hold P5,000 each.

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**N. Y. K. Adding Nine Liners.**—Nine vessels with aggregate gross tonnage of 54,800, comprising three vessels of 7,500 tons class ordered from the Kawasaki Dockyard Co.,

three vessels of 7,300 tons class from the Mitsubishi Shipbuilding Yard, Kobe, and three more of 3,700 and 3,000 tons classes from the Mitsubishi Shipbuilding Yard, Nagasaki, will be added to the Nippon Yusen Kaisha fleet by the end of next October. On the completion of these vessels, the Company's fleet will amount to fifty vessels with aggregate tonnage of 485,600.

The Board of Directors of the N.Y.K. have been approached by influential shareholders to ask for an increase of dividends. The Board, it is said, have their own plan and are about to submit it to the shareholders for approval. In view of present prosperity, it is reported that they will pay three kinds of dividends, ordinary dividends of 10 per cent., special dividends, and special war dividends. All these dividends put together will amount to at least 20 per cent. per annum. However, the Board of Directors state that they must consider the position of the company as a subsidized concern, contract to expire at the end of January next year. If the company pays too large dividends, the feeling will arise that there is no necessity to subsidise the company making such profits. It is certain that there will be a move to cut down the subsidy.

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**Osaka Shosen Kaisha Prospers.**—The business prospects of the Osaka Shosen Kaisha are reported to be excellent with net profits of 6,000,000 yen for the coming six months in sight. Owing to the large profits, some of the shareholders of the company want larger dividends declared at the coming general meeting of the shareholders. Following the example of the other steamship companies, the Osaka Shosen Kaisha will announce a dividend of fifteen per cent.

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**Japanese Ships on Charter.**—According to the latest official statistics 37 Japanese steamers,with an aggregate tonnage of 117,633, were under foreign charter at the end of March. These figures, compared with 42 steamers with a total tonnage of 134,517 at the end of February, show a decrease of five steamers and 16,684 tons. Japanese steamers with an approximate tonnage of 180,000 were under charter by foreign firms at the end of December.

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**Japan May End Subsidies.**—The opinion is gaining among the Cabinet members that state subsidies to the shipping companies engaged in ocean navigation, such as the Nippon Yusen Kaisha, the Osaka Shosen Kaisha and the Toyo Kisen Kaisha, should be discontinued, reports the Tokyo Tsushin.

The reason is that the subsidy is about 8,000,000 yen a year, and a heavy burden to the Government, in its straitened financial circumstances, while the shipping companies, because of the war, are very prosperous. Members of the pro-government parties have commenced investigations into this question.

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**Huge Profits of Japan's Shipping.**—The trips made by an N. Y. K. vessel now easily make profits equal to the vessel. The Toyooka Maru, which left Yokohama for London October 15, arrived at Nagasaki Thursday after making a long voyage, calling at London, New York and Vladivostok via the Cape of Good Hope. It was reported that the freight profits of the vessel amounted to 900,000 yen and the receipts of two trips made by the vessel will repay the cost of building.

Prior to the outbreak of the war the total tonnage of Japanese vessels trading to foreign countries did not exceed 500,000, according to the Asahi, and the amount of specie earned abroad by these ships was in the neighbourhood of Y.35,000,000. Since the outbreak of hostilities, however, the tonnage of Japanese ships trading abroad has greatly increased, and at present is estimated at something like 1,000,000 tons, including the vessels chartered by foreigners, and the amount of money earned by them is now more than four times as much as before the war. It is not possible to arrive at an accurate estimate of the amount of money earned by Japanese vessels trading in foreign countries in the shape of freight and charterage, but the following monthly average may be regarded as approximately correct:—Regular lines (300,000 tons) Y.1,500,000; Extra ships and tramp steamers (550,000 tons), 6,600,000; and Ships chartered by foreigners (150,000 tons), 3,370,000, a total of Y.11,470,000. This amount of specie it is estimated is attracted to Japan every month by the working of Japanese ships, and as there are no fears of a decline in freights and charterage so long as the war lasts, the import of specie from this source during the present year will not be less than Y.100,000,000, and possibly considerably more.

Mr. S. Asano, president of the T.K.K., said a few weeks ago, that the prospects for the shipping business for the coming year are bright, and that the amount of foreign money earned by shipping interests of Japan will exceed 120,000,000 yen before the end of this year. More optimistic experts believe that it will exceed 150,000,000 yen. For years Japan's aspiration in the matter of foreign trade was that the balance of trade might turn in her favor. This was realized last year, the balance in her favor being 170,000,000 yen. The amount of foreign money to be realized by the shipping business is somewhat inferior to the trade balance of last year, but it will be a huge factor in the prosperity of the country.

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**Koreans Plan New Bridge.**—The semi-official Seoul Press reports that the Government General is planning to construct an iron bridge across the Han river on the highway between Seoul and Chemulpo, a little above the railway bridge at Ryuzan. The cost is estimated at ¥350,000. It will be 2,000 feet in length and 27 feet in width and it is expected that work will be commenced in the summer of 1916 to complete the bridge in 1917. Correspondence should be addressed to the Director of the Bureau of Public Works, Government General of Chosen, Seoul, Chosen.

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## FINANCE

**Salt Tax Decrease.**—The loss sustained by the Chinese Salt Administration in consequence of the independence of some of the Southern provinces is estimated by the Chinese Press at one and a half million dollars. Of this sum, Yunnan and Kueichow together are responsible for a decrease of $450,000; Kuangtung for $750,000 and Chekiang, $350,000.

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**Japanese Specie Now 540 Millions.**—The amount of Japanese specie recently has increased is now 540,000,000 yen, of which 180,000,000 yen is at home, 90,600,000 yen in the United States and the remaining 270,000,000 yen in Europe. The growth of trade and the sale of war munitions are causes of this remarkable increase. Compared with the figures at the end of March, the amount of specie in Europe decreased by 17,000,000 yen, while that in the United States increased by about 50,000,000 yen. This extraordinary increase in the United States was due to the recent heavy purchases by the Yokohama Specie Bank of exchanges outstanding between the United States and Japan.

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**T. T. K. Redeems Debentures.**—The Toyo Kisen Kaisha has decided to repay the third issue of the company's debentures at 1,000,000 yen in cash from May 20, according to the result of the drawing carried out a few days before. This is the fourth refundment the company has undertaken this year, and when the present redemption is carried out the outstanding debt will be reduced to 2,800,000 yen. This latter sum will also be repaid during the present year when the insurance claims on the Chiyo Maru are met by the insurance offices.

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**Standing of Banks in Japan.**—According to an investigation by the Tokyo Clearing House, the records of the associated banks in Tokyo, and other banks represented by them, onMay 20, show paid-up capital of 157,000,000 yen, an increase of 25,000,000 yen compared with last year. The reserves of these banks aggregate 64,000,000 yen, an increase of 9,400,000 yen; the deposits 725,000,000 yen, an increase of 196,000,000 yen. Loans reached 217,000,000 yen, an increase of 56,000,000 yen; the holdings of securities increased from 161,000,000 yen to 217,000,000 yen. The increase in securities was, however, partly due to their advance in price. The ready cash reached 64,000,000 yen, an increase of 10,000,000 yen.

The reports of the eleven clearing houses of Tokyo, Osaka, Kobe, Kyoto, Yokohama, Nagoya, Hiroshima, Kwarmon (Moji), Kanazawa, Hakodate and Otaru also show general increases. The figures of the associated banks to these clearing houses are as follows:

| | April 1916 Yen | Increase over April 1915 Yen |
|---|---|---|
| Paid-up capital... | 259,000,000 | 31,000,000 |
| Reserves........... | 113,000,000 | 11,800,000 |
| Deposits ........... | 1,492,000,000 | 401,000,000 |
| Loans.................. | 1,577,000,000 | 497,000,000 |
| Holding of securities ............... | 351,000,000 | 98,000,000 |
| Ready cash........ | 118,000,000 | 20,000,000 |

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**Philippine Bank Earnings.**—The Philippine National Bank, created by an act of the legislature during the last session of that body, and officially declared open for business on May 2, by the middle of May showed net earnings from operations in all branches, including the agricultural bank operations, of which the new institutien has taken charge, of nearly P40,000. At the last regular weekly meeting of the board of directors of the bank the books of the institution were formally opened and President Willis submitted to the directors a statement of operations, liabilities and assets to date, this showing the net earnings up to the present time to be just a little less than P40,000. A statement of stock subscriptions thus far received, including the payments made by the insular government on a portion of its holding under the provisions of the bank's organic act also was made.

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**Philippine Revenue Collections.**—The statement of collections during April as issued by the Bureau of Customs of the Philippine islands, shows a falling off of P231,756.23 as compared with the corresponding period of 1915. With the exception of the port of Cebu, all ports of entry registered a decrease in collections, Manila being in the lead with a total falling off of P178,700.12. In the port of Manila, customs collections last month amounted to P559,418.42, while for the corresponding month last year, these totaled P738,118.54. During April of last year, collections in the port of Iloilo were P151,268.78, while last month only P106,162.13 was collected, showing a decrease in the amount of P45,106.65. To offset this reduction the port of Cebu showed P8,867.36 increase, the collections for April 1916, in this port amounted to P91,456.66. Zamboanga's collectians last month amounted ta P7,059.30 as compared with P15,301.80 last year, while in Jolo only P14,655.43 were collected this year as compared with P23,229.75 of April, 1915.

Although Customs revenuc decreased the Internal recoenve for the first quarter of 1916 has increased P1,244,033.94 over the corresponding period of 1915.

Considerable increases are noted, in distilled domestic spirits, which excelled by P278,954.-84, on domestic cigarettes P257,377.54; kerosene and petroleum, P187,909.16; cinematograph ffims, P38,967.65; and playing cards, P35,116.43. On the latter two items no tax was collected during the previous year. The taxes paid by merchants, manufacturers, and common carriers, exceed by P671,900.53 the collections for the corresponding period last year.

**Japan's Domestic Loan.**—Subscriptions for Japan's new domestic loan of 40,090,000 yen which was closed April 25 are reported to have reached 43,224,650 yen inclusive of the amounts takken by the syndicate banks. Of this amount, 1,035,650 yen was subscribed at premiums ranging between 10 sen and 1,00 yen per 100 yen. Osaka contributed about 10,000,-000 yen, but the amount taken in Kyoto and Nagoya was small. The largest part of the loan was taken in Tokyo and the vicinity. According to an Osaka dispatch, the subscription received by the Osaka branch of the Bank of Japan up to April 24 was about 10,000,000 yen.

**Russian Bonds in Japan.**—According to Japanese press reports an agreement was reached on May 9, between the authorities of Japan and Russia to the effect that Russian Exchequer Bonds be issued to pay a portion of the cost of munitions that Russia bought from Japan. The issue will be 30,000,000 yen to 50,000,000 yen, at 6 per cent per annum, to be redeemed in six months or one year. The rate of commission has been fixed at one per cent., although the bankers at first requested 1.5 per cent. The Japanese bankers express the hope that the bonds will never be renewed, and that in case the Russian government finds it difficult to redeem the bonds, the entire issue will be purchased in England, or the British government will assure the Japanese capitalists of the payment of the issue.

On the same subject, the Asahi reports a recent tendency for the Russian war orders to be placed through British firms. It seems that the Russians are anxious to obtain the financial help of British firms in buying war goods from Japan in view of the inability of the Japanese to extend long credit. The Japanese merchants or manufacturers are desirous of the direct trade because of the larger margin of profit, but then they must wait long for the payment. The intervening of the British firms in the business would certainly deprive the Japanese of a greater part of the profit. The general opinion of the Japanese merchants is, that the business should be done as much as possible through British firms.

**Philippine Surplus Increases.**—The liquid surplus of the Philippine government that will be carried over at the close of the present fiscal year as appropriated or available for appropriation, will be P301,125.15 greater than was the case on December 31, 1915, according to Insular Auditor C. H. French in a recent estimate of income and expenditures. The Auditor's budget estimate shows that whereas P24,350,667,67 is available for current expenses of bureaus and offices during 1916, the estimated expenditures under this head during the same period amount to only P17,760,311.11 net, this amount representing gross expense less income accruing through operations not generally classed as commercial and industrial activities. Nearly a million will also be saved from public works appropriations. In fixed charges nearly another million is saved in interest and exchange on Philippine Railway company bonds, and interest on Manila Railroad company bonds. Both companies are expected to meet the greater part of this expense without aid from the insular treasury.

The auditor's estimate shows that the liquid surplus carried forward to 1916 amounted to P9,145,191.84, of which P5,232,816.05 was unappropriated and P3,912,376.79, appropriated. To this amount he adds the estimated income of the insular government for the present fiseal year, as follows: customs revenue, P12,500.000; internal revenue, P14,-700,000, United States internal revenue, P450,000; franchise taxes, P500,000; income taxes, P450,000; miscellaneous revenue, P75,000.

A further addition is the income from commerical and industrial activities of various departments of the government, classified as follows; bureau of supply, division of cold storage, P125,000; bureau of prisons industrial division, P25,000; bureau of printing P60,000; marine railway and repair shops, P100,000; friar lands loan fund, P5,000; sales agency fund, P35,000; Los Banos quarry, P1,000; American colonies, P10,000; Mindanao and Sulu Filipino colonies, P53,000; Filipino colonies Cagayan, P10,000, Benguet road toll collections, P25,000; friar lands estates, a new account, P1,000,000, of which P900,000 is estimated as profit; gold standard fund earnings, P850,000; and agricultural bank, now transferred to Philippine National Bank, P100,000.

# RIVERS AND HARBOURS

**Dairen Harbour Works.**—The South Manchuria Railway Co.'s Harbour Works Office, Dairen, recently resumed its harbour improvement work. The chief items of this year's programme are the construction of Wharf No. 3, the Northwestern Breakwater, the reclamation work at Jijiko, etc. The estimates amount to Y1,793,872. The last-mentioned reclamation work is expected to be finished during the current fiscal year; Wharf No. 3 will be completed during the fiscal year of 1919. The S. M. R. Co. has plans to construct Wharf No. 4 on lines already drawn up. The Wharf in project is to be constructed at the west of Wharf No. 3 in the recess of the Bay where junks are now anchoring at the east of the Kawasaki Dock. The shorefront will be reclaimed for warehouses. The Wharf will be 400 ft. wide and 2,000 ft. long. The construction work will follow upon the completion of Wharf No. 3.

**Transfer Tsingtau Dock to Japan.**—The floating dock of 16,000 tons at Tsingtau, captured as a prize of war, is to be transferred to the naval port of Sasebo under plans announced by the Japanese Navy Department.

**Port Swettenham's Harbour.**—In commenting on the harbour facilities which Port Swettenham, British North Borneo, now possesses, the Australian Shipping Index says that they include a steel compound screw pile wharf, 1,200ft. long and 50ft. wide, giving about 30 ft. of water for vessels lying alongside at low tide. Connection is made to the shore by five gangways at right angles to the wharf, at a distance of about 200 ft. apart. The wharf and gangways are laid with a double track, the respective track being connected at the head of each gangway by turn-table. The whole of the transport equipment, including turn-table, cranes, capstans, etc., will be electrically driven, the power being obtained from a power station shortly to be constructed at an estimated cost of $120,000 (U. S. currency). Six godowns have been built on the shore opposite the wharf with 63,840 sq. ft. floor space. These are of steel frame and corrugated iron sheet, constructed on reinforced concrete pile foundations, the length of piles being 40 ft.

**Singapore Harbour Report.**—The report of the Singapore Harbour board for the six months ended December 31 has been issued. The credit balance of income and expenditure for the half-year is $1,053,529, nearly all paid in interest due or owing to Government on loan funds. $345,012 is carried forward to next account. The net revenue shows an increase of $95,905 over the previous half-year, and an increase of $210,146 over that of the average of the preceding twenty half-years. The wharf account shows that 1,182 vessels used the wharves, exactly the same number as the previous half-year, but about 160 less than in half-years immediately prior to the commencement of war. The tonnage was 2,122,719. Cargo dealt with was 1,160,559 tons against 1,184,530, better than the corresponding half-year of 1914 by 80,000 tons. Some 160 vessels were docked for repairs, with a tonnage of 253,424, the largest being the *Laurentic*, 14,892 tons and 550ft. long. The King's Dock has dealt with 960,804 tons. Cargo and coal handled by the lighterage department was 90,886 tons against 85,707. It sustained a loss in working of $7,762 but $11,154 was expended in repairs to lighters and launches.

On the reconstruction of wharves, the report says that the Contractors, Messrs. Topham, Jones and Railton, Ltd., have made good progress during the half-year. The average number of men employed during the half-year by the Contractors, Messrs. Topham Jones and Railton, Ltd., was fifty-two Europeans and 1,615 Asiatics. A considerable length of the main wharf will shortly be completed but the godown accommodation is seriously delayed owing to most of the godowns in construction in Great Britain having been commandeered. The Board is constructing godowns out of what material is suitable from the old godowns now being pulled down. A length of 2,600ft. of wharf is out of use being in the hands of the Contractors.

In comparison with half-year ending June 30, 1915, the gross earnings of the wharf department show a decrease of $16,288.00, the net earnings a decrease of $13,095.00 and the tonnage a decrease of 23,971 tons. The docks and workshops department shows an increased profit of $178,017.21, this owing to the greater volume of work undertaken.

The expenditure on repairs and renewals was $198,404.76; an increase of $56,907.56 on the preceding half-year.

Of the total interest paid or due to Government, viz., $978,447.38 for the half-year under review, $595,679.08 was in respect of interest account the capital cost of the undertaking, and debentures and loans at call, redeemed; the balance of $382,768.30 being in respect of interest on progress cost of new works. The total of $978,447.38 being an increase of $21,488.65 over that of the previous half-year.

**Discusses Dredgers.**—Mr. F. J. Blom, C.E., read a very interesting paper to members of the Engineering Society of China on May 6, on the subject of Dredgers and Dredging. Mr. Blom, who was technical manager of the Netherlands Harbour Works Co. in Shanghai for three years, may be considered to be an expert on this subject. During his recent visit to Holland and the dredger building yards, for which Holland is famous, Mr. Blom studied the improvements in this line. After analysing the sort of work to be executed by dredgers the different forms of dredgers necessary for each sort of soil were described. The speaker dealt also with grab dredgers, dipper-dredgers, bucket-dredgers, suction-dredgers, and shoving suction-dredgers. Of the last named, the newest designs for the La Plata River in the Argentine were described, as pushing the mud into the holds through a short and wide mouth-piece when slowly steaming ahead, thus giving an hourly output never reached before by suction-dredgers. This type was specially mentioned in connection with bar dredging for places like Shanghai, Tientsin and Newchwang, as it will prob-

ably be necessary to use this type of dredger at these places in the near future when trade asks for larger accommodation and harbour facilities than are available at present.

For the improvement of the canals and small rivers in China, several small size bucket, suction, and clay-cutter-dredgers were mentioned. After many years of practice and careful consideration, only very few building works succeeded in turning out useful types, but these are most interesting in construction. Dealing with the needs of China, Mr. Blom gave it as his opinion that Chinese yards, now trying to construct dredgers, are on the wrong track in not making use of the vast experience gathered by foreign countries.

## MINING

**Japanese Survey Hunan Mines.**—According to a report from Chenchow, Hunan, mining is still booming in many places. The antimony mines are being worked for all they are worth. In a recent country trip many specimens of ore were seen. Japanese engineers are making extended surveys of the mines in this section.

**Mineral Wealth of Inner Mongolia.**—According to the results of investigation by a European prospector, published in the Japanese Press, Inner Mongolia contains 353 mines, comprising 89 gold, 23 siver, 63 copper and iron, and 127 coal mines, in addition to 51 more containing both gold and silver seams.

**Many Want Chinlingchen Iron Mine.**—The intrinsic value of the iron ore of Chinlingchsn Mine on the Shantung Railway, that is, the percentage of iron contained therein, has been a theme of varying calculation. Redently 200 tons of Chinlingchen ore were sent to the Steel Works at Muroran where a comparative smelting test with Tayeh (China) and Abuta (Japan) ores was made. The test showed that, whilst Chinlingchen ore is 3 or 4 per cent. less than Tayeh ore in the quantity of iron, it contains calcareous substance whicn makes it self fluxing and facilitates the smelting process, also effecting a saving in the consumption coke. The Germans, before the outbreak of the Siege War about Kiaochou planned to found a steel works at Tsangkou capable of putting out 100,000 tons per annum.

When the results of the practical test were made known, the Mitsuis are said to have applied for the privilege of exclusive operation. The Okuras, too, are reported to have proposed to elect themselves the sole buyer of the output. The Kuhara Mining Co., Osaka, also is prepared to establish a steel works at Chinlingchen or Tsangkou. The Suzukis of Koke, are said to have nurtured a similar plan. The Japanese War Office is said to be rather inclined to place the mine under private tapping, but this new mining and smelting enterprise is sure to be contested strenuously by a number of leading capitalists of Japan.

A later report states that the War Office plan of operation of the mine calls for an outlay of Y300,000 out of the extraordinary military list. This has the sanction of the Finance Office, Tokyo, and has bean passed at a Cabinet council, at which an early commencement of the operation was urged as a matter of importance.

**Export of Mica from Shantung.**—Good seams of mica, which forms an article of importance amongst electricity materials, occurs about Weihsien on the Shantung Railway. Under the German regime it was exported, but since the Siege of Tsingtau the export business has been practically suspended. Of late some Japanese have gathered a small supply of this article and shipped it. Experts say it is likely to become an export of some consequence.

**Osaka Copper Co.'s Share Issue.**—The Osaka Electroytic Copper Company has issued a prospectus announcing the issue of new shares representing 1,000,000 yen of which 40,000 shares are to be assigned to the company's employees, whilst remaining 9,500 shares are to be offered for public subscription. The conditions of the issue are very favourable considering the present standing of the company, which ensures the distribution of minimum dividends of 15 per cent. per annum even after allowing for the increase in capital.

**New Coal Seam in Japan**—A vast coal seam has lately been struck about Kurume in a coal field that comprises some 300,000,000 *tsubo*. Many applications for operating the find have been field with the Communications Department, Tokyo. An expert remarks that the new find promises to be a richer coal asset than the four counties of Chikuzen Province put together. The quality of the coal has not been stated as yet.

**Alluvial Gold Deposits at Laotiehshan.**—Mr. R. Horiuchi, Director of the Lungkou Bank, reports the existence of alluvial gold desposits in good quantity at the foot of Laotiehshan, Port Arthur. Miners have been engaged in gathering them for months past on a small scale.

**Ressia Wants Japanese Copper.**—Russia is making repeated inquiries in Japan for electrolytic copper. It is reported that the Kuhara Mining Company and the Mitsui Mining Company have received inquiries for a supply of 30,000 tons each of electrolytic copper, and the Mitsubishi Company has also received an order for 40,000 tons. But none of these has yet resulted in a contract because nothing definite has been stated as to the method of payment. In view of the desirability of opening such a big trade in this metal with Russia, the Mitsubishi Company is about to send a representative to Petrograd on a three months' trip in order to arrive at definite and permanent business arrangement with the prospective buyers.

**New Japanese Smelter.**—Okura and Company have selected a sea-coast town in Saekgun, Hiroshima prefecture, as the site for an iron smelting works The company has long been contemplating the establishment of an iron smelting works at home to make pig iron of ores produced at the Penchihu Mine. Long before the site for the proposed works was selected, furnaces and factory equipment were ordered from Sweden, for the company is to adopt the Swedish method of smelting. By the earlp Autumn nearly all the equipment will arrive. The beginning of next year may therefore see the new smelting furnaces in full blast turning out nearly 20,000 tons of charcoal smelted pig iron annually. If this plan be carried out in its entirety all the requirements of the Japanese Army in this country can be met out of the production of the new works and check the import of Swedish iron.

**Japanese Refining Zinc**—A noteworthy feature in Japan's mining industry is the recent growth of zinc refining. Prior to the war there was practically no refining of zinc. All zinc ore produced in Japan was sent to Germany, but the rise in the price of zinc has made it pay to refine it in Japan. Along with the growth of refining the demand for zinc ores has increased.

The largest zinc mine is that in Miyagi Prefecture, owned by Messrs. Takata & Co. Last year the monthly output ranged between 300 tons and 500 tons, and the total was 4,000 tons for the year. It is estimated that 2,400 tons will be mined in the first six months and 6,000 tons in the second half of this year. By January next year, the monthly output is expected to be 1,500 tons or 18,000 tons a year.

The Hiroo mine in Hokkaido owned by the same firm is expected to produce 300 tons a month, but the plants are being increased for an annual output of 5,000 tons.

The Yawata mine in Gumma Prefecture also owned by the same firm, has an ouput of 200 tons a month.

Messrs. Kuhara Mining Co. recently bought a zinc mine which produces 300 tons a month. This company, a prominent copper mining concern, has for some time been refining zinc. The Kamioka mine in Hida Province, owned by the Mitsui Mining Company, is the largest zinc mine in Japan. Its output even prior to the war was 20,000 tons year or over half of all the Japanese output. As improvements have been made it is estimated that the present production soon will be increased by about 30 per cent.

The Yasuda mine in Nagasaki prefecture, which was producing 3,000 tons a year prior to the war, is now producing 6,000 tons. Thus the output prior to the war was scarcely 40,000 tons a year, but is increasing so that next year it may be over 60,000 tons.

**Seoul Mining Co.**—The following results were obtained from the operations of the Seoul Mining Co. in April, 1916:—

| | |
|---|---|
| Tons Crushed ... ... ... | 16,432 tons |
| Value Bullion Recovered ... | Y 130,915.00 |
| Value Concentrates Recovered ... | 174,844.00 |
| Total Receipts (approx.) ... | Y 305,759.00 |
| Operating Expense (approx.) ... | 115,000.00 |
| Operating Earnings (approx.) ... | Y 190,759.00 |

**Chosen Copper Mine Sold.**—It is reported from Seoul that a contract has just been signed between the representatives of Mr. Fusanosuke Kuhara, the President of the Kuhara Mining Company, and of Mr. Colbran of the Colbran-Bostwick Development Company for the sale of a copper mine at Kapsan, which has been worked by the latter. The mine is situated on the Northern border of Hamkyongtao, and is regarded as one of the richest copper deposits in the whole peninsula. According to estimates the ores contained run well over 100,000 tons. Mr. Colbran obtained the right to work this mine in 1909 when the peninsula was still under the rule of the old royal family. Since the annexation of the peninsula, rumours repeatedly circulated in Seoul that Mr. Colbran intended disposing of his rights, but each time it has been denied. Mr. Kuhara, however, has succeeded through the mediation of some influential persons in the Chosen capital, in persuading Mr. Davidson, the agent in Seoul for Mr. Colbran, to part with the mine. The property is said to have been appraised at 3,000,000 yen, half of which is to be paid at once and the remainder in instalments.

**Gold Purchases in China.**—Gold purchased by the Bank of Chosen mostly comes from from north-west Chosen and the transaction is chiefly carried on at its branch in Pyongyang, metal collected in places south of Whanghai and Kangwon Provinces coming to the main office of the Bank in Seoul. The total amount of bullion purchased in Seoul during February was 52 Kwan, about 19,000 yen in value, and during March 60 Kwan, about 25,000 yen in value. Owing to the mild weather prevailing and the increase of gold mines being worked, a steady increase in this business is observable.

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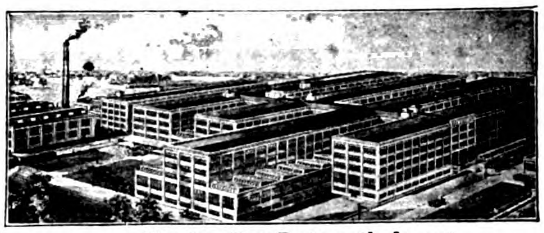

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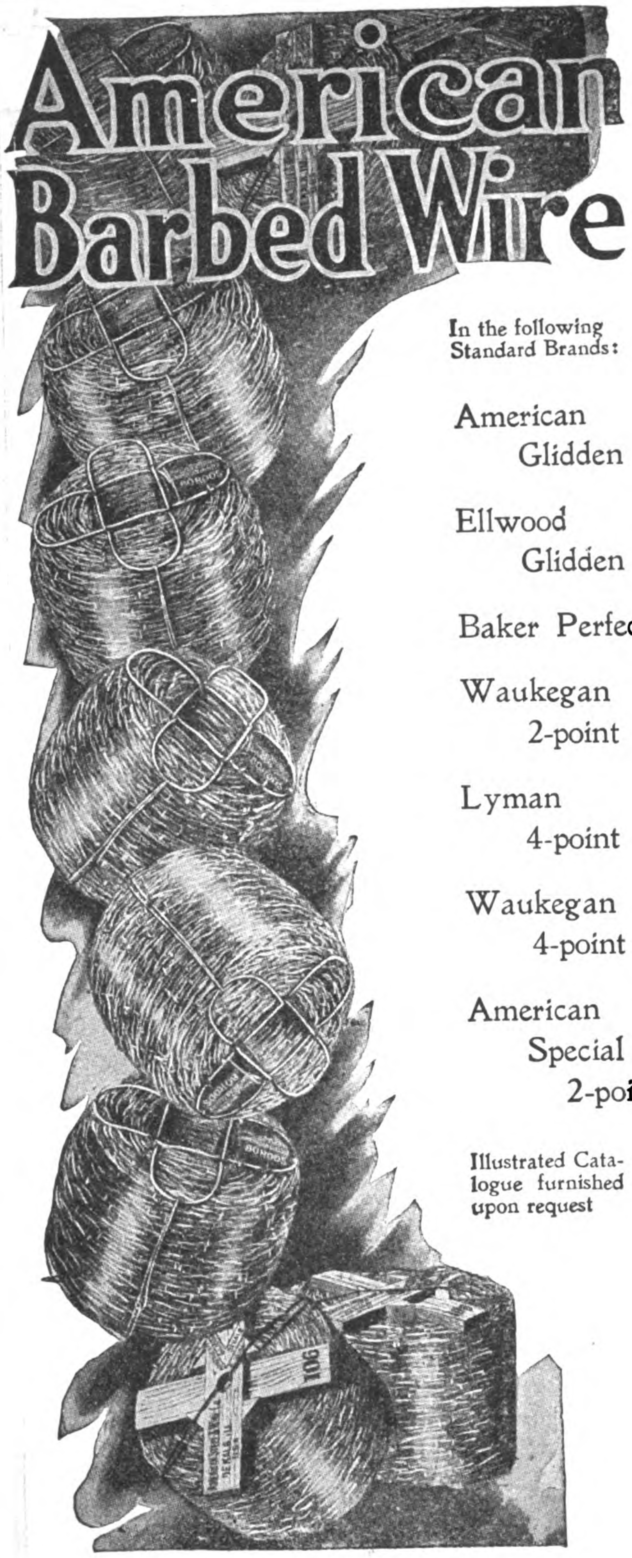


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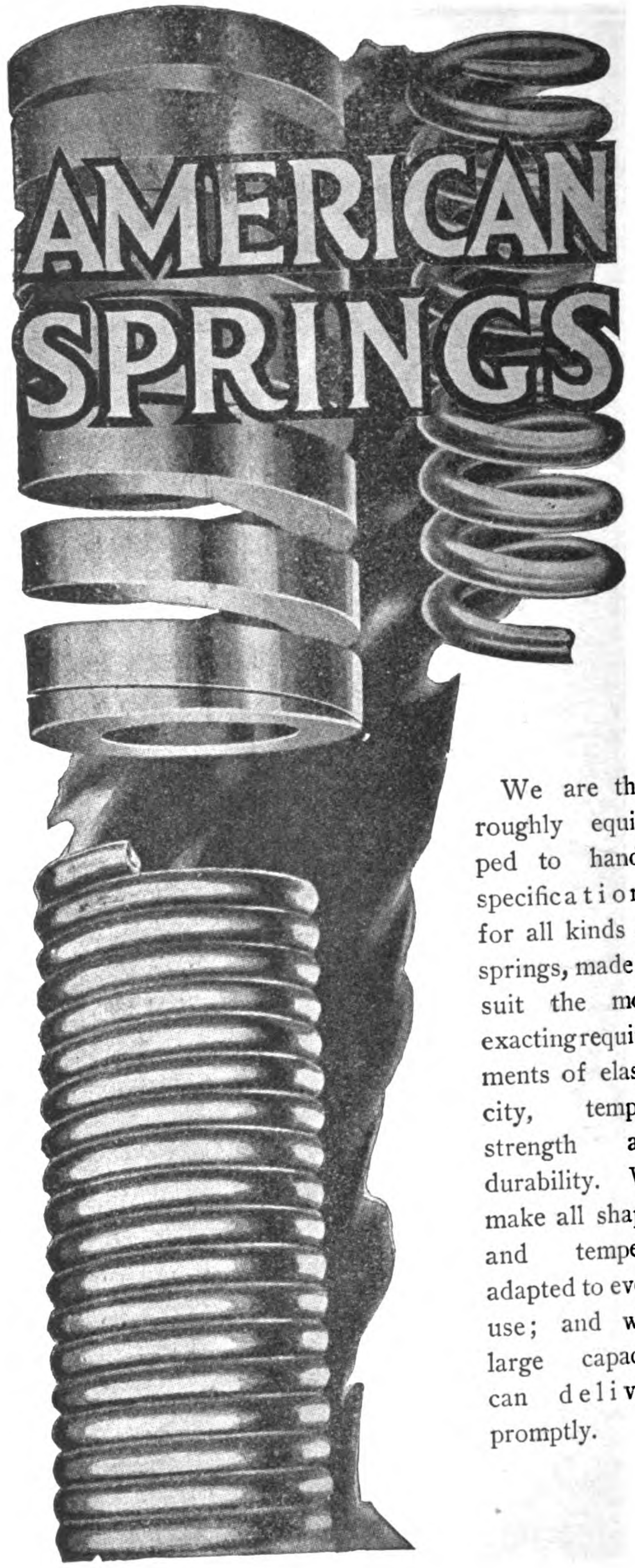


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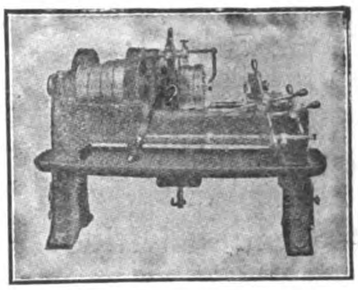

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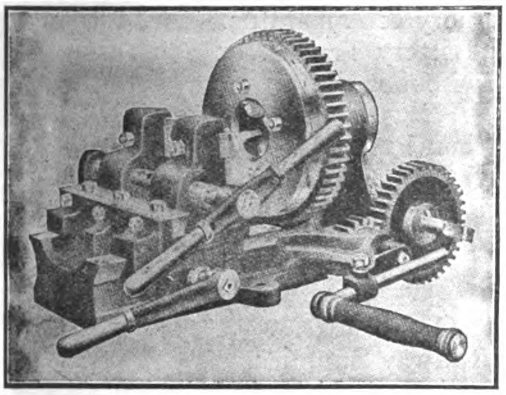

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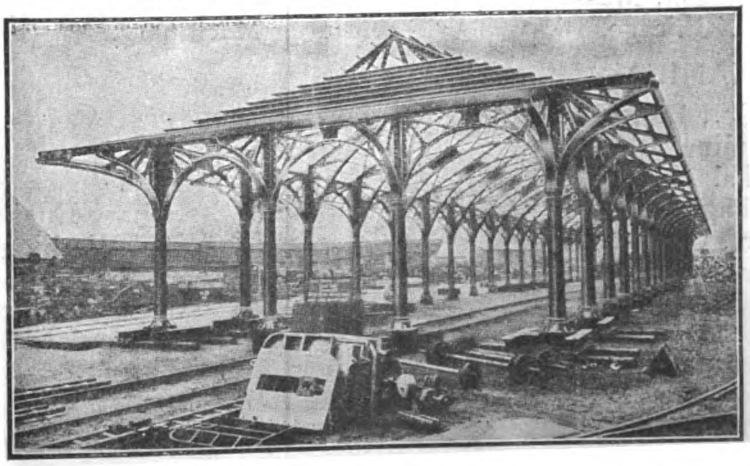

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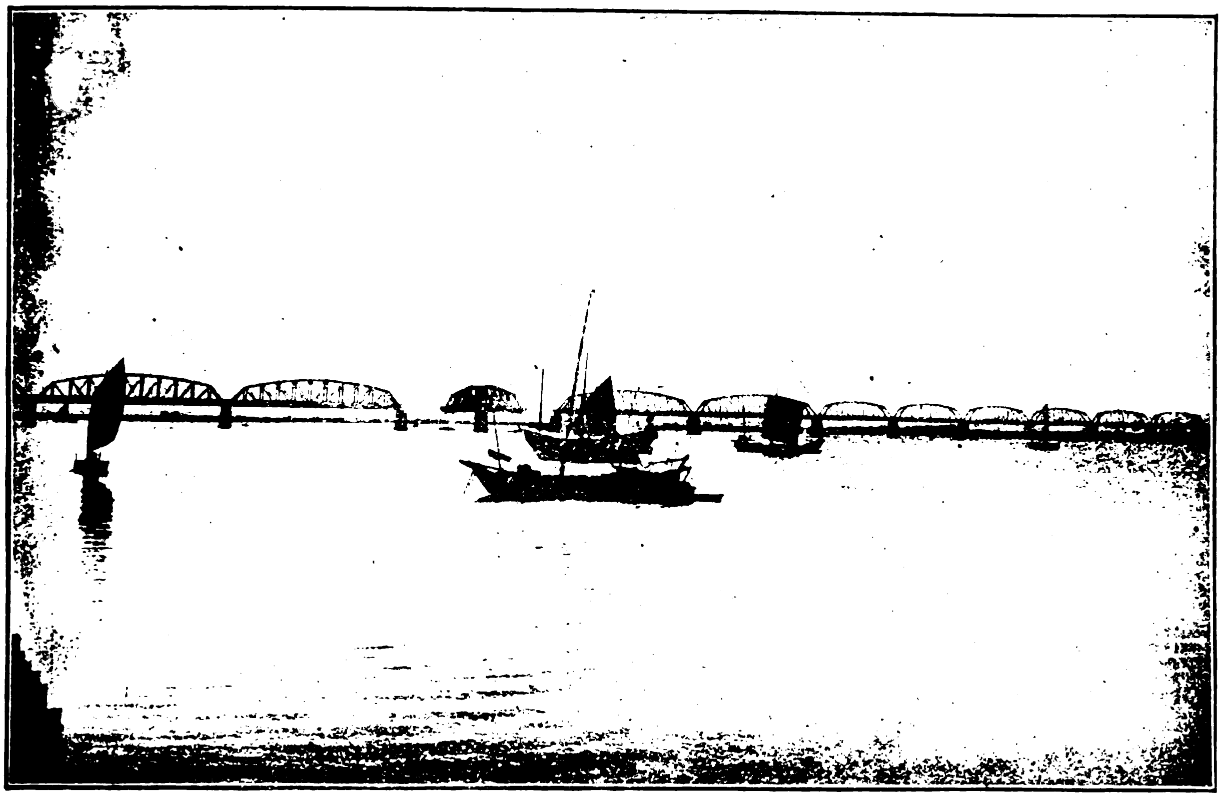

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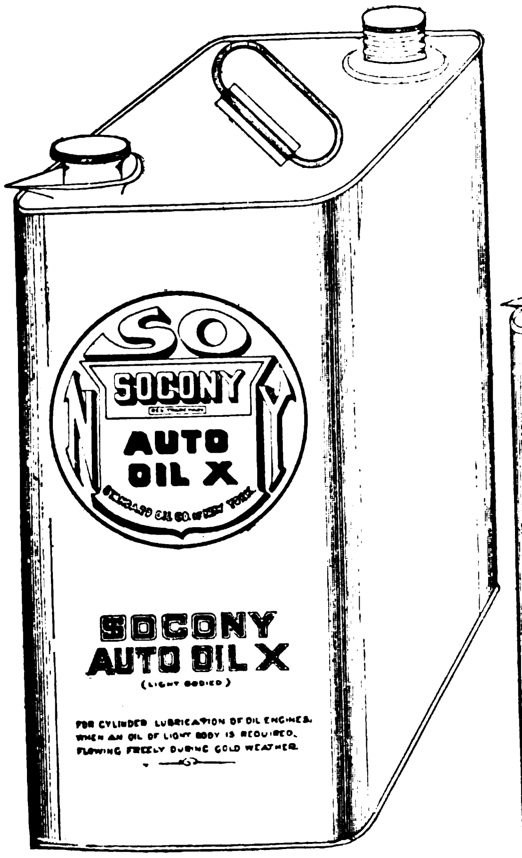


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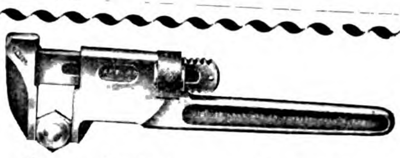

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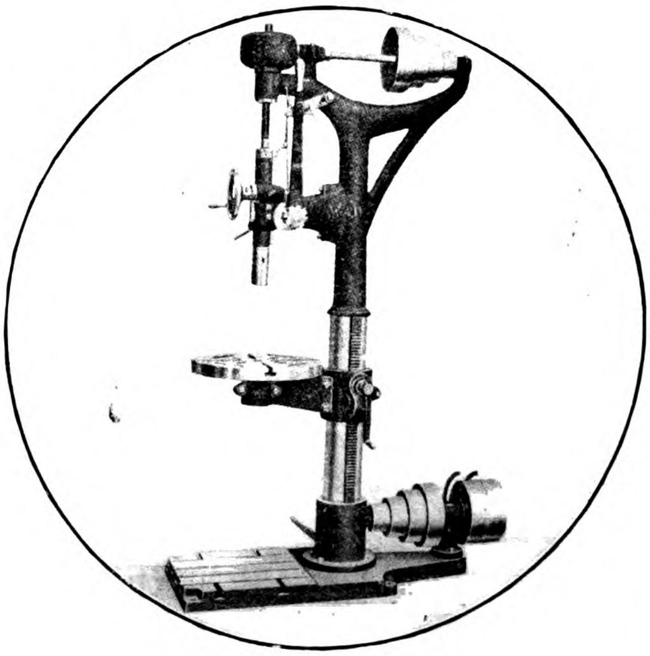

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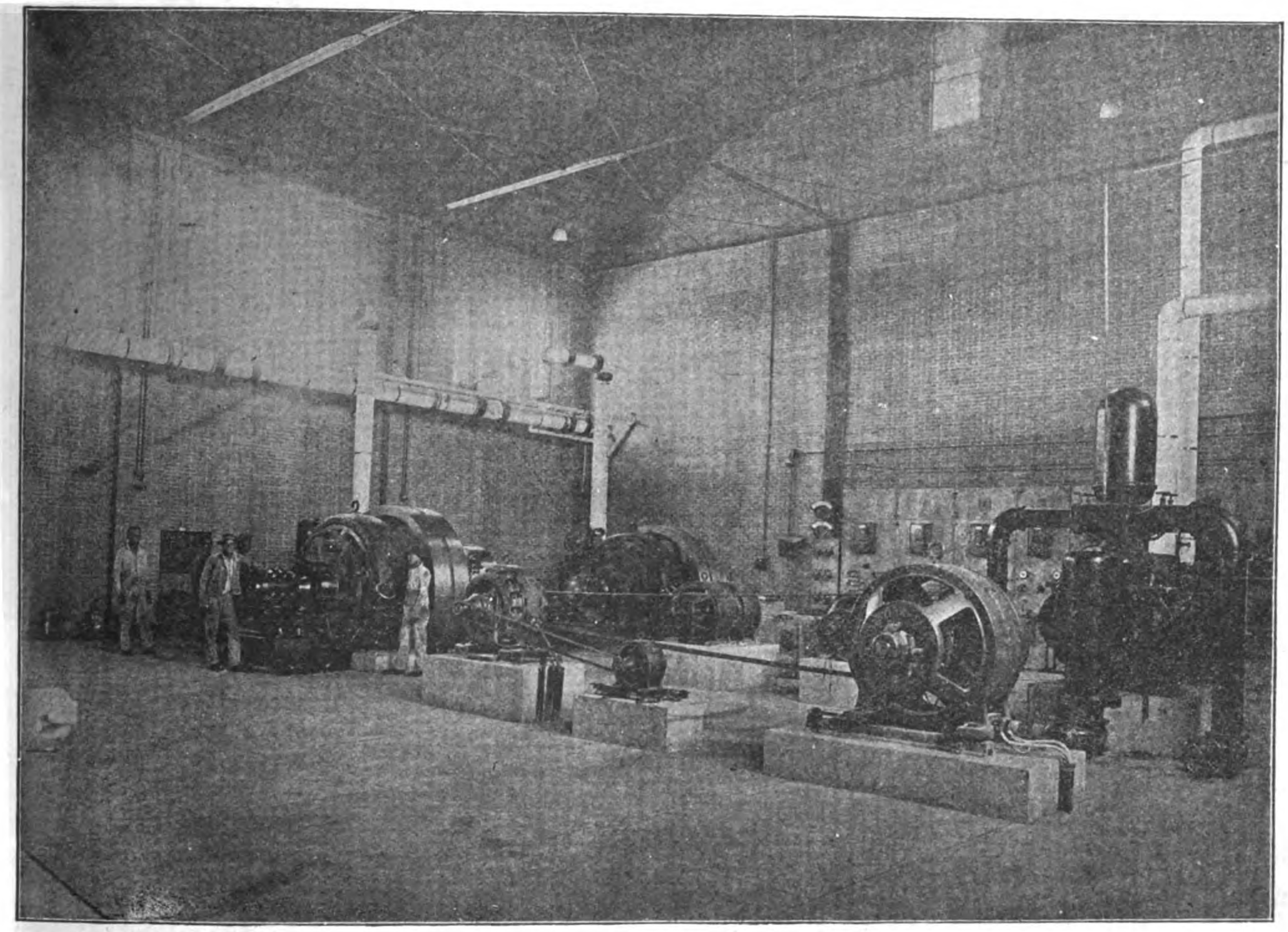

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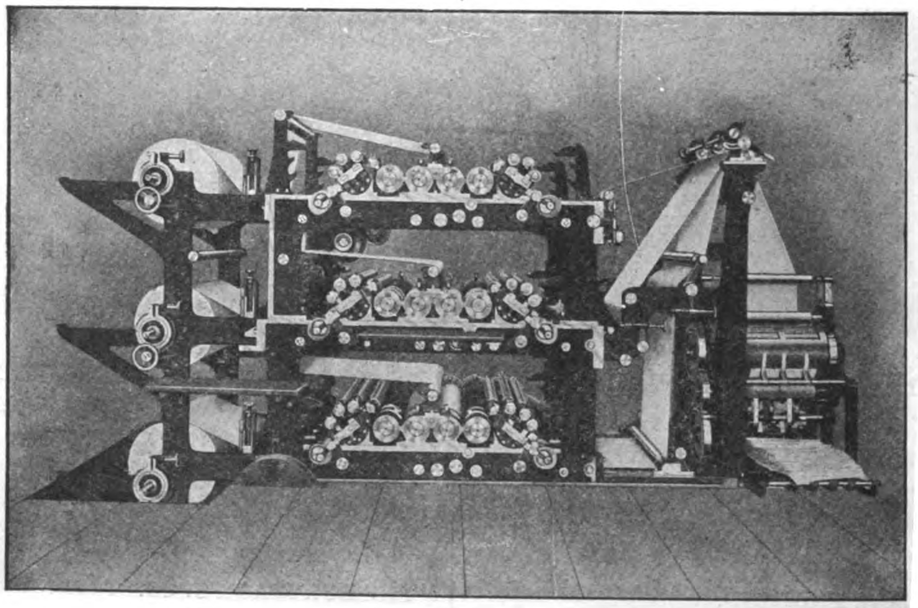

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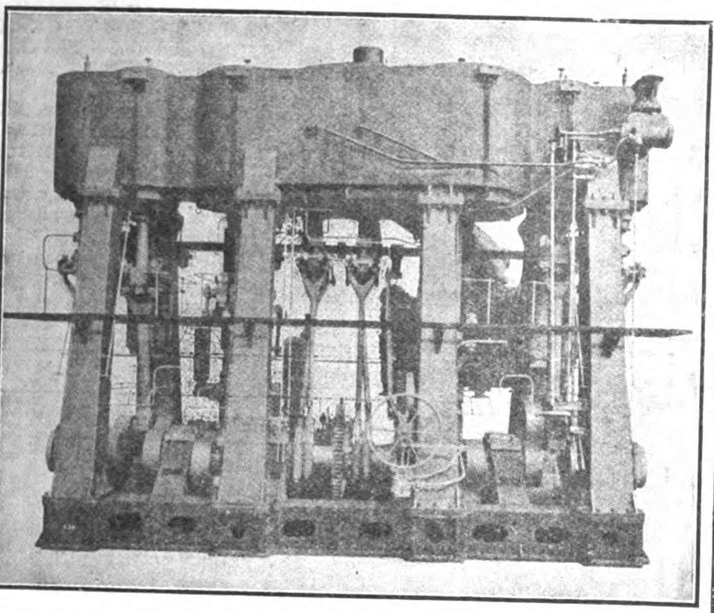

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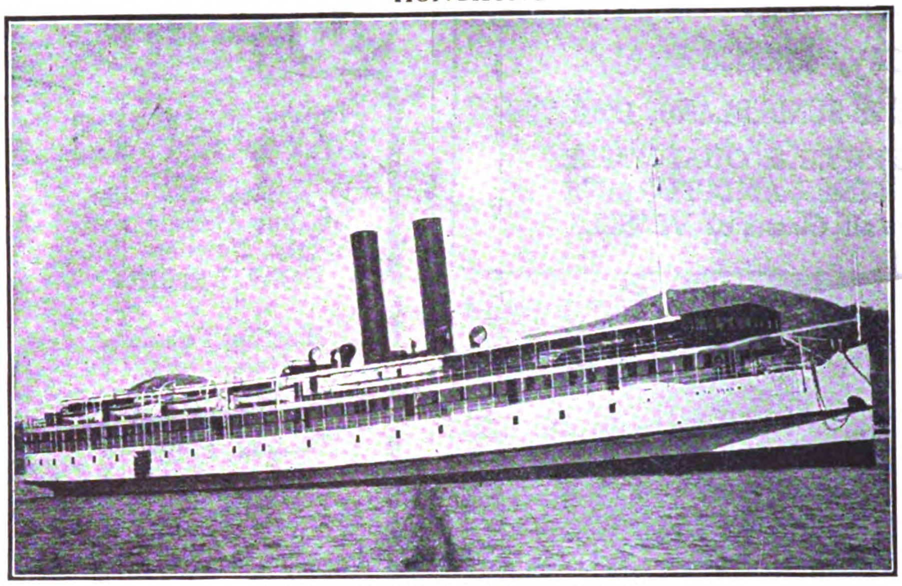

TWIN SCREW RIVER STEAMER "TAI SHAN"
Length 290 ft. Breadth 53 ft. Depth 12 ft., fitted with Compound Surface Condensing Engines for a speed of 14.7 knots.
Built and engined complete by the HONGKONG & WHAMPOA DOCK CO., LTD. for the HONGKONG, CANTON & MACAO STEAMBOAT CO. LTD.

The Dimensions of Docks and Slips are as follows :—

| Name of Dock or Slip | Length on Keel Blocks | Entrance Breadth | Depth Over Sill at Ordinary Spring Tides | Rise of Tide: Springs | Rise of Tide: Neaps |
|---|---|---|---|---|---|
| **KOWLOON** | Feet | Feet | Feet | Feet | Feet |
| No. 1 Dock, Kowloon | 700 | 86 ft. top / 70 ft. bottom | 30′ | 7′ 6″ | 3 |
| No. 2 Dock, Kowloon | 371 | 74′ | 18′ 6″ | 7′ 6″ | — |
| No. 3 Dock, Kowloon | 264 | 49′ 3″ | 14′ | 7′ 6″ | — |
| Patent Slip, No. 1, Kowloon | 240 | 60′ | 14′ | 7′ 6″ | — |
| Patent Slip, No. 2, Kowloon | 220 | 60′ | 12′ | 7′ 6″ | — |
| **TAI-KOK-TSUI** | | | | | |
| Cosmopolitan Dock | 466 | 85′ 6″ | 20′ | 7′ 6″ | — |
| **ABERDEEN** | | | | | |
| Hope Dock | 430 | 84′ | 23′ | 7′ 6″ | — |
| Lamont Dock | 333 | 64′ | 16′ | 7′ 6″ | — |

Please Address Enquiries to the Chief Manager, R. M. DYER, B. Sc., M.I.N.A., Kowloon Dock, Hongkong.

Telephone No. 13 K. Head Office, Kowloon.

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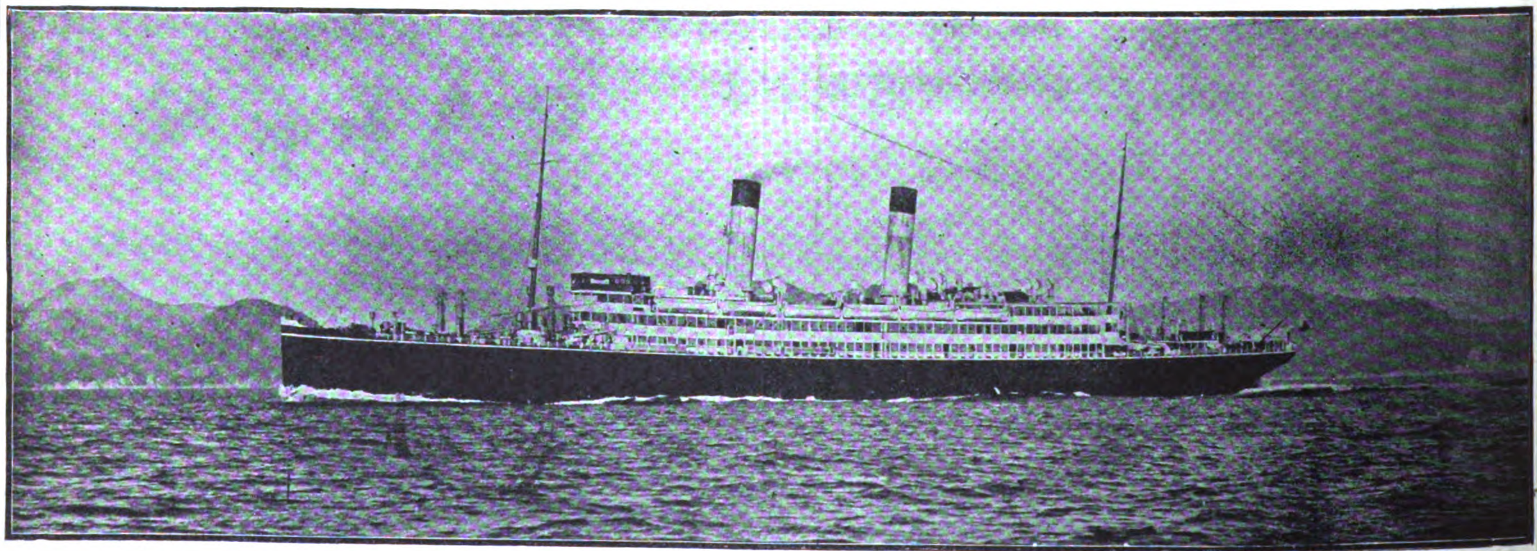

The "Tenyo Maru," built and engined by the Mitsu Bishi Dockyard & Engine Works, Nagasaki.

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| DOCK No. 1. | | |
|---|---|---|
| Extreme Length | 523 | Ft. |
| Length on Blocks | 513 | „ |
| Width of Entrance on top | 88 | „ |
| „ „ „ Bottom | 77 | „ |
| Water on Blocks at Spring Tide | 23½ | „ |

| DOCK No. 2. | | |
|---|---|---|
| Extreme Length | 371 | Ft. |
| Length on Blocks | 360 | „ |
| Width of Entrance on top | 66 | „ |
| „ „ „ Bottom | 53 | „ |
| Water on Blocks at Spring Tide | 22 | „ |

| DOCK No. 3. | | |
|---|---|---|
| Extreme Length | 722 | Ft. |
| Length on Blocks | 714 | „ |
| Width of Entrance, top | 99½ | „ |
| „ „ „ Bottom | 88½ | „ |
| Water on Blocks at Spring Tide | 34½ | „ |

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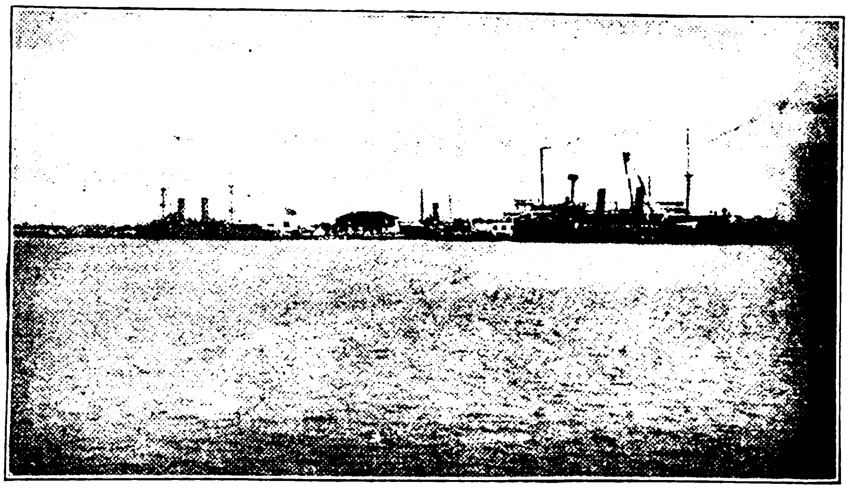

VIEW OF INTERNATIONAL DOCK
showing "M. S. Dollar" in Dock and the Chinese Cruisers "Hai Chi" and "Hai Yung" alongside Dock Co's. Wharf.

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The Dock charges are the most moderate in the Far East

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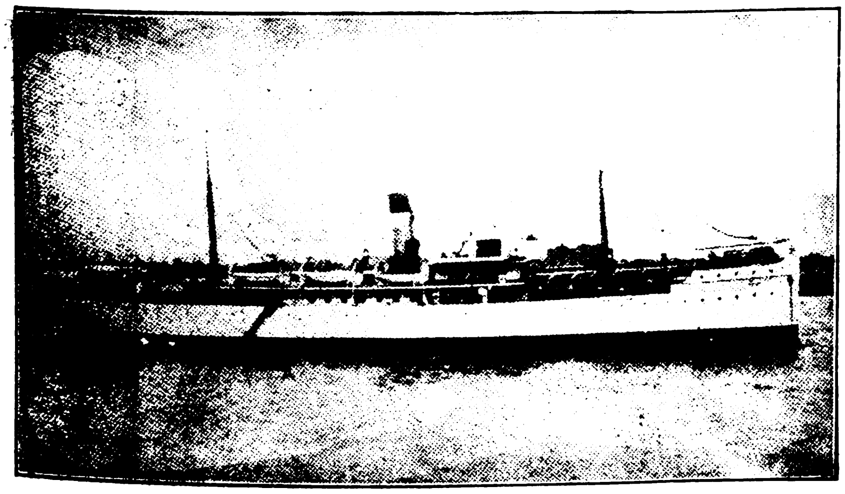

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Built for United States Government in 1912.

**PARTICULARS OF DOCKS**

Able to accommodate any vessel that can reach Shanghai

| Names | Length on Blocks | High Water | |
|---|---|---|---|
| | | Breadth of Entrance | Depth of water on Sill |
| Cosmopolitan Dock | 532 feet | 77 feet | 24 feet |
| International Dock | 528 ,, | 77 ,, | 23 ,, |
| New Dock . . . | 450 ,, | 74 ,, | 21 ,, |
| Old Dock . . . | 399 ,, | 53 ,, | 16 ,, |
| Tunkadoo Dock . | 358 ,, | 67 ,, | 18 ,, |

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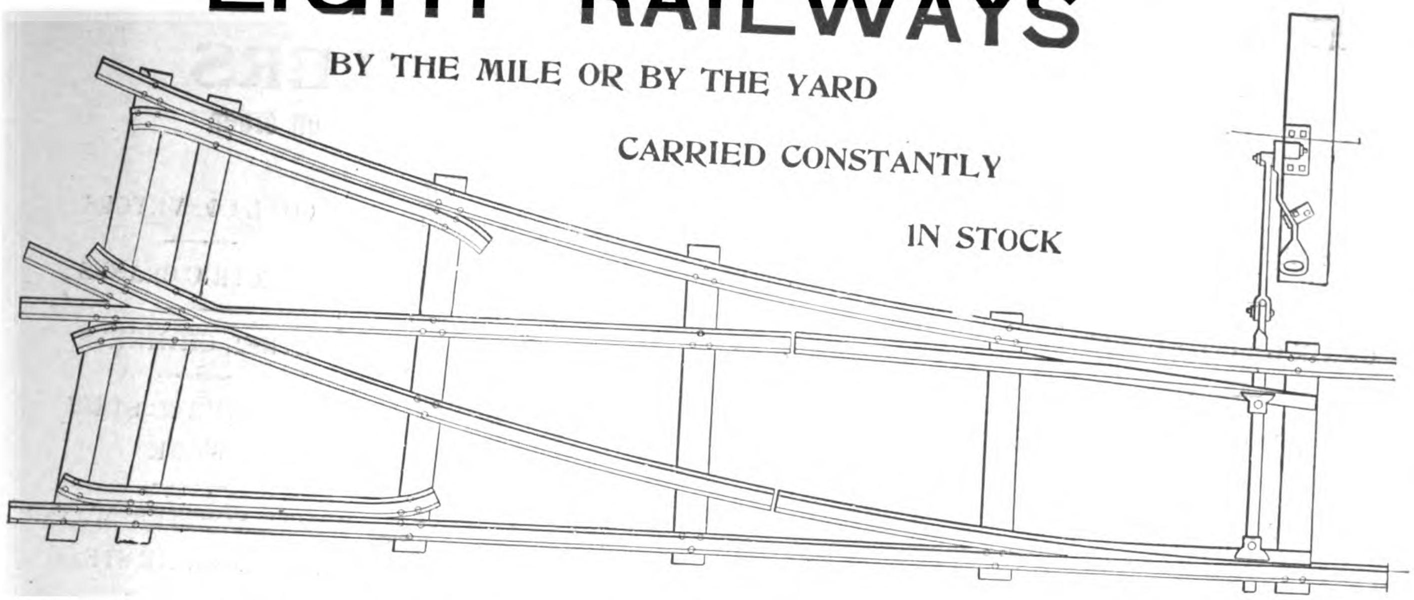

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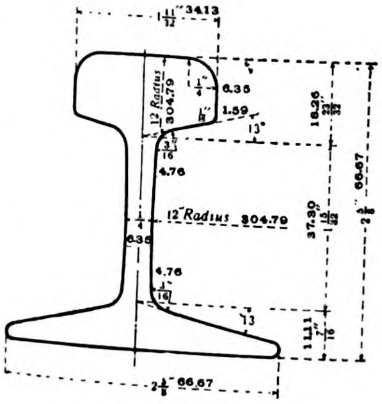

20 lbs. per yard.
9.92 kg. per meter.
31.43 gross tons per mile of single track.
19.84 tonnes per kilometer of single track.
168 ft. of single track per gross ton.
50.4 meters of single track per tonne.

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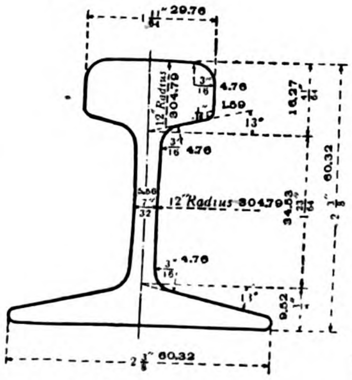
RAIL SECTION 1640



16 lbs. per yard.
7.94 kg. per meter.
25.14 gross tons of single track per mile.
15.88 tonnes per kilometer of single track.
210 ft. of single track per gross ton.
62.97 meters of single track par tonne.

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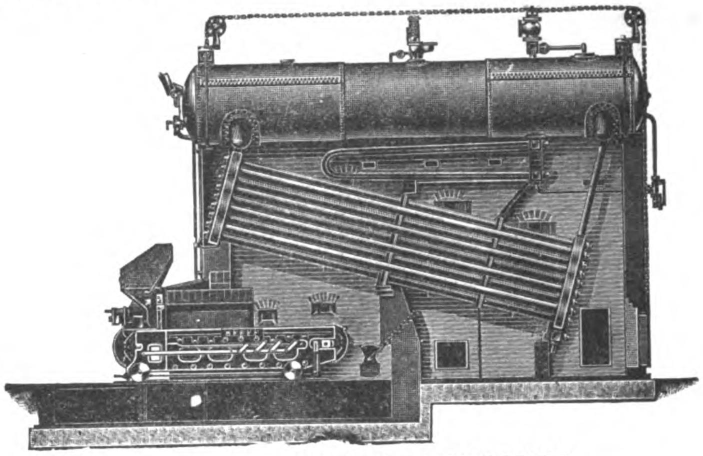

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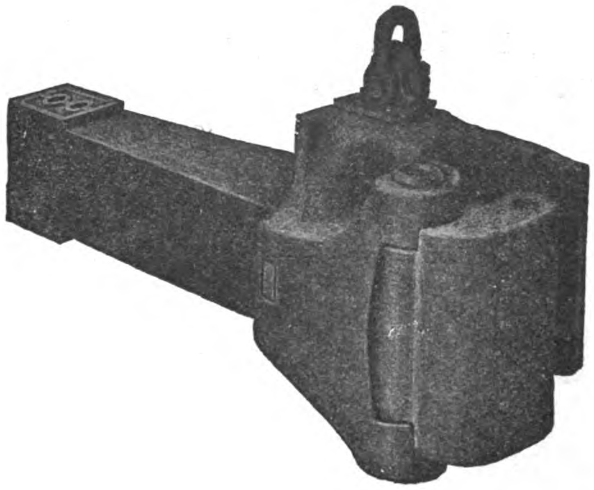

THE latest development of the Janney type of M. C. B. Coupling originally introduced and promoted by this company. This coupler has all the simplicity of the early type of the Janney coupler, and also has the up-to-date features of a "Lock-to-the-Lock," "Lock-Set," and a "Knuckle-Opener," and complies fully with all the requirements and recommendations of the M.C.B. Association of the U.S.A.

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The lock has an extra large bearing surface in contact with the knuckle in the coupler, being approximately five square inches. No portion of the locking block extends beyond the bottom wall of the coupler.

This coupler has the desirable feature of easy accessibility of parts, thus facilitating the making of repairs.

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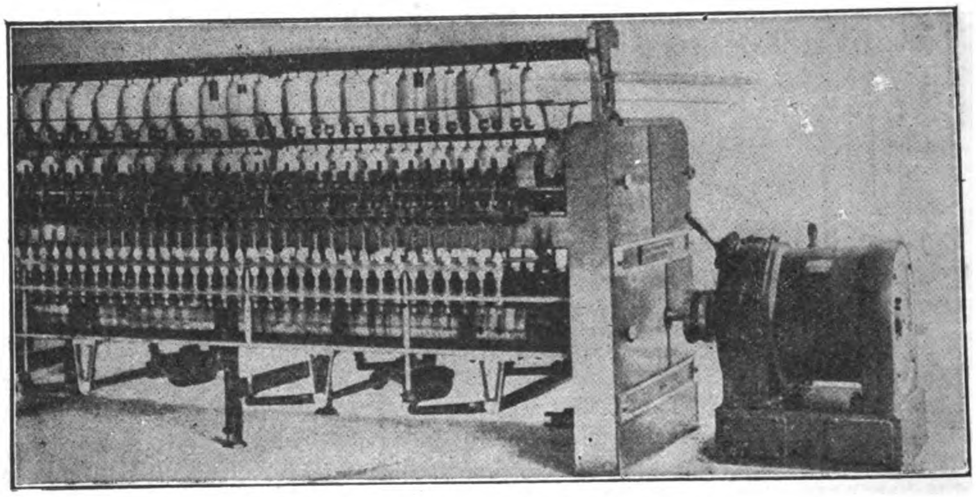

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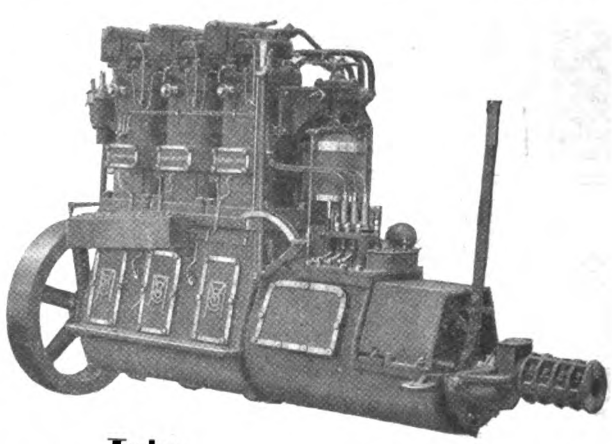

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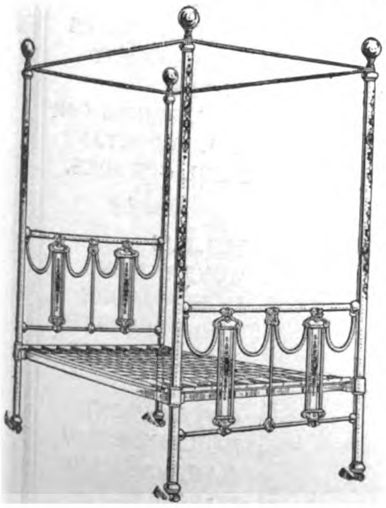

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Supplied to the Brazilian, British, Danish, German, Italian, Portuguese, Russian, Swedish, and U. S. A. Navies
War-Ships of every description, Mail, Passenger and Cargo-Steamers.
Complete fittings and repairs of any type of Naval Construction.

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MANILA :-: ILOILO :-: CEBU

*SOLE AGENTS IN THE PHILIPPINES FOR:—*

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| BUFFALO PITTS COMPANY | Agricultural Machinery |
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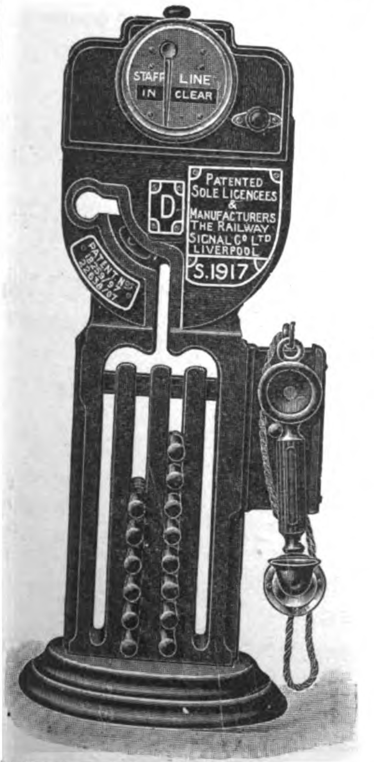
UNITED ASBESTOS ORIENTAL AGENCY, LIMITED

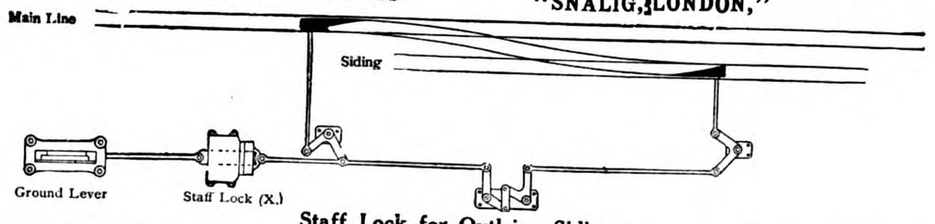
# The Railway Signal Co., Ltd.

SANCTUARY HOUSE, WESTMINSTER, LONDON, ENGLAND.

Telegraphic Address: "SNALIG, LONDON,"

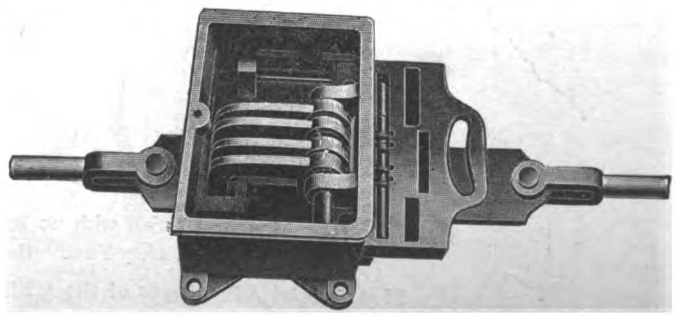



S Type Miniature Train Staff Instrument, with L Type Indicator and Telephone, for the block working of Single Line Railways.




Staff Lock for Outlying Siding.

When a train is required to enter or leave an outlying siding the staff is placed in the top slide of the lock, which is then pushed in.
The lower slide, which is attached to the ground lever, is released, thus allowing the ground lever to be operated.
When the points are set for the siding the train staff is securely locked in the box.



Staff Lock (X) with cover removed, for Outlying Sidings.

SOLE LICENSEES AND MAKERS OF,—
**The WEBB-THOMPSON System of TRAIN STAFF INSTRUMENTS for Single Line Railways & Tramways.**
(PATENTED.)
Schemes to suit special conditions of traffic working will be submitted on receipt of FULL Particulars.

# United States Steel Products Company

**UNION BUILDING No. 4 THE BUND, SHANGHAI**

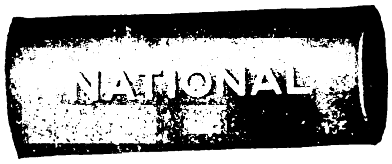
*Telegraphic Address:*
*"STEELYARD" SHANGHAI*

*Exporters of the Products of*

## NATIONAL TUBE COMPANY

**Awarded the Distinction of the Grand Prize at the Panama Pacific Exposition**

### "NATIONAL" PIPE




**ONE ORGANIZATION**—The manufacture of "NATIONAL" Pipe is controlled within one organization of highly trained men, insuring an unvarying quality.

**UNIFORMITY**—"NATIONAL" Pipe is uniform in structure, in chemical and physical properties—no "weak spots" to cause failure.

**SPELLERIZING**—This special hot roll-knobbling process increases the durability of the smaller sizes of "NATIONAL" Pipe by minimizing the tendency to corrosion.

**INSPECTIONS AND TESTS**—Satisfactory, durable service is insured by inspections and tests of "NATIONAL" Pipe throughout successive processes of manufacture.

**THREADING**—The uniform structure of "NATIONAL" Pipe insures clean-cut strong threads, which are easily cut with properly designed dies.

**FULL WEIGHT**—"NATIONAL" Pipe is made full standard weight only.

**MARKING**—"NATIONAL" Pipe is marked with the name "NATIONAL." This is the consumers' guarantee of quality.

**COMPLETE LINE**—"NATIONAL" products embrace a complete line, and is the only line including double length pipe.

**NATIONAL SERVICE**—Informative, technical Bulletins and other literature are distributed free to those who can use them to advantage.

### "SHELBY" SEAMLESS TUBING

**CONTROL OF QUALITY**—"SHELBY" Seamless Tubing is made under the supervision of one organization, insuring uniform quality.

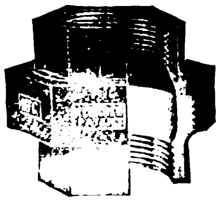
**SIZES AND SHAPES**—"SHELBY" Seamless Tubing is made in several hundred sizes and shapes—and special shapes and sizes to specification.

**MATERIAL**—"SHELBY"—Seamless Tubing is made from specially selected grades of open-hearth steel, and can be annealed to meet special requirements.

**ACCURACY**—"SHELBY" Seamless Tubing is true to gauge and will meet the most severe specifications.

**TESTS AND INSPECTIONS**—A rigid system of tests and inspections eliminate defective tubing at the mills.

### "KEWANEE" UNIONS



The Air-tested Union with no Inserted Parts
The "Safety-First" Union

**Five Special Advantages of the "KEWANEE" Union**

1—Brass to Iron Thread Connection—no corrosion. 2—Brass to Iron Ball Joint Seat—no gasket. 3—Compressed Air Test Under Water—no defective fittings. 4—Solid Three Piece Construction—no inserted parts. 5—Easily Disconnected—no force required.

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Pagsanjan Gorge

Underground River in Island of Palawan

Falls of Pagsanjan

Scenery to stimulate even the most widely Travelled is awaiting the Tourist in the Philippines. Above is shown the entrance to an underground river which is navigable for two miles from the sea. It flows beneath mountains 3,500 ft. high. Near Manila is the beautiful Pagsanjan gorge, a cleft in the rocks that tower hundreds of feet on either side. Manila is one of the most healthy cities in the World and offers excellent accommodations for tourists.

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When laid according to our specifications it is guaranteed.
For booklet and samples write to your nearest Agent.

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# Edgar Allen & Co. Limited

Imperial Steel Works, **Sheffield,** England

**Manufacturers of all kinds and sizes of**

## Steel

**for ARSENALS, MINTS, MINES, RAILWAYS, ENGINEERING SHOPS, BLACKSMITHS, etc.**

**Special Steels for Rifle Barrels, Rifle Components, Cartridges, Magnets, etc.**

**Allen's "Stag Special" & "Air-hardening" High Speed Tool Steel, "Stag Brand" Tool & Miners' Drill Steel, Saws, Files & High Speed Twist Drills.**

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*ALLEN'S STEEL IS SHEFFIELD-MADE AND THOROUGH!*

**Indents through Home Merchants receive special attention.**

**Allen's Special Motor Car Steels, "Imperial" Manganese Steel Crusher Jaws, Dredger Pins & Bushes, Screen Bars, Railway & Tramway Points & Crossings.**

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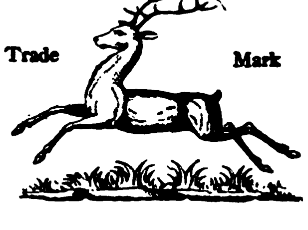
愛鍊純鋼廠

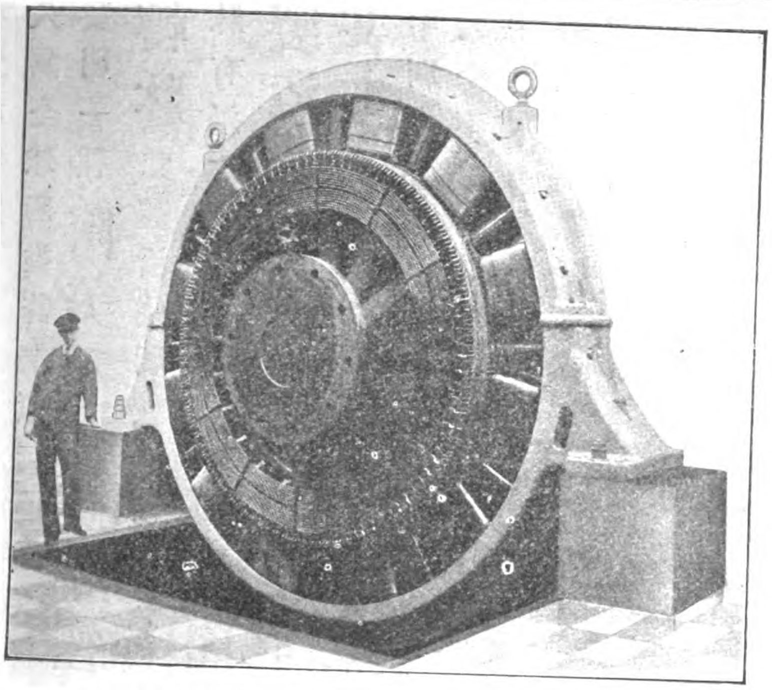
**JAPAN BRANCH:**
2 Mitsu Bishi Bldgs, 1 Yaesu-Cho,
TOKYO

Trade  Mark

**CHINA BRANCH:**
1 B Kiukiang Road
SHANGHAI

# 佛克耳司有限公司廣告

Wickers Limited



此圖爲車鈎汽機發電機克羅瓦德一千五百電流自五百至五百三十每分鐘旋轉一百八十次

本公司專造各式電機
直接車鈎汽機發電機
旋轉變壓器
脫羅交流發電機
馬達發電機
馬達及轉輸發動機

總公司開設英國京城百勞匯路
工廠在英國昔非特及柏名罕

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Chartered Bank of India, Australia and China

本銀行爲皇家所特許立案之銀行開設於英國倫敦監督門第三十八號
資本英金一百二十萬鎊
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專做匯兌以及銀行各種營業事務今將經理及分行開列於后

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愛立灼 曼谷（暹羅） 巴塔非亞（爪哇）孟買（印度）加爾各答（印度）廣東 西部 可倫坡（印度）特利（印度）福州 海洪 漢口 香港 伊羅伊羅（小呂宋） 依巴 卡拉基 克蘭神戶（日本） 克拉蘭博 馬特拉司（印度）馬來半島（小呂宋） 鈕約 北京 梹榔嶼 卜克 仰光 西貢 式拉卡 上海 新加坡 蘇拉排耶 台浜 天津 橫浜

定期存款可來行面議利息每半年一付每年六月三十號及十二月三十一號爲付息之期

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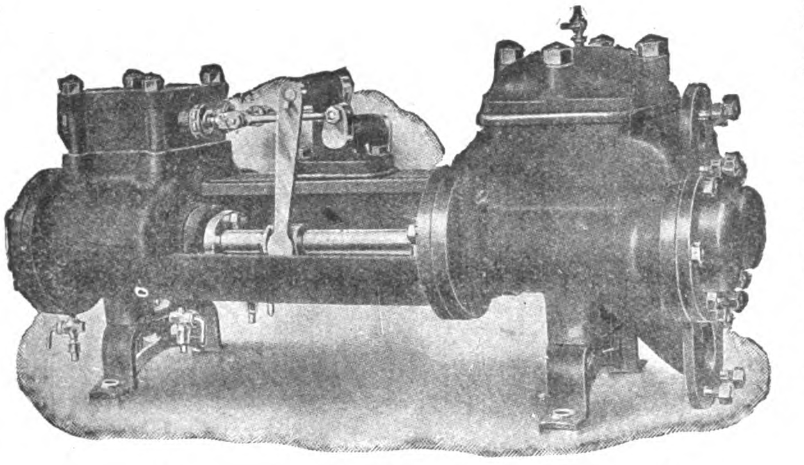
組合司理 活脫海
副司理 傅蘭塞 柏來司登 同啓

# 美國機器公司

The American Tool Works



模範活塞式汽鍋注水機器

本公司專製各式車牀轉牀鉋床等久爲全球所推許無煩贅述近又新發明一種**阿美利加距半徑轉牀**其靈活便利較從前各種機牀有過之無不及且**質料堅固製造精良**以之裝配各物**分量甚準**無絲毫之錯亂可爲機器界中別出心裁最有價值之品其形式大小不一有二尺二尺半三尺三尺半四尺五尺六尺七尺不等或用皮帶或用馬帶均可應用若欲樣本請來函至本公司取閱可也

**總發行所美國哇哈華省新新納搭城**

# 愛鍊純鋼廠

在英國希斐爾特地方

## 鹿牌鋼

本廠專鍊各種各式尺寸鋼料爲寰球各製造局造幣廠礦務局機器廠打鐵廠等處所用並造超等鎗管鎗彈吸鐵鋼風硬器具快鋼彈簧鋼兼造銼刀快絞絲鑽鋸錘鋼條鋼片汽車特別鋼料錳質碎石鋼鐵路及電車分路叉橫軌等以及碎礦鋼料並造彈球管子水泥機器一應俱全

賜顧者請臨上海二馬路外灘B字一號接洽或函致亦可

獨家經理上海漢口泰來洋行白

Edgar Allen & Co., Ltd., Sheffield, England.

# 瑞生洋行

設分行在漢口天津北京等處

本行開設在華歷有年所承蒙 官商訂購各種機器或全廠或零售無不價廉物美屢承 嘉許遐邇皆知凡官商諸公購辦機器務祈惠臨 敝行 估開價目繪呈圖說格外克己上海漢口兩處另設機器陳列所陳列各種最新式樣機器及五金器具鋼地軸皮帶輪掛脚等以備諸公駕臨觀覽特此佈告

上海瑞生洋行謹白

Shanghai Machine Company

# 魏廷敦起水機器有限公司

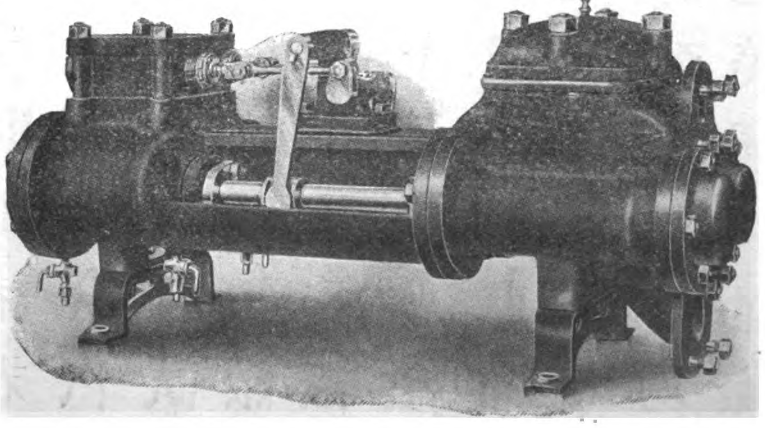
Worthington Pump Company, Limited.

本公司起水機器亦在各國著名賽會得有金牌

本公司亦有製造廠在以下之國

英國 法國 美國 澳國

德國 印度國



本公司亦有辦事處在以下載明之各國

比利時 南亞斐利加 坎拿大

澳大利亞 中國 葡萄牙

墨西哥 巴西國 俄羅斯

阿珍甸 西班牙 義大利

中國總辦事處在上海九江路第三號

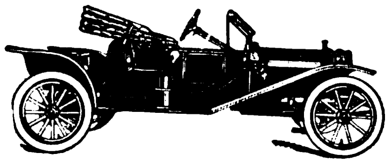
# 美孚油行廣告

Standard Asphalt Block Filler. Standard Oil Company of New York.

本行製造地瀝清砧塞俱其效用能使所鋪之地不能因天時之更換而改易并使砧面上之黏性合度且棉軟而能減少噪聲本行之地瀝清砧塞俱其功效有如此之大故凡美國來往行人最多之處鋪以此物其功效則顯而易見故人多稱道之若承諸君不棄欲知詳細效用并價目者請來函詢問可也

# 美國紐約克美孚油行廣告

Pratt's Motor Spirit. Standard Oil Company of New York.



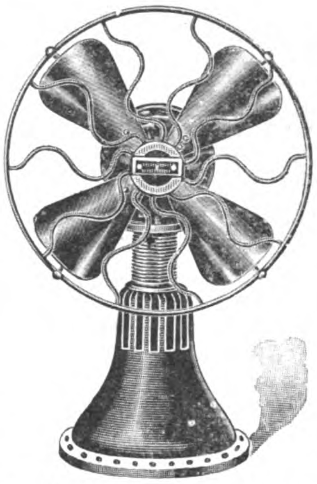
諸君費錢以購買⿰犭并司令汽車油之故必望其發生極速馬力並多走里數然欲達最美滿之目的本行則勸諸君購取敝行之⿰犭并司令汽車油若一經試用諸君則知敝行之貨物爲無上上品也此項⿰犭并司令汽車油裝於箱內每叮自二加侖至五加侖均由敝行之美國鍊油廠所鍊就直接由該處運來故毫無摻雜他種物質之弊

美孚油行⿰犭并司令汽車油部啓

# 柏樂天洋行廣告

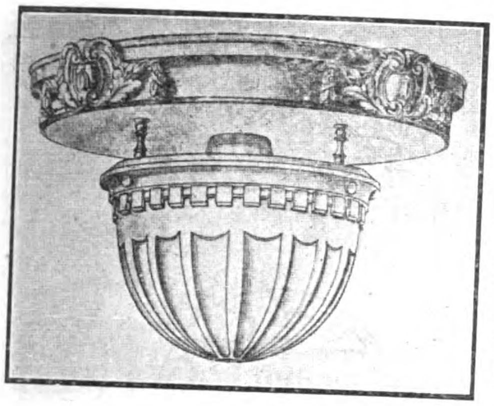
The International Import & Export Co.

## 新發明無電風扇



本行經理美國藍克勃里持廠(譯卽湖風馬達扇)新發明一種無電自來風扇點燒火酒速率快捷每二十四小時祇費洋一角五分而一分鐘內自五百轉至六百轉之多故此風扇非獨內地極端歡迎卽裝電之處亦覺搬動靈便危險毫無

## 新發明白來司康拉脫燈

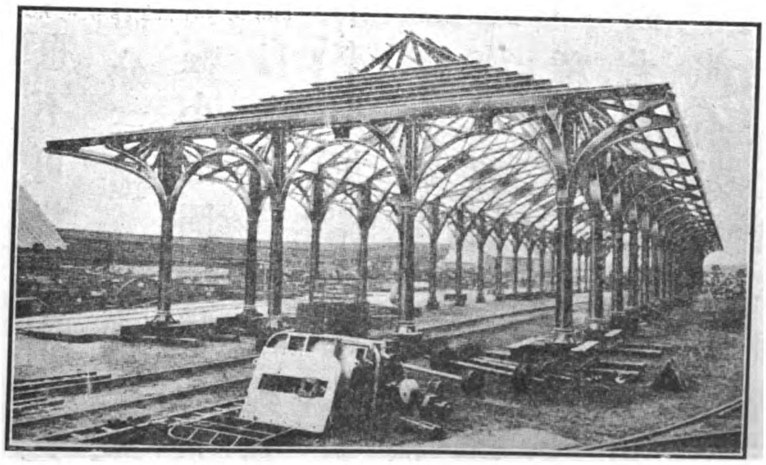


此燈製造精美燃點清潔明如白晝且光頭柔和其色如銀輕巧可愛效力極佳質地美好因發光勻洽空氣透徹易於料理諸君試購用之方知此燈之適用也倘蒙定購或願任各處經理者請函詢大馬路廿八號柏樂天洋行可也

# 海特雷脫生公司廣告

Head, Wrightson & Co., Ltd.

本公司有大廠三所專造煤礦場及各礦場所用之物及裝煤船貨車起重機風箱冶汽爐船塢門等橋坑總齒輪鋼質貨車屋頂煙筒油池之類



此圖乃香港之車站其屋頂爲本公司所建造本公司爲英國大廠之一每年出鑄件十萬噸出機器一萬七千噸且爲中國印度日本包辦各項工作

# 美孚油行廣告

Socony Auto Oils.　Standard Oil Co. Lubricating Oil Department.

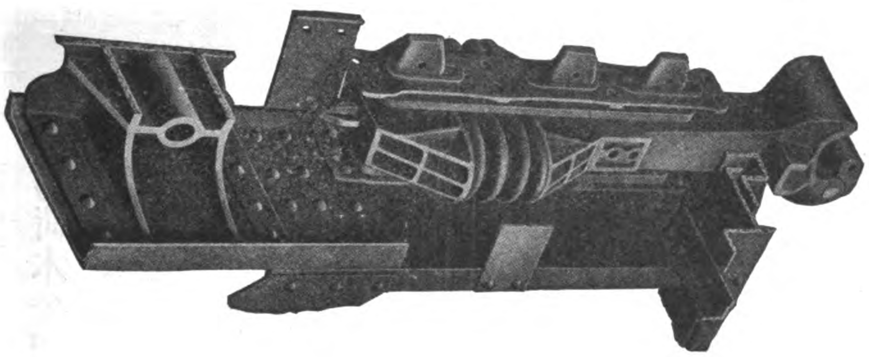
本行所出**鎖可聶**自轉油乃由格致考驗鍊成特供馬達家所需用且此油精緻能使馬達機器運動合度且可經久省用而免磨擦之弊蓋馬達機器若遭磨擦較用油爲費所謂機器之馬力者即毅力也不可荒廢本行之**鎖可聶**自轉油分三種一種爲**一愛克司**之油用於輕小之圓油機上於寒冷之天氣必能自由流行也一種爲**兩愛克司**之油亦用於圓油機上適用於盛暑之時蓋凝結合度不致汚抹倘此油因天時之故不適於用可用**三愛克司**之油一種爲**三愛克司**之油亦用於圓油機上特備爲熱地所用即**兩愛克司**油不足即以此油代之若承各界諸君不棄欲知詳細請來函索取說明書即汽車油之指南本行專做光油遐邇聞名以上三種油桶祈認明庶不致誤

美國紐約克美孚油行光油部敬啓

# 新民頓鐵道材料出口公司廣告

The T. H. Symington Co. Railway Material Export Corporation.

本公司所製鐵道用具爲全世界之冠且樣式均特別新樣所製之旅行箱及運動機件無論內件外件無不齊備故爲美國鐵道奉爲圭臬且通行於世界



各處中國之京張鐵路及高麗鐵路均購用極有效力若承不棄請通函定購可也開設美國紐約省百老會路一百四十九號

# 英國來大匯有限公司廣告

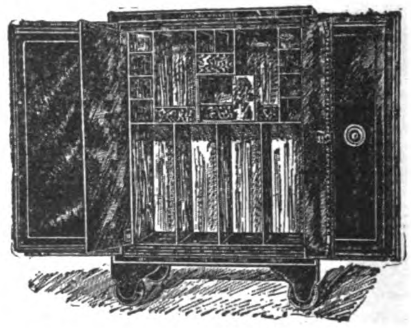
F. Reddaway & Co., Ltd.

本公司獨製駱駝牌皮件專製救火皮帶鐵甲皮帶及皮布等件且所製皮件爲水或汽或藥水所不能侵入者本公司又製造橡皮器俱以供鐵路并工藝廠及開礦工作等處之用若承各界諸君光顧請向經商人詢問駱駝牌可也

總公司及工廠開設英國曼區司得

## 晉隆洋行廣告

Herring Hall Marvin Safes. Mustard & Co.



赫令好馬文保險箱爲
上海所罕見目下陳列
於本公司之售賣間
若欲知詳細價目請來
函索取目錄幷價格表
爲荷本公司在中國爲
單獨經售此項保險箱
之公司

公司開設上海圓明
園路二十二號
電話第十五號

## 司帝反生公司廣告

W. F. Stevenson & Co., Ltd.

小呂宋　伊羅伊羅　塞步

本公司駐小呂宋單獨經理白
弗羅匹次公司之農業機器克
老司來弟兄公司之煤汽機及
油汽機奧司丁製廠之造路機
器威廉滑脫公司之航海機器
及水鍋等

合羣愛司倍司督司東方經理處

## 希米脫加熱機關車蒸機公司廣告

The Schmidt Superheater For Locomotives.

The Schmidt Superheating Co., Ltd.

本公司所製之加熱蒸機中有
四百九十多條之鐵道用二萬
八千五百架機關車之加熱蒸
機均爲倫敦及西北鐵路公司
所審定若承購買請向上海經
理處瑞記洋行定購可也

公司開設英國章司民司
得維多利亞街二十八號

## 馬爾思公司

A. J. Morse & Son Diving Apparatus.

本公司創設於紀元一千八
百三十七年專製下水應用
之器俱若欲定製無不立辦
公司開設美國鮑思敦高
街第二百二十一號
經理處小呂宋弗蘭克司
決浪克

# 白老頓製銅公司廣告

The Broughton Copper Co., Ltd.

本公司冶銅製造紫銅黃銅青銅管子溶冶合度堅固異常特供航海及機關車幷種種用具又製造銅塊銅條銅片及銅版幷製電銅版及夾銅等物

公司開設英國曼區司得

# 安德生公司廣告

Wm. H. Anderson, & Co. Manila, P. I.

本公司專做出口進口貨物幷代客買賣且爲以下所列各公司駐小呂宋之經理革林島水門汀泥公司　香港纜索製造公司　立培麥克聶立培公司　司活夫公司勃老司活克白耳克考蘭特公司婑磨督公司大愛地特保險箱光滑油溝渠管火磚火泥及羅勃老特避火之瓦若承各界光顧祈通函定購可也

本公司開設小呂宋小打克羅橋

# 麥康韋討萊公司廣告

The McConway & Torley Co. Janney—Penn. Coupler.

邇來新發明之愛姆西皮近耐形連結俱爲本公司所輸入及研究所得者此連結俱即近耐形之化身而變成目下最通用之對鎖鎖具及肘節開具爲美國愛姆西皮會所推許玆將各所製造者一一說明於後

對鎖者即既爲輪制所鎖住則鎖條決不向上活動因下端凸出干連結之空處免致脫節也

鎖具者即以鎖砧置於連頭之內端俟不連結之端向上轉動時即按節而合若欲解脫此鎖具當於連結時拔去之

肘節開具即由最相結連之處或略分開之處開放至最大開放處其運行處自由且肘節開放完備

其鎖面形極大約五方吋故能使肘節附合且鎖砧大小適合於連結端之下此連結俱備有各種之附屬品且易於修理此項連結俱爲本公司所專製

總公司開設美國本色萬尼亞省匹此勃

中國經理上海愼昌洋行天津協隆洋行

# 交通銀行廣告

## BANK OF COMMUNICATIONS

本銀行資本一千萬兩專辦銀行一切交易各項存款無論定期活期其利息均照議給付并滙劃中國各處以及押款等事

總行開設北京

分行東三省 牛莊 奉天 長春 吉林 哈爾濱 遼陽 蓋平 孫家台 鐵嶺 錦縣 新民屯 直隸 北京 天津 張家口 保定 海甸 順德 唐山 北通州 豐鎮 勝芳 石家莊 山西 大同 陽高 陝西 澠池 山東 濟南 濟寧 棗莊 烟台 德州 河南 開封 焦作 周家口 溧河 道口 彰德 鄭州 信陽州 洛陽 鄱陽 江蘇 上海 蘇州 無錫 鎮江 揚州 浦口 板浦 徐州 清江浦 浙江 杭州 寧波 安徽 蕪湖 蚌埠 江西 九江 湖北 漢口 宜昌 沙市 湖南 常沙 益陽 衡州 湘潭 常德 寶慶 廣東 廣東 特別處新列后 熱河 歸化 香港 新加坡 大連等等地方

總經理 張思仁 史拉克

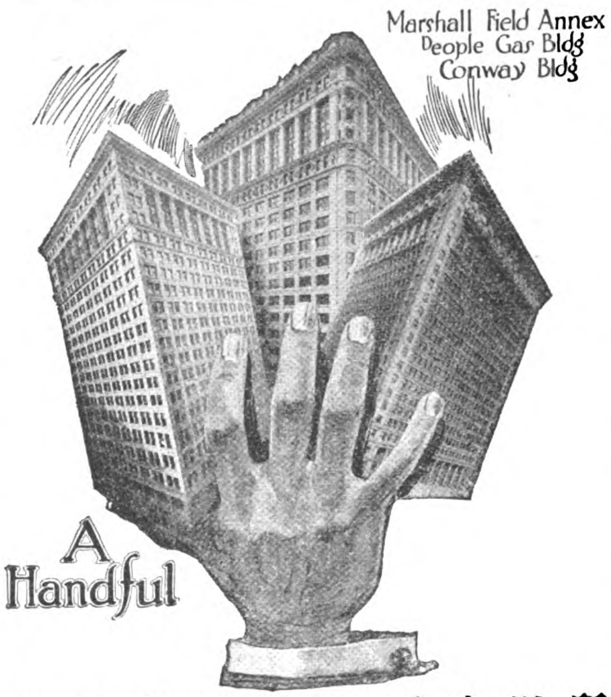
副經理 徐寶琪

仝啓

# 西北展張鐵片公司廣告

North Western Expanded Metal Co.

本公司製造哪白兒展張鉄片專爲近世築造之鋼屋內部所用以上之圖爲美國芝高哥城最大最新近之大廈其內部及底盤均爲本公司所製之哪白兒展張鐵片條板所造蓋以之作底盤其價甚廉以之作墻則耐久因哪白兒牌之條板爲惟一之建築品且爲全球所公認推爲內外建築特別品之標準若用於熱帶處

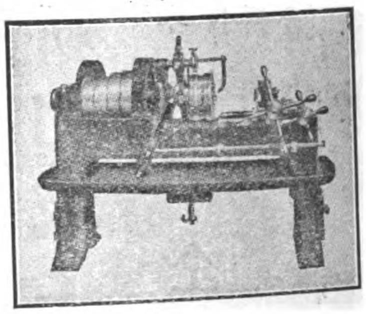



所用以作墻及天花板底則更相宜蓋其性耐久而不曲且不笨重易於運輸且避水患此項展張鉄片條板業經由五洲各大建築家實地試驗防熱避風火暴雨等危險實爲建築家所不可少之物

今敬告建築家若欲建造房屋無論何時何地何物先請察驗哪白兒牌之展張鉄片條板本公司備有說明書請來函索取可也

# 英國約書亞西潑有限公司

Joshua Heap & Co., Ltd.

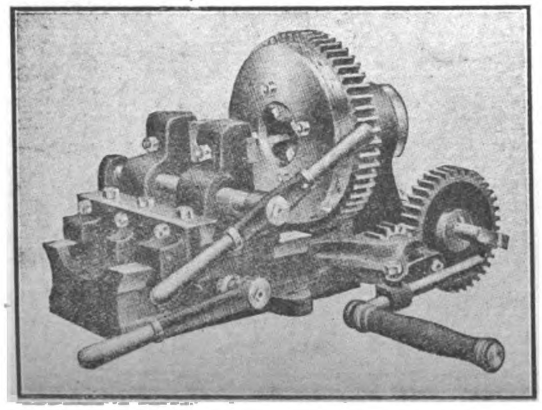


本公司專造製螺絲機器

此圖爲二吋單頭自動製螺絲機器爲多頭製螺絲機器之一曾註册立案爲近世最省工力之機器備有柄頭及自動開機連於螺形頭上及自動關機幷配製螺絲各俱無不靈動

本公司所出之註册鋼質螺絲模型爲市上所罕有蓋質地堅實螺絲板易於拆卸且全體皆爲良工所製並無發條或輕脆之料作摻雜其間

此圖爲改良通用之製螺絲機器可製螺絲管彎曲短小之件如對徑二吋大小之物或釘梢對徑二吋半等物均可製造近年來銷數已達二千五百架其大者如對徑八吋之物亦可製造此項機器電力與人力均適用若欲知詳細請來函索取目錄爲禱



# 橫濱正金銀行廣告

Yokohama Specie Bank, Limited

本銀行創設於紀元一千八百八十年總行開設日本橫濱資本日洋四千八百萬元收足資本日洋三千萬元公積日洋一千八百五十萬元英京倫敦各銀行如倫敦及司密夫聯合銀行倫敦聯會股票銀行及派耳銀行均爲本行之經理今將分行及經理處開列如下

安東縣 孟買 加耳谷塔 長春 大連 檀香山 香港 漢口 神戶 倫敦 來因司 遼陽 奉天 紐約 牛莊 長崎 大坂 旅順 北京 舊金山 東京 鐵嶺 天津 青島 哈爾濱 勞山及耳司

上海亦設分行 活支及定期存款利息均有銀兩洋圓均聽尊便 匯票可通日本高麗臺灣及中國各重要地方并歐洲印度美洲各通商處所并辦理各種銀行所辦各事宜

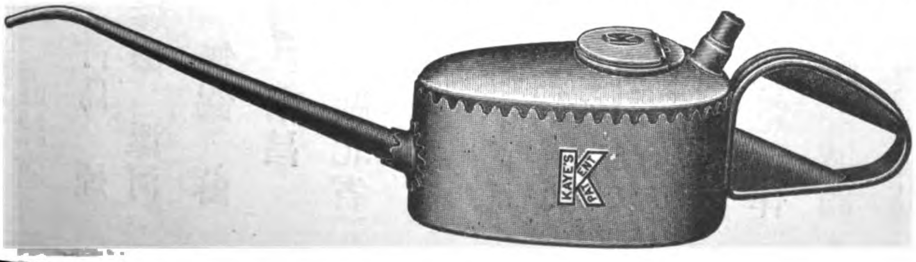
經理科大麥啟

# 克耶鎖鍵工廠露佈

Joseph Kaye & Sons Ltd., Lock Works, Leeds.

本公廠專製車門鎖鍵滑門門門精巧門鐶門鎖及門門等以應各種用品且製造鋸齒形無縫之純鋼油管承經註册專賣爲英國之出品供應於英國水軍者不下六萬只大西鐵路大北鐵路蘭克省及雅克省間之鐵路倫敦及西南鐵路南斐洲及印度國有之鐵路均用此純鋼油管盛油也倘承不棄請來信定購是幸

工廠開設於英國离池



# 中國銀行廣告

THE BANK OF CHINA

本銀行於民國元年奉　政府命令設立兩年以來信用昭著總行設於（北京）分設（直隸省）天津　保定　邢台　灤縣　唐山　滄縣　濮陽　邢縣　磁州（山東省）濟南　青島　煙台　藤縣　濟寧　周村　惠民　益都　臨清　臨沂（河南省）開封　周口　彰德　漯河　信陽　道口（山西省）太原　運城　歸化城（江蘇省）上海　南京　鎭江　無錫　蘇州　揚州　淸江浦（安徽省）安慶　蕪湖　大通　徐州　下關　蚌埠（江西省）南昌（福建省）福州　南台（浙江省）杭州　寧波　蘭谿　嘉興　湖州　溫州　紹興（湖北省）漢口　沙市　宜昌（廣東省）廣州　江門　汕頭　瓊州　韶州　潮州（東三省）奉天　營口　安東　錦縣　大連　鐵嶺　長春　吉林　哈爾濱　齊齊哈爾　等處享有發行鈔票代理國庫之特權並辦理匯兌買賣生金銀往來存款定期存款抵押放款貼現放款代各公司商號或個人收取本埠及他埠票據款項保存有價證券及一切貴重物件至匯兌一項無論通商大埠蕞爾遐陬凡本行已經分設者均屬便利所收匯費無不格外克已以副光顧諸君之雅意再本行發行鈔票準備充足凡完糧納稅發俸放餉官款出納商民交易以及應付鐵路輪船郵電一律通用現爲便利商民行使本行鈔票起見特於北通縣（海甸鎭）設立兌換所並於本京內外城商店繁盛之區委託殷實商號代兌本行鈔票如有多數鈔票請逕向（西交民巷）本行兌換可也茲將代理兌換處所開列於下

▲注意▼（東四牌樓）寶源銀號（安定門）會源銀號（東珠市口）隆茂源銀號（騾馬市）恆裕金店（西河沿）仁昌金店（後門）永通誠布店（新街口）益泰成布店（西單牌樓）和順公布店（後門）平易銀號（西單牌樓）益大銀號（又珠寶市爐房十家）恆盛銀號　同元祥爐房　德順號　聚起號　祥瑞興記　源豐號　復聚號　萬興號　全聚厚記　聚盛源爐房　再本總行營業時間開列如下　陽曆四月一日起至九月底止每日上午九點鐘起至下午四點鐘止由陽曆十月一日起至三月底止每日上午十點鐘起至下午四點鐘止

# 法蘭克司屈郎機器公司

Frank L. Strong Machinery Co.

本公司開設斐列濱經理各種機器幷顧問工程建築營造等事下列各製造廠均爲本公司駐斐列濱祗此一家之經理公司

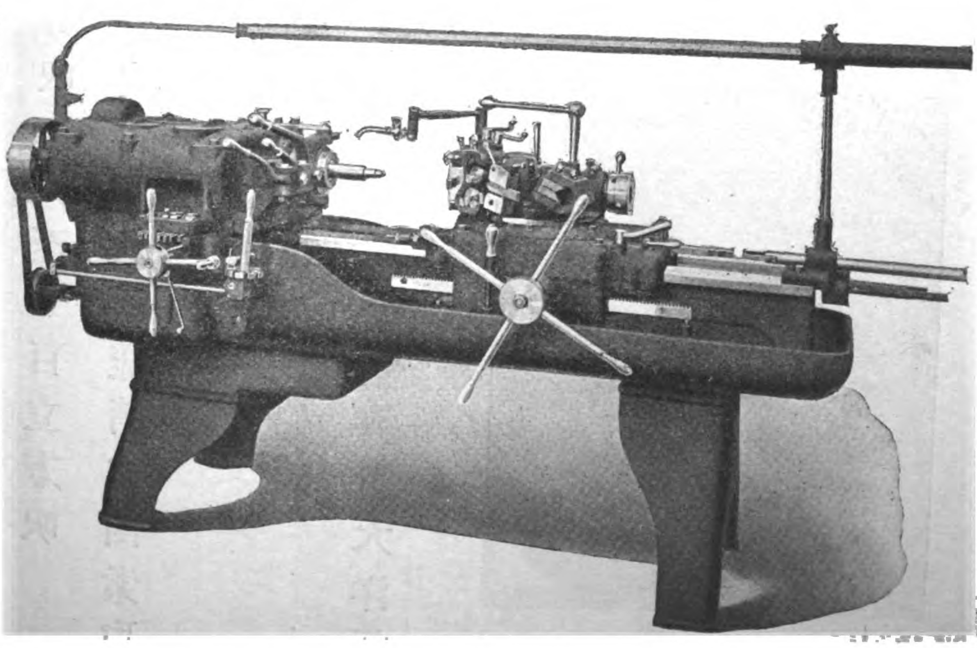
總電汽公司 專製電汽應用材料器俱
匹登水輪公司 專製水輪
拿皮泡公司 專製車機升機
芝加哥抽機器俱公司 專製抽氣機壓氣機及附屬品
美國器俱工廠公司 專製車機鏍子製模俱半徑鑽頭
美國白羅耳公司 專製風車風房幷通氣之器俱
白郎息比製造公司 專製研磨機器及各附屬品
鷹立球鋼鐵公司 專製鋼鐵器俱
立及悟特製造公司 專製鋸件
屈老司康克利鋼件公司 專製(康式)房屋物件
哇的司升機公司 專製坐客升機及貨物升機
押克製造公司 專製冰機
白考克威耳考克司公司 專製水管鍋爐
美國浣衣機器公司 專製浣衣機器
愛姆司鐵廠 專製汽機及鍋爐
灰衣搿安公司 專製鋸件及木工各種機器
古特立志公司 專製橡皮物件
耶耳士耐製造公司 專製鏈具及升機
查去倫公司 專製避水皮帶等件
火文哇温公司 專製(海密耳登可立司)式之汽機
克老搿轉轍俱及應用品公司 專製德律風器俱及附屬品
搿老克裝包公司

若承光顧無不歡迎電報密碼請用英字 Landstrong.

# 羣司蘭姆生機器公司

Jones & Lamson Machine Company.

此圖爲本公司所特之車床若能習學此機完美則得利可操勝劵也此車床爲車塔平面機其大小爲闊三吋長三十六吋專做鐵條柄軸等各種工件故此機及其作用 能使工人幷機器加增出品 因用是項機器不必購用價值高貴之小另件配製工作也



總之製造此種車床之目的 即費一文錢得一文錢之利於購者有莫大之利益

欲知詳細章程請來函索取不費郵資

本公司開設 美國活忙脫省司不林飛而特
英國倫敦維多利亞街九七號

# 華愛德公司

本公司代聘全球著名
工程師專包辦並經理
各種工程兼各式工程
物料已歷有年所成效
昭著爲各國官商各界
所推許如蒙　惠顧請
向下列各經理處接洽
可也

美國紐約滙業處四十三至四十九號
英國倫敦克洛克路九號

J. G. White & Company

# 潑利司脫門弟兄公司廣告

Priestman Brothers, Limited.

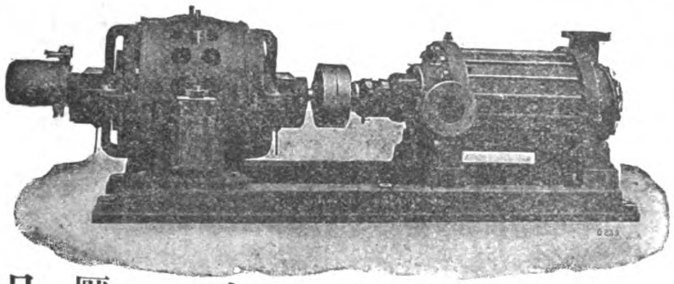
本公司專製掘泥機器挖泥機
器及升降機器其兜之大小式
樣共有一百五十種小自一立
方呎起大至一百立方呎
若欲知詳細式樣請來函索取
樣本可也
本公司開設英國倫敦
中國之經理處上海志大洋行

上圖爲多兜挖泥機之一爲大
包工家大成公司所有

# 麥脫拍來脫輪盤抽機公司

Mather & Platt, Ltd. Turbine Pumps.

輪盤抽機爲本公司所發明且已有四十年之經驗故所出之抽機愈製愈精購用者無不樂用且無論高低均適於用此項抽機之動力或由馬達小輪汽輪速率之汽機或皮帶或繩索之力均可抽動且一經試用則耐久非常不必再行查驗本公司所出之抽機通行於各處極多行試多年從未拆卸開視因本公司所製造之抽機美備洽意也此項抽機有自動壓勻之力裝製齊備且可增減機內之空穴價格便宜若欲購用而知詳細章程者請來函索取目錄上圖爲六筒之抽機　頭長六百十二尺每分鐘可吸六百五十加侖每分鐘可轉一千四百五十次則所動之力乃藉馬達也




# 交通部吉長鐵路客車時刻表

Kirin-Changchun Railway.

民國四年五月一日改定

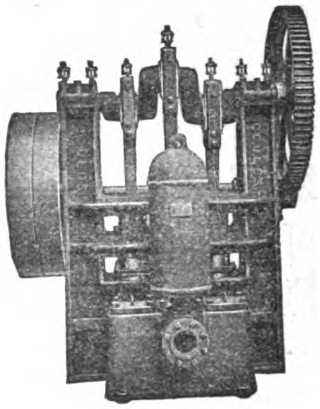
## 由長春頭道溝至吉林

| 站名 | | 下行車 第一次客車 | 下行車 第三次客貨車 |
|---|---|---|---|
| 頭道溝 | 開 | 上午七·三〇 | 下午二·三〇 |
| 長春 | 到 | 上午七·三八 | 下午二·三〇 |
| 長春 | 開 | 上午七·四二 | 下午二·四二 |
| 卡倫 | 到 | 上午八·一三 | 下午三·一〇 |
| 卡倫 | 開 | 上午八·二四 | 下午三·二五 |
| 飲馬河 | 到 | 上午八·四六 | 下午三·三八 |
| 飲馬河 | 開 | 上午八·四八 | 下午四·〇三 |
| 下九臺 | 到 | 上午九·〇三 | 下午四·一七 |
| 下九臺 | 開 | 上午九·〇四 | 下午四·二三 |
| 營城子 | 到 | 上午九·一六 | 下午四·二四 |
| 營城子 | 開 | 上午九·一八 | 下午四·三八 |
| 土們嶺 | 到 | 上午九·四〇 | 下午五·〇五 |
| 土們嶺 | 開 | 上午九·五〇 | 下午五·一五 |
| 趙家店 | 到 | | |
| 趙家店 | 開 | 上午一〇·一〇 | 下午五·三三 |
| 樺皮廠 | 到 | 上午一〇·三一 | 下午五·四七 |
| 樺皮廠 | 開 | 上午一〇·三三 | 下午六·〇三 |
| 孤店子 | 到 | 上午一〇·四六 | 下午六·一八 |
| 孤店子 | 開 | 上午一〇·四七 | 下午六·二〇 |
| 九站 | 到 | 上午一一·〇三 | 下午六·三八 |
| 九站 | 開 | 上午一一·〇五 | 下午六·四二 |
| 吉林 | 到 | 上午一一·二五 | 下午七·〇五 |

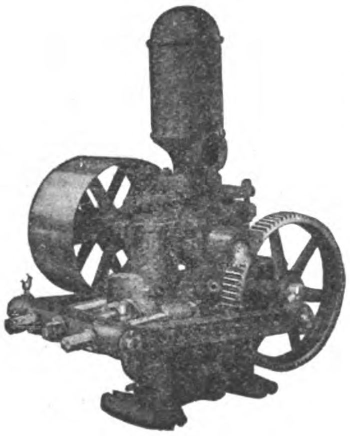
## 由吉林至長春頭道溝

| 站名 | | 上行車 第二次客車 | 上行車 第四次客貨車 |
|---|---|---|---|
| 吉林 | 開 | 下午二·三〇 | 上午六·一〇 |
| 九站 | 到 | 下午二·五〇 | 上午六·四二 |
| 九站 | 開 | 下午二·五三 | 上午六·四五 |
| 孤店子 | 到 | 下午三·〇七 | 上午七·〇三 |
| 孤店子 | 開 | 下午三·〇八 | 上午七·〇四 |
| 樺皮廠 | 到 | 下午三·二三 | 上午七·一〇 |
| 樺皮廠 | 開 | 下午三·二四 | 上午七·二三 |
| 趙家店 | 到 | | |
| 趙家店 | 開 | 下午三·四六 | 上午七·三八 |
| 土們嶺 | 到 | 下午四·〇六 | 上午八·一八 |
| 土們嶺 | 開 | 下午四·一三 | 上午八·二四 |
| 營城子 | 到 | 下午四·三三 | 上午九·〇三 |
| 營城子 | 開 | 下午四·三六 | 上午八·五〇 |
| 下九臺 | 到 | 下午四·四八 | 上午九·〇五 |
| 下九臺 | 開 | 下午四·五〇 | 上午九·〇五 |
| 飲馬河 | 到 | 下午五·〇四 | 上午九·一〇 |
| 飲馬河 | 開 | 下午五·〇六 | 上午九·二三 |
| 卡倫 | 到 | 下午五·三八 | 上午九·三五 |
| 卡倫 | 開 | 下午五·四〇 | 上午九·四七 |
| 長春 | 到 | 下午六·一〇 | 上午一〇·三一 |
| 長春 | 開 | 下午六·一五 | 上午一〇·三七 |
| 頭道溝 | 到 | 下午六·二五 | 上午一〇·四七 |

# 美國顧爾機器廠

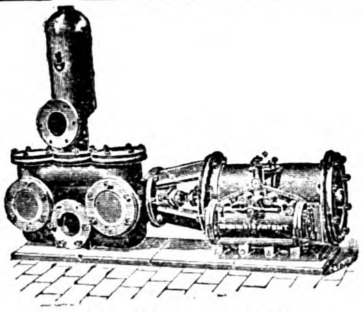


本廠開設已久爲中外各國所馳名專造各種大小抽水幫浦其三角抽水機爲尋常各廠家所最爲合用之機尚有如保險公司所用最爲靈巧便利之轉動抽水機此項機器甚爲輕便備爲消防之用尤爲合宜故凡保險公司俱有備置因其得輕便之利也其餘如自來水廠船廠各機器廠並礦井內外所應用之大小各式抽水機器無不俱全本廠係專造各項抽水幫浦故比他家式樣更多製造尤爲完善凡中外各國之賜顧者悉知本廠機件之精良造具之美備也欲知詳細情形請移玉至本行接洽可也

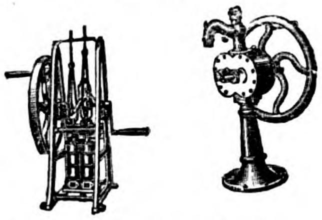


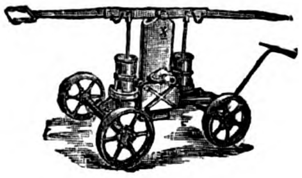
中國經售處上海圓明園路四號協慎隆昌洋行

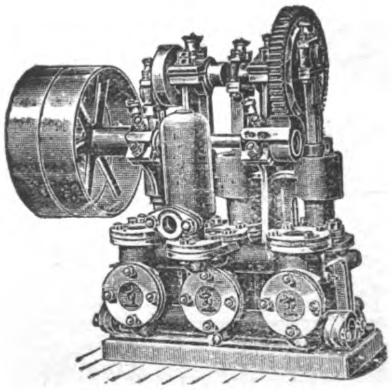
The Goulds Manufacturing Co.

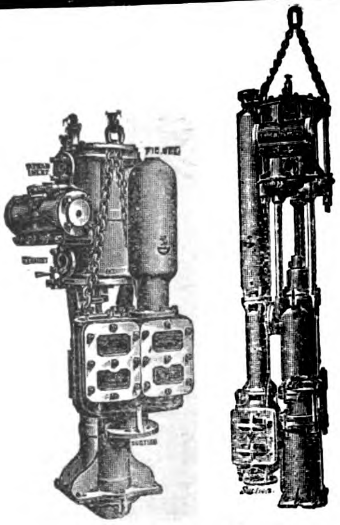


普通汽力抽水機









下垂抽水機
煤船煤礦所用

本公司製造各種抽水機專備工商各界採用各式全備不論使用何項動力如人工汽機皮帶風車水電各力之類均能適用如蒙函詢即將東方目錄寄奉英國華亨頓城

伊凡斯公司謹啟

Joseph Evans & Sons

# 美國展輾冶鐵工廠廣告

The American Rolling Mill Co.

新舊兩鐵釘之比較方形熟鐵釘可用三十八年鋼鐵釘可用十一年

本公廠爲國家所特許稟准立案爲萬國鐵廠所賞識因所鑄之**奧姆可**鉄耐用且爲新發明格致術可免生銹之患鐵性本易生銹而本廠獨得妙法使其免銹二十年前無人知其原性故有歐美著名之冶金學士研究其生銹之故及免生銹之法至今日大工已成查得首時所用之鐵爲純潔之質故耐用後因有雜質如鎂及硫礦等物故欲免其生銹必須將雜質冶去而後可至免鋼生銹之法亦然當將雜質及炭質冶去

由研究試驗而得一定例如電池之例一律若電內放雜質則電流不順本廠之**奧姆可**鐵能免生銹因按格致之理而溶鑄者也其雜質均摒棄

凡鉄質之面既有不同故生銹之處亦有多少故凡鑄鐵具務須厚薄均勻寬鬆合度

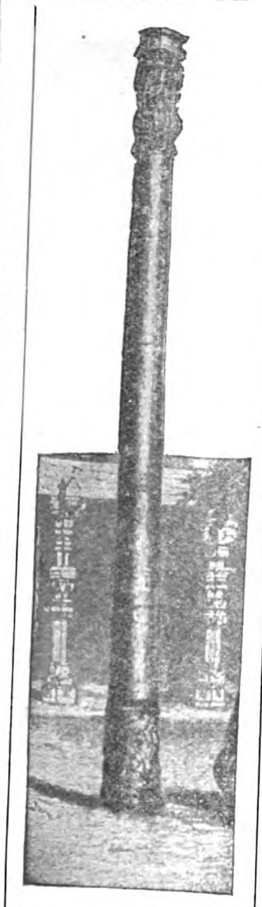
本廠開設美國哇哈哇省

密特兒登電報用奧姆可三字

**欲索取詳細目錄可將英文告白之下面角紙裁下送來可也**

英國經理倫敦馬銳公司　小呂宋經理非列賓　大西洋海灣太平洋公司

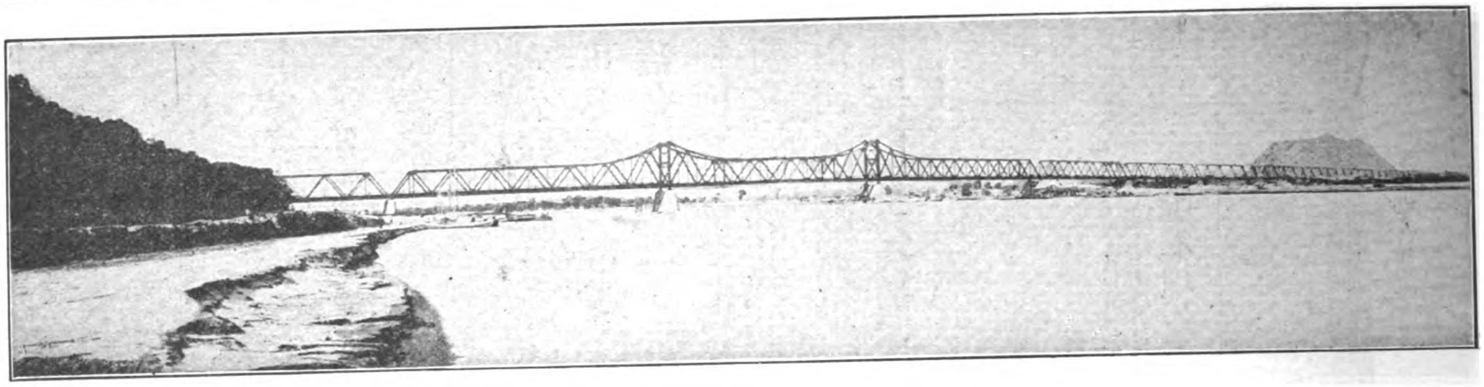
屋頂及屋傍引傳電氣之奧姆可縐紋鐵件



此圖乃印度國特而希之大鐵柱建於紀元前九百年爲純鐵所鑄之柱

奧姆可縐紋鐵溝大道鐵路陰溝最適用貨真耐用欲知目錄請來信索取可也

# 津浦鐵路



## 津浦鐵路局改訂特別通車時刻廣告

本路特別通車上下開到時刻現經改訂與京奉膠濟滬甯等路客車上下銜接自本年十二月一日實行茲將改訂時刻暨各路銜接時刻開列如左

### 下行車

京奉路由瀋陽來之通車星期六日上午十鐘三十五分到天津東站
本路特別通車星期六日上午十一鐘二十分由天津東站開
京奉路由北京來之快車每日上午十一鐘二十五分到天津總站
本路特別通車星期六日上午十一鐘四十八分由天津總站開
膠濟路由青島來之快車每日下午五鐘五十九分到濟南
本路特別通車星期六日下午八鐘十二分由濟南開星期日下午一鐘十三分到浦口
滬甯路開往上海之快車星期日下午二鐘三十五分由南京開是日下午八鐘二十分到上海

### 上行車

滬甯路快車星期一日上午七鐘十分由上海開十二鐘三十分到南京
本路特別通車星期一日下午一鐘四十五分由浦口開星期二日上午六鐘四十分到濟南
膠濟路開往青島之快車每日上午八鐘由濟南開
本路特別通車星期二日下午二鐘三十三分到天津總站二鐘五十三分到天津東站
京奉路開往北京之快車每日下午三鐘四十五分由天津東站開其開往瀋陽之通車星期三日上午一鐘二十五分由天津東站開

### 特別注意

客商星期六日由京來津換乘本路特別通車南行者務請在總站過車勿到東站以免趕車不及

再客商星期六日上午八鐘三十分由北京起程星期日下午八鐘二十分即到上海其由上海北行者星期一日上午七鐘十分起程星期二日下午六鐘五十五分即到北京每次需時不足三十六鐘洵屬最捷之徑順此附告

Chinese Government Railways—Tientsin-Pukow Line

Hongkong & Whampoa Dock Co., Ltd.

## 香港黃埔船澳有限公司廣告

本公司承接製造各種機器鐵路火車橋梁河海明暗輪船拖船淺水火船載客運貨大小快捷毛打輪船舉凡一切水陸起重器機爐鑊鎔鑄銅鐵器具電鍍等等工程並常有大單銅鐵螺絲角鐵鋼板鐵板等料躉賣加以本公司置有大石澳六所旱排二座以便大小船艦入澳之用洵鉅製也

諸君光顧凡有船隻裝修無論大小工程莫不應期完備庶不妄費時日又且工精料美價亦相宜如蒙惠顧請問總司理人 R. M. DYER可也

茲將各澳地址尺寸開列於後

| 澳名 | 澳底長 | 澳口闊 | 水深 |
|---|---|---|---|
| 九龍第一號澳 | 七百尺 | 面八十六尺 底七十尺 | 三十尺 |
| 九龍第二號澳 | 三百七十一尺 | 七十四尺 | 十八尺六寸 |
| 九龍第三號澳 | 二百六十四尺 | 四十九尺三寸 | 十四尺 |
| 九龍第一號旱排 | 二百四十尺 | 六十尺 | 十四尺 |
| 九龍第二號旱排 | 二百二十尺 | 六十尺 | 十二尺 |
| 深水浦澳 | 四百六十六尺 | 八十五尺六寸 | 二十尺 |
| 香港仔第一號澳 | 四百三十尺 | 八十四尺 | 二十三尺 |
| 香港仔第二號澳 | 三百三十三尺 | 六十四尺 | 十六尺 |

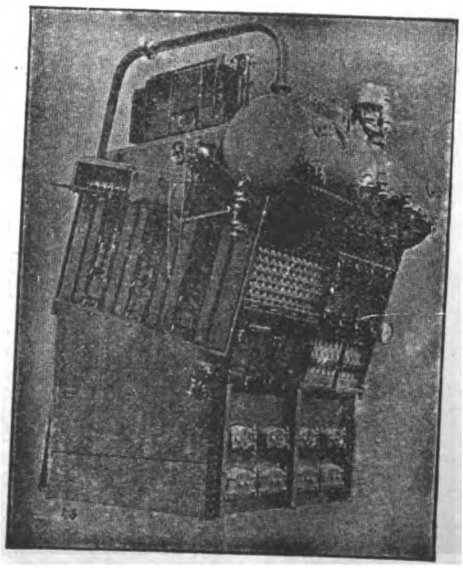
本公司通電處乃用 MANIFESTO HONGKONG
香港寫字樓電話第二十號
本廠寫字樓電話第十三號K
呂宋代理處 FINDLAY & CO., MANILA, P. I.

## 拔柏葛魏闍司有限公司

Babcock & Wilcox, Ltd.

## 製造特別水筒鍋爐

本公司陸地所用之鍋爐與加增熱力機器及最新自行燃煤之帶鍊機器係屬相連用之於電燈紡織麵粉造紙織呢兵工造幣礦務水泥自來水等廠最爲合宜



航海用之汽鍋圖

本公司專造加增熱力機器自行燃煤之帶鍊機器蓄熱機器電力起重機器起卸煤之機器鋼質烟囱及輪船軍艦所用之鍋爐等

公司之中國總辦事處在上海四川路一百零三號

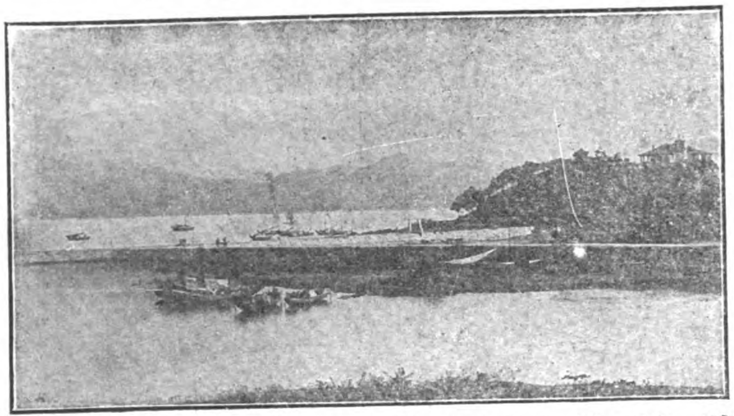
製造廠設在英德法美等國

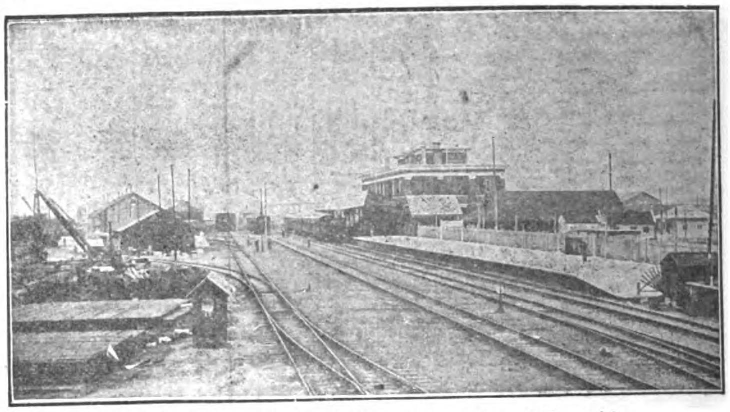
# 廣九鐵路

Canton-Kowloon Railway

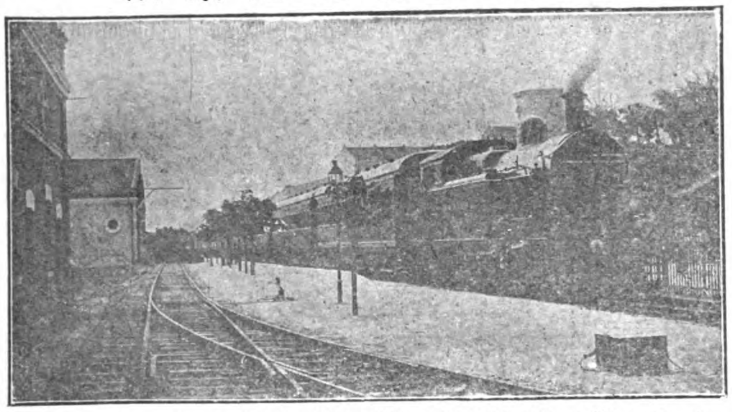
下列乃華段圖景該段八十九英里

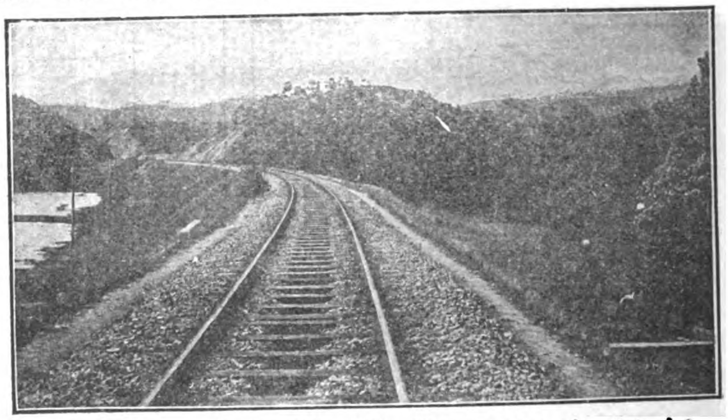
下列乃英段圖景該段二十二英里



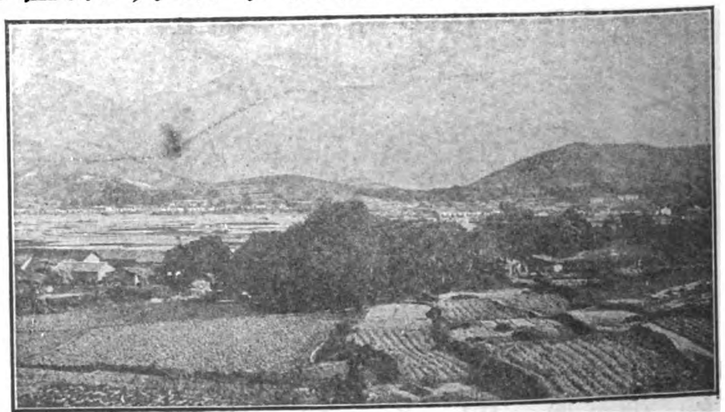


廣州香港間最捷最廉之路線兼所經各處之景緻

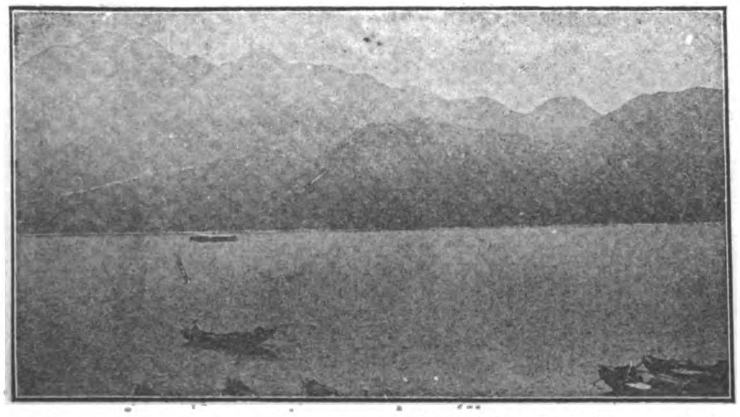


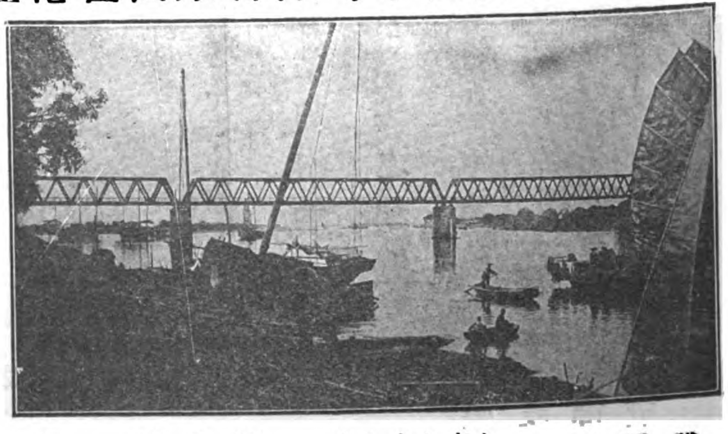


每日省港有直通快車試次來往並有西膳茶點以備搭客不時之需



富商遊客搭快車可即日來回在港在省各有四點餘鐘之久儘可從容專辦





譏將本年夏天時刻表開列於下

香港開
上午六點三十五分快車
上午十一點十五分
上午十二點五十五分

廣東到
上午十點四十分快車
下午六點十分
上午四點三十分快車

廣東開
下午七點快車
上午八點三十分
上午十二點快車
下午四點三十分快車

香港到
上午十點三十分快車
下午四點十四分
下午三點五十二分快車
下午七點五十二分快車

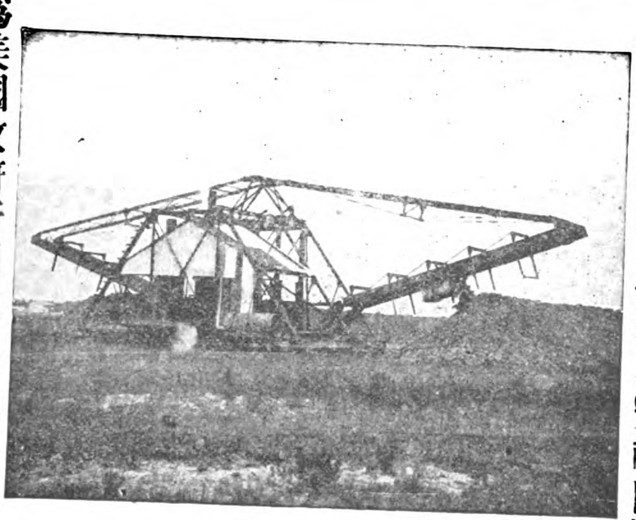
並備有專車租賃車費從廉如欲知詳細者請看告白或問省城及香港鐵路總局可也

# 奧司丁挖渠機器公司露佈

F. C. Austin Drainage Excavator Co.

本公司製造各種機器如溉田機器鑿溝機器且一經購定卽可速卽裝運出口今本公司特登廣告以告諸包工家營造師以及政府中官吏因本公司已將各機器早經裝就定單一到卽可運往印度緬甸錫蘭暹羅海峽殖民地埃及中國日本及遠東諸各處水脚保險均可包理

奧司丁鑿溝機器樣式及大小種類極多且各種地土均可挖鑿其兜能自傾外出其機器之料作均鋼所鑄



奧司丁掘土機器能自由運動地之深淺闊狹斜側均適宜合用其兜能自傾外出

圖中之奧司丁連結挖掘機器爲美國政府所用以開巴拿馬運河之用每一連機每點鐘可挖掘六十八立方碼奧司丁公司所出之機器通行於美國英國坎拿大奧司達利亞南亞非利加日本俄羅斯意大利巴西及埃其丁民主國且均由各該政府定購

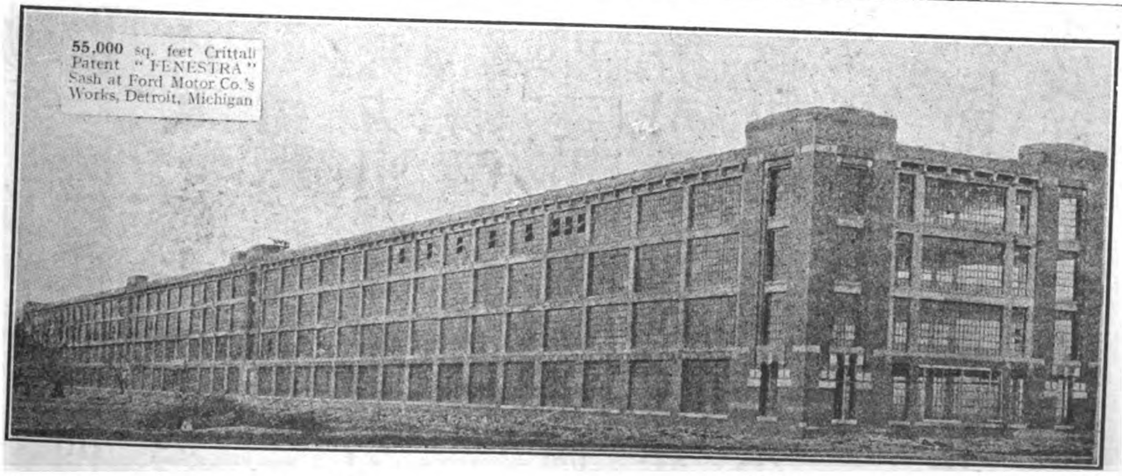
若欲知詳細章程者可函達上海遠東報主筆先生可也

本公司開設美國芝加哥省

# 克立討耳公司廣告

CRITTALL

本公司包造各種房屋遐邇馳名工廠開設英國



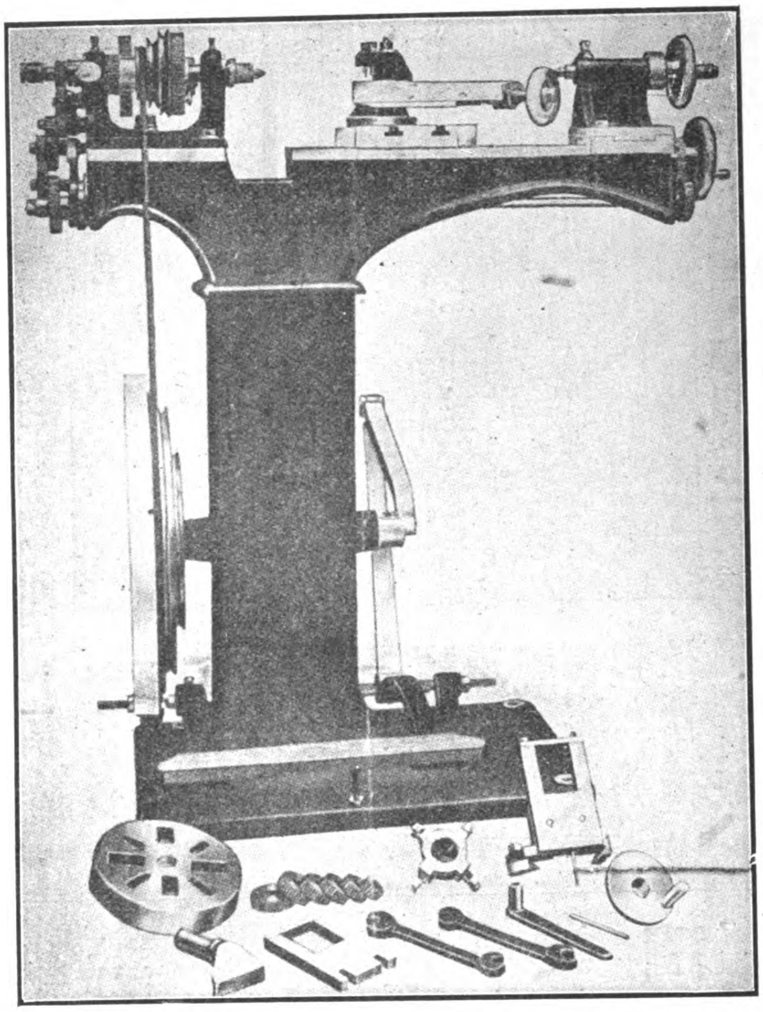

日本經理東京麴町區有樂町十一町目

中國經理上海漢口天津

上海南京路十三號盈生洋行

此圖爲美國米西干省製造汽車之工廠爲本公司所築之鐵窗計長五萬五千方尺

# 怡和洋行機器房廣告



本行分設滬濱數十餘載專辦各種機器如下　鐵軌　車輪　車頭　紡織機　磨麪機　搾油機　碾米機　磚瓦　鋸木牀　造紙機　印書機　鎗礮　製革機　電燈　餅乾　火力引擎　煤氣引擎　火油引擎　鍋爐　發電機　開礦吸水機及馬達引擎等並常備現貨如下

火力引擎　煤氣引擎　立式鍋爐　吸水機　手搖吸水機　大小車床　修機應用各件　淨茶機　紙百　配更　皮帶等其餘一切零件不及詳載倘蒙賜顧無不歡迎定價亦格外克己請至圓明園路本帳房接洽電話一零九六

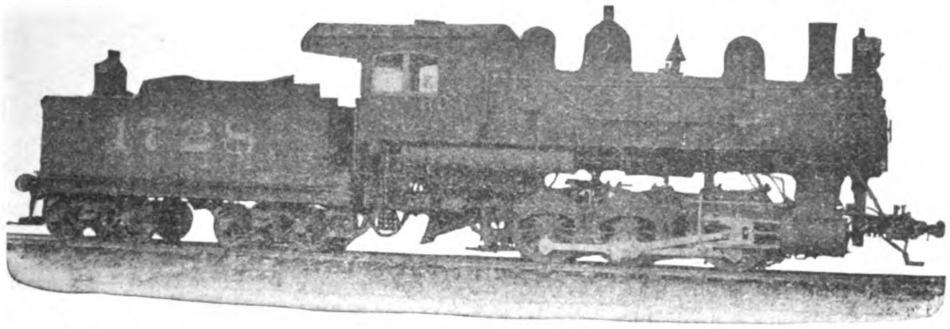
Jardine, Matheson & Co.

# 賚瑪火車公司

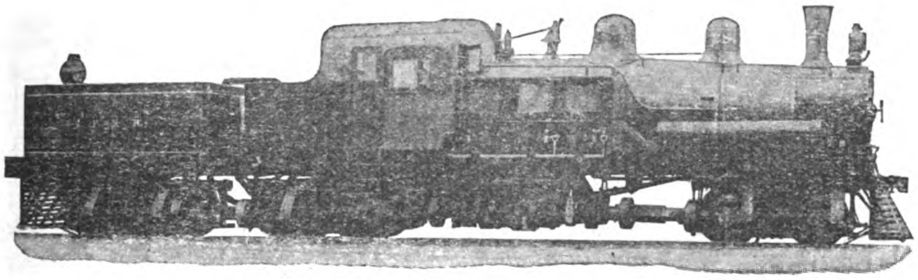
Lima Locomotive Corporation

本公司專造各種火車頭式樣玲瓏質料堅固或用橫桿式或用齒輪式務求輕便靈捷至速率及拖重力尤非尋常者所可比擬

總發行美國哇亥俄省賚瑪城



此圖爲本公司代美國南部鐵路所造之十五輛二十寸暨二十六寸轉轍式之火車圖樣

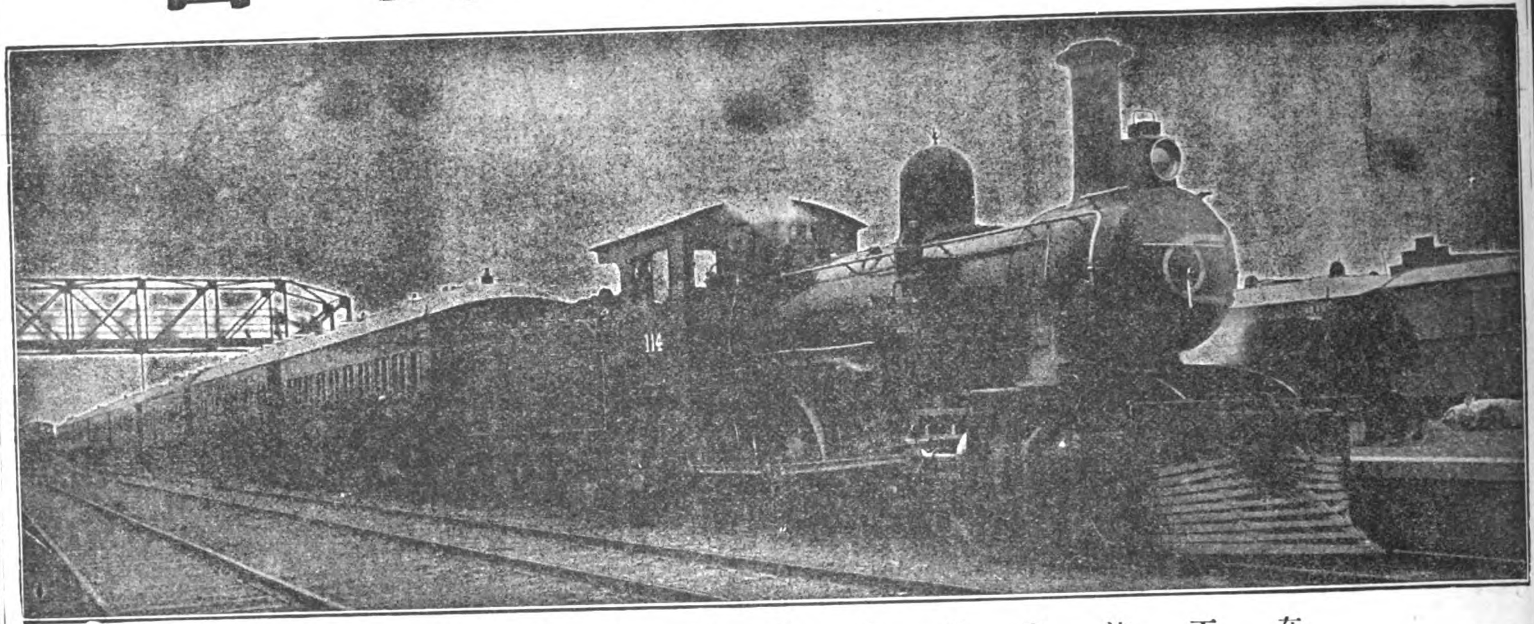


此圖爲本公司代中國京張鐵路所造三輛齒輪式一百噸重之火車圖樣

製造火車不獨求其堅固而且取其靈活本公司各種出品久爲東西各國所推許近年更大加擴張所聘工師均爲歐美著名專家所用機器亦均係新式以故所造各種車頭既能堅固復靈活而穩妥不惟於康莊平坦之大軌道能行止自如即以行駛於山嶺曲徑之小軌道亦能旋轉如意且特製齒輪式之拖重車其重力能拖十噸至一百五十噸其餘花樣繁多均載B字樣本中欲閱者來函索取當即寄奉

分售處中國 香港 上海 廣東 天津 新旗昌洋行

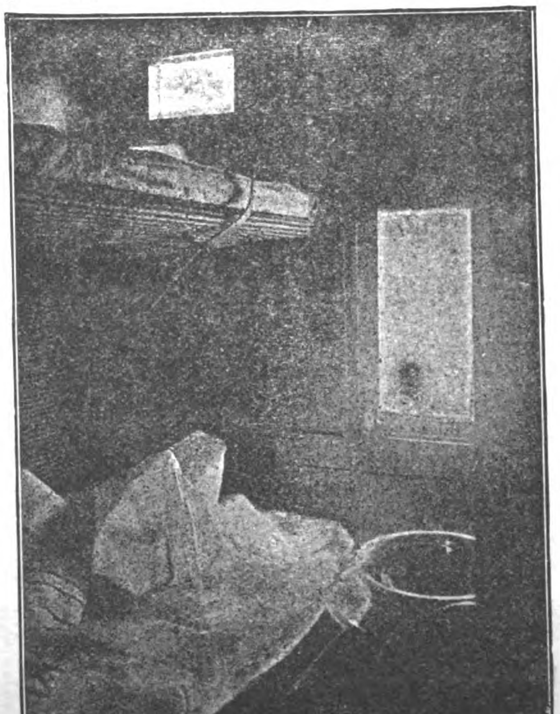
# 京奉鐵路廣告



在天津東車站停放之床位通車

啓者本路路綫係與附近各路互相聯絡東則接連南滿路可達歐洲南則接連京漢路可達長江一帶商埠由京漢路中心點幷可達至正太路之太原府道淸路之開封府汴洛路之河南府北則與京張路綫相連可達至萬里長城四面貫通無遠弗屆本路綫所經名勝如北京

北京車站



通車頭等睡房

瀋陽之皇陵殿宇天津之北方商務總滙唐山之工廠礦務山海關之萬里長城牛莊之南滿洲商埠俱屬繁盛之區足供遊覽至京瀋直達通車每星期來往一次備有飯車睡房精潔適意以便行旅而廣招徠倘蒙

光顧毋任歡迎之至特此佈告

Chinese Government Railways of North China

# 美國紐約克美孚油行廣告

The Standard Oil Company of New York

本行所出之**鎖可聶瀝青油**爲生瀝青油由格致術所製成如欲引長其效用黏合其物質柔固其原料以及天氣溫熱度之容納無不隨心所願

**鎖可聶瀝青油**可用於任何堅硬之物不加他種之油亦合於用

下列之各處均可用此**鎖可聶瀝青油**

建築永久之道路　屋頂水路工廠地板拍球圓場　水滴管洞

用於鐵路車結處電桿電柱等處　包鋼質建築物及溝管等物

**鎖可聶瀝青油**可用於法侖表熱二百二十一度之融點故於最熱之天氣亦合用適度也**鎖可聶瀝青油**非試用之物乃合衆國多年實用之油功效最著之物品也

欲知詳細請函達上海五馬路十一十二號

美國鈕約克美孚油行光油部可也

# Roofing Malthoid

麻鐸屋頂氈已爲上等工程師及繪圖師詳說之且爲上等工匠用在遠東一切奇異房屋之中

麻鐸屋頂氈已試用多次實可認爲屋頂氈之標準

安置此項氈時須照本公司章程鋪釘方保無虞

如要說明書及樣子請向最近之代理店取閱可也

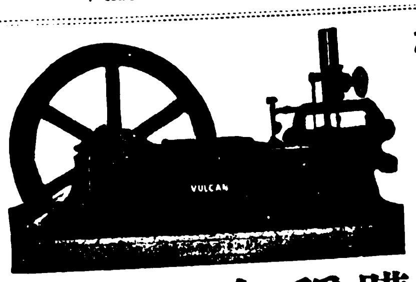
**中國代理處**

上海　怡泰洋行
天津　仁記洋行
漢口　太平洋行
香港廣東　瑞記洋行

## 美國舊金山
# 瓦爾根製冰機器廠

Vulcan Iron Works

圖爲製冰機之一種




花色繁多
不及備載

本廠專造各式製冰機器運銷各地蒙購辦諸君謬加推譽稱爲靈便合用本廠自當精益求精以期仰副　雅意現在製備各種新式機器或大或小花樣俱全如欲取閱樣本函索即奉特此佈告

電碼 "Vulcan" San Francisco

# 勒克洛炸藥

又名勒辣司丁泡特係**開山開礦用最大爆力之炸藥**其質共有二類一硬質一流質兩種未參合時分裝二處決無炸裂之患并無須多費存放在火藥棧倉內祇置放乾爽地方不論何處均極相宜此藥參合後**較之別種炸藥更爲穩當**藥粉裝法用一布捲筒對徑六分或至二寸長六寸半或至八寸爲度即可應用製造廠林洛泡特公司在美國紐約華爾街一百零六號

Rendrock Powder Co.

# 上海耶松機器船廠有限公司

The Shanghai Dock & Engineering Co., Ltd.

**電報行名** Telegraphic Address and Code

"FARNHAM"

A. B. C. 4th and 5th Editions

A.-1 Watkin's, Scott's

Western Union

and

Engineering.

密碼本用

**總公司**

在百老匯路廿六號

德律風第七號

Address.

**電話號碼** Telephone Number

大班處 七五七號

書記處 一八七號

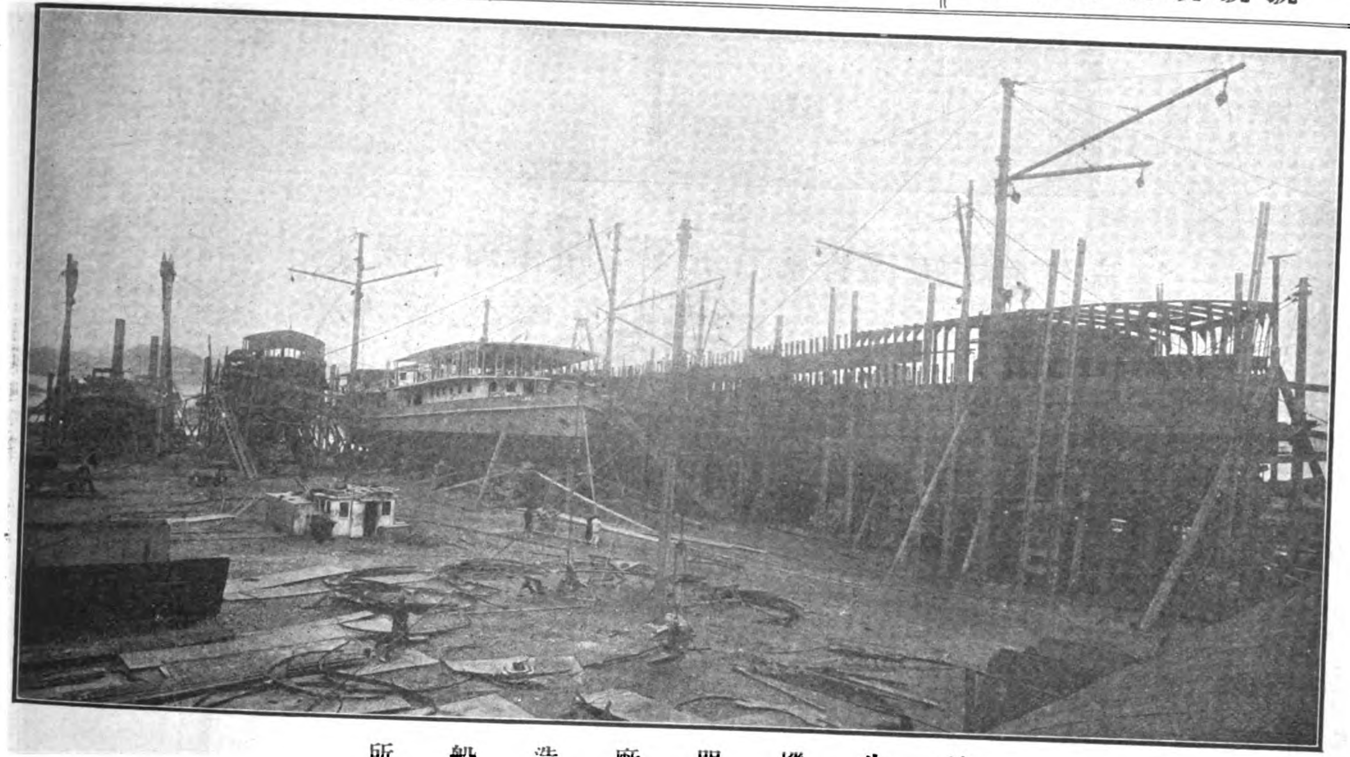
總辦處 六七八號

幫辦處 一八八七號

總寫字間 七號

浦東寫字間 二三號

浦東機器間 一二二七號



祥生機器廠造船所

The Model exhibited at St. Louis Exposition and awarded the Gold Medal in 1904.

本廠所造輪船模型英一千九百零四年在美國聖魯易賽會得賞金牌

All Kind of Steam Heating Institutions. 熱水汽管卽司丁火爐各種式樣俱全

本廠共有船塢五處長自三百五十五尺至五百三十二尺船塢口闊自五十三尺至七十七尺深十六尺至廿四尺　本廠價格可稱東方第一低廉　本廠船塢工場共有基地四百四十八畝佔有水面一英里半之長　碼頭方船均全以便各輪船修理時可以靠傍小輪修理並可拖至岸上各船塢均備有起重吊機可受六十五噸之重物　各造船處及工場均裝用電燈並有活動吊機可吊六十噸重之物並有最新式機器應用物件機器間及工場均裝輕便鐵道　本廠備有水鬼多名撈船器具及吊機浮船一遇招呼隨時應命無論海船江輪明輪暗輪拖駁小輪機器駁船挖泥船吊機浮船以及碼頭方船等如蒙詢問價目無不從速答覆　各種修理及拆舊換新等本廠均可承接並能迅速從事　本廠並有船上岸上所用機器爐子開礦機抽水機以及各種機件電氣自來火火油司丁各種機器俱全如蒙賜顧請即駕臨或函件接洽均當歡迎也

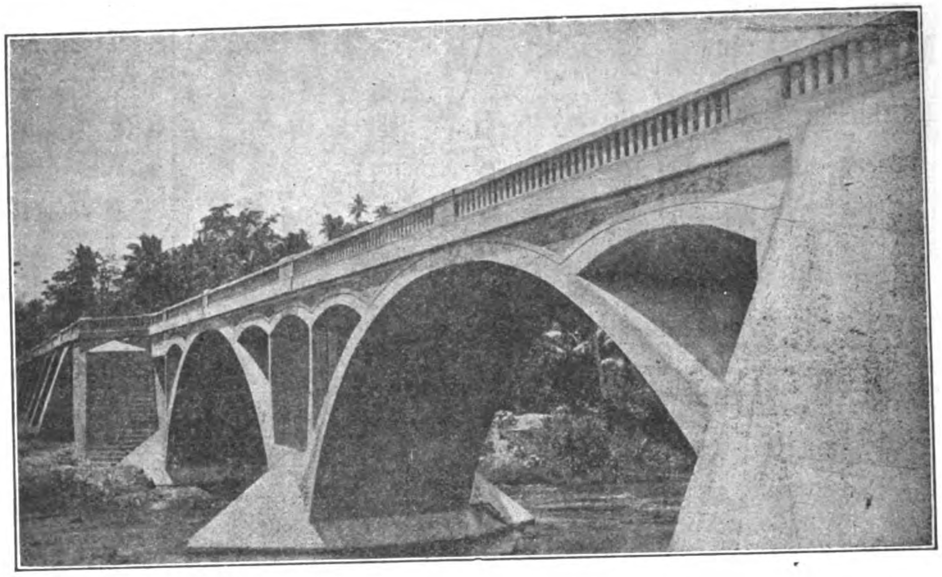
# 青洲英泥

Green Island Cement Company, Ltd.

燒青泥磚

大小明暗瓦溝

水斗等器



花階磚

大階磚

火爐磚及泥

亞路卑扒拉波歷握橋用二千五百桶青洲英泥而建成

代理分銷處

架刺吉打 端拿摩利臣公司

新加坡 士滔片民

長口及漢口壹帶渣甸洋行

仰光 希活

孟米 士片拿公司

庇能 列公司

中國海岸及臺灣渣甸洋行

本行在別埠代理處

上海支行

日本支行

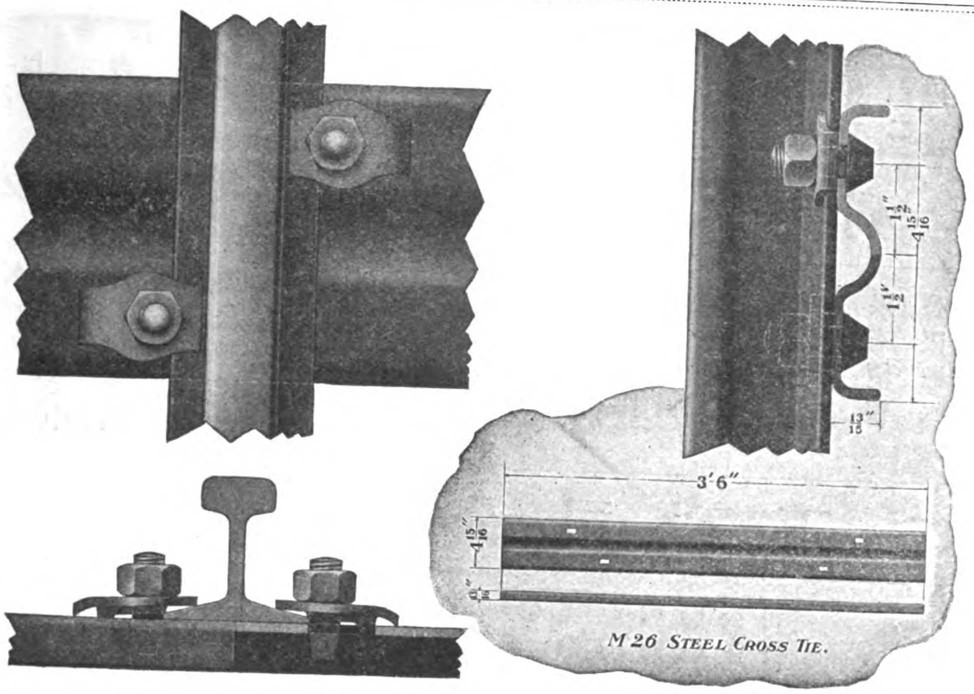
天津支行

非律賓羣島全權代辦人小呂宋威廉晏打臣公司

# 美國鋼鐵公司

上海黃浦灘第四號

電碼 Steelyard Shanghai




此圖表明本公司所造各種鐵軌及繫結鋼條輕便而且堅固

鋼鐵各物取其堅固尤取其靈活
非徒以笨重爲可貴也本公司所
造各種鐵道及機器等件并鍋爐
上應用之各式繫結鋼條既稱堅
固復能靈活久爲全球所推許玆
將自製鋼鐵諸品節錄於左

鐵軌　接軌鋼條　鋼節　鋼釘
鋼板　建築所用鐵柱　鐵條
鐵板　鐵管　各式角板　火
車電車車輪　鑛穴中或油井內
所用一切鋼鐵機器　各式輪軸
橋梗鎔鐵爐以及各種鐵甲板
以上所述特其大略其餘名目繁
多不及備載　惠顧諸君請移玉
至本公司面議可也

United States Steel Products Company

# 新旗昌洋行

本行佈設英京神戶廣州香港上海天津紐約等處專辦出入口貨代理船務及抽佣經理人

香港書信箱號數第壹百三十一號卑字
上海郵政局信箱第八十四號
各枝行掛號電報碼用旗昌二字

## 本行總司理各公司列下

● 非律賓輪船有限公司
● 維新織造有限公司
● 廣州省城置地有限公司
● 永安人壽保險有限公司
● 中呂輪船有限公司
● 勢力電燈有限公司
● 青洲英坭有限公司
● 香港麻纜織造有限公司
● 均益按揭有限公司

## 代理各公司列下

● 厘拉仁士洋面保險有限公司
● 大洋海面保險有限公司
● 泗水海及火燭保險有限公司
● 英北及商務保險公司
● 羅天仁保險有限公司
● 煜舍燕梳有限公司
● 北美燕梳公司
● 上洋軟藥及紙料有限公司
● 美亞輪船公司
● 美滿航務公司
● 祁連航務有限公司
● 香港電車有限公司
● 楊子燕梳有限公司
● 地球洋面保險有限公司
● 大洋意外保險有限公司

## 上海英商新旗昌洋行機器處廣告

本行樓子房現設江西路六號電話三四八七號

本行經理各種機器如紡織碾米榨油磨麵造紙開礦墾荒抽水挖坭大小火輪全副引擎鍋爐及火車頭客車貨車鐵路材料並自來水一切物件其餘鋸木車鑽刨床各式大小引擎鍋爐及磨電機發動機煤氣引擎發煤氣機以及得律風電燈電氣應用一切另件等具色色俱全均係外洋著名廠家特別精造新式玲瓏堅固但各項名目繁多未便盡載倘承賜顧或蒙函詢當即竭誠詳細奉答價亦格外克己以廣招徠尚祈惠臨方知言之不虛也

## 在中國全權代表各公司列下

減隨路城火車工廠
澳地士依里威滔公司
波路深孖汽喉公司
拋亞瓦斯合股有限公司
拋亞不厘有限公司
李孖普鐵廠
倫深未禪及制花利有限公司
盧爹士麼滔有限公司
船主琴實使順有限公司
所利雲機器公司
爲拉列地有限公司
華臣製造公司
和蛙連毛滔工廠
裝鐵路燈工廠
壓活公司
占士科士打有限公司
占士捷邊士公司
立可父子公司
可夫文製造公司
贊鶴建臣父子有限公司
耳昔則臣父子有限公司
精建兄弟有限公司
奇布尼及則給士製造公司
廉孖車頭及機器公司
文寧麥士謂及摩公司
妙千斤塵不壓其滔公司
美國布魯亞公司
美國鋼線公司
大英靴路士比電線纜有限公司
班尼士製造公司
比厘路公司
表花盧不歷鞭公司
表花盧士派士厘公司
布律端父子公司
插父子鎖鑰與銀箱有限公司
地吐律滔路公司
的有限公司
贊的建臣公司
胡路扶公司

Shewan, Tomes & Company

# 美國鋼鐵公司

United States Steel Products Co.

本公司自剏設以來歷有年所所售各種鋼鐵品久蒙交口稱譽無煩瑣述惟近來實業發達各物之需用鋼鐵者或大或小品類甚夥苟祇備其重大者而將各式細小者付之缺如則必不能應購者之用本公司花樣繁多大而至於軌輪機軸小而至於日用雜物之微凡屬鋼鐵品無不色色俱全以備 貴客隨意購用至貨物之精良價目之低廉尤爲得未曾有 賜顧者幸垂鑒焉此佈

## 鋼鐵軌

自最重之火車軌至各種輕便鐵道及開礦運木或電車等所用

## 建築品

鋼節鐵槽角鐵鐵鍋鋼板鐵板礦中或油井內所用鋼鐵物件以及各種車輪

## 輪軸

火車汽機及電車等所用

## 翻沙機

機器及各種附屬品

## 鐵箍及鐵皮

用以箍桶束棉花捆羊毛或皮包等物

## 鋼板

用以造船造汽鍋水鍋等件者

## 馬口鐵

可製各式雜用物或鍋爐等件

其餘如馬脚鐵銅絲生鐵硬煤烟煤等名目繁多不及備載

上海黃浦灘第四號 電碼 "Steelyard" Shanghai

# 美國派愛而車頭電燈公司告白

Pyle-National Electric Headlight Co.

## 下圖表明用二萬二千支光派愛而車頭電燈之功用

此圖的係攝自美國鐵路車站其攝影之地點相去

車頭有半英里之遙足徵派愛而燈之功用非小

派愛而燈能發有力明亮之光可使車頭司機者之視線能達半里之外且使其能瞭視一切可避危機派愛而燈之功用上已略言之矣總之人咸樂用此種燈因知其無美不臻也

# 西方電氣公司廣告

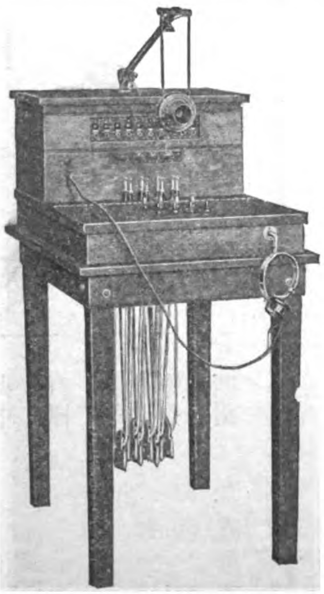
The Western Electric Co.

第一三一七號磁氣發電機德律風

若欲研究貴處德律風機器是否傳聲清淅必須先看所用之各種器俱有否　活司得商標之牌號是否爲本公司所完全製造者本公司所製電氣器俱完美可靠全球馳名且爲世界最老最大之製造各種電氣器俱之製造廠

且德律各種機件亦爲本公司製造物品之一小自私家之德律風起大而至大城內全體之德律風如配電石板裝德律風家所用之配件防護俱線纜線件手器隔電俱等物件

中國經理處上海西方電氣公司
小呂宋經理處愛令加格令加洋行
日本經理東京日本電氣公司



第一八〇〇號分段配電石板

"SAVE TIME AND FREIGHT"
"TELEPHONE OUR NEAREST HOUSE."

EVERY "BELL" TELEPHONE IS A WESTERN ELECTRIC TELEPHONE

# 正太鐵路客車時刻表

The Cheng-Tai Railway

## 上行各車

| 站名 | 價目 頭等 元 | 頭等 角 | 二等 元 | 二等 角 | 三等 元 | 三等 角 | 慢車 開 點 | 慢車 開 分 | 客貨車 開 點 | 客貨車 開 分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 石家莊 | | | | | | | 七 | 〇三 | 七 | 三十 |
| 大郭村 | | 五 | | 三 | | 二 | 七 | 十六 | 七 | 四五 |
| 獲鹿縣 | | 九 | | 五 | | 三 | 七 | 三二 | 八 | 〇三 |
| 頭泉 | 一 | 二 | | 七 | | 四 | 七 | 五一 | 八 | 二三 |
| 白王莊 | 一 | 五 | | 八 | | 五 | 八 | 十一 | 八 | 四六 |
| 五里舖 | 一 | 七 | 一 | | | 六 | 八 | 二一 | 八 | 五八 |
| 微水 | 二 | 一 | 一 | 一 | | 七 | 八 | 三六 | 九 | 十五 |
| 南橫門 | 二 | 三 | 一 | 三 | | 八 | 八 | 四九 | 九 | 二九 |
| 南張村 | 二 | 五 | 一 | 四 | | 九 | 九 | 〇二 | 九 | 四三 |
| 井陘縣 | 二 | 八 | 一 | 五 | 一 | | 九 | 二五 | 十 | 十五 |
| 北峪 | 三 | 一 | 一 | 七 | 一 | 一 | 九 | 三六 | 十 | 四一 |
| 南峪 | 三 | 三 | 一 | 八 | 一 | 一 | 九 | 四七 | 十 | 五一 |
| 娘子關 | 三 | 六 | 二 | | 一 | 二 | 十 | 十八 | 十一 | 十七 |
| 程家隴底 | 四 | | 二 | 二 | 一 | 四 | 十 | 三四 | 十一 | 三四 |
| 下盤石 | 四 | 五 | 二 | 四 | 一 | 五 | 十 | 五十 | 十一 | 五二 |
| 巖會 | 四 | 八 | 二 | 六 | 一 | 六 | 十一 | 〇四 | 十二 | 十四 |
| 亂流 | 五 | 三 | 二 | 九 | 一 | 八 | 十一 | 二四 | 十二 | 三六 |
| 白羊墅 | 五 | 六 | 三 | 一 | 一 | 九 | 十一 | 三八 | 十二 | 五二 |
| 陽泉 | 五 | 八 | 三 | 二 | 二 | | 十二 | 三七 | 十三 | 二十 |
| 賽魚 | 六 | 二 | 三 | 四 | 二 | 一 | 十二 | 五三 | 十三 | 三七 |
| 坡頭 | 六 | 五 | 三 | 六 | 二 | 二 | 十三 | 〇九 | 十三 | 五四 |
| 測石驛 | 六 | 八 | 三 | 七 | 二 | 三 | 十三 | 三二 | 十四 | 十六 |
| 芹泉 | 七 | 三 | 四 | | 二 | 五 | 十三 | 五六 | 十四 | 四十 |
| 壽陽縣 | 七 | 八 | 四 | 二 | 二 | 六 | 十四 | 十九 | 十五 | 十三 |
| 郭家村 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 三二 | 十五 | 二九 |
| 上湖 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 四七 | 十五 | 四六 |
| 盧家莊 | 九 | | 四 | 九 | 三 | | 十五 | 〇三 | 十六 | 十 |
| 段廷 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 十八 | 十六 | 二七 |
| 東趙村 | 九 | 八 | 五 | 三 | 三 | 三 | 十五 | 三四 | 十六 | 四六 |
| 北合流 | 十 | 二 | 五 | 五 | 三 | 四 | 十五 | 四七 | 十七 | 〇三 |
| 榆次縣 | 十 | 五 | 五 | 七 | 三 | 五 | 十六 | 〇九 | 十七 | 三三 |
| 鳴李 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二一 | 十七 | 四七 |
| 北營 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 三三 | 十八 | 〇一 |
| 太原府 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 四五 | 十八到 | 十五 |

## 下行各車

| 站名 | 價目 頭等 元 | 頭等 角 | 二等 元 | 二等 角 | 三等 元 | 三等 角 | 慢車 開 點 | 慢車 開 分 | 客貨車 開 點 | 客貨車 開 分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 太原府 | | | | | | | 七 | 五三 | 八 | 〇六 |
| 北營 | | 五 | | 三 | | 二 | 八 | 〇七 | 八 | 二一 |
| 鳴李 | | 八 | | 五 | | 三 | 八 | 十九 | 八 | 五四 |
| 榆次縣 | 一 | 二 | | 七 | | 四 | 八 | 四五 | 八 | 五九 |
| 北合流 | 一 | 六 | | 九 | | 六 | 八 | 五九 | 九 | 十四 |
| 東趙村 | 二 | | 一 | 一 | | 七 | 九 | 十三 | 九 | 二九 |
| 段廷 | 二 | 四 | 一 | 三 | | 八 | 九 | 二九 | 九 | 四七 |
| 盧家莊 | 二 | 八 | 一 | 五 | 一 | | 九 | 四五 | 十 | 〇七 |
| 上湖 | 三 | 二 | 一 | 八 | 一 | 一 | 十 | 〇三 | 十 | 二六 |
| 郭家村 | 三 | 六 | 二 | | 一 | 二 | 十 | 十九 | 十 | 四三 |
| 壽陽縣 | 四 | | 二 | 二 | 一 | 四 | 十 | 三七 | 十一 | 〇七 |
| 芹泉 | 四 | 四 | 二 | 四 | 一 | 五 | 十 | 五三 | 十一 | 二四 |
| 測石驛 | 四 | 九 | 二 | 七 | 一 | 七 | 十一 | 十三 | 十一 | 四七 |
| 坡頭 | 五 | 二 | 二 | 八 | 一 | 八 | 十一 | 二五 | 十二 | 〇一 |
| 賽魚 | 五 | 六 | 三 | | 一 | 九 | 十一 | 三八 | 十二 | 十九 |
| 陽泉 | 五 | 九 | 三 | 二 | 二 | | 十二 | 三九 | 十三 | 三五 |
| 白羊墅 | 六 | 一 | 三 | 三 | 二 | 一 | 十二 | 五〇 | 十三 | 五一 |
| 亂流 | 六 | 四 | 三 | 五 | 二 | 二 | 十三 | 〇四 | 十四 | 〇八 |
| 巖會 | 七 | | 三 | 八 | 二 | 四 | 十三 | 二四 | 十四 | 三七 |
| 下盤石 | 七 | 三 | 四 | | 二 | 五 | 十三 | 四十 | 十四 | 五三 |
| 程家隴底 | 七 | 七 | 四 | 二 | 二 | 六 | 十三 | 五七 | 十五 | 十二 |
| 娘子關 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 十七 | 十五 | 四五 |
| 南峪 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 三三 | 十六 | 〇一 |
| 北峪 | 八 | 七 | 四 | 七 | 二 | 九 | 十四 | 四二 | 十六 | 十二 |
| 井陘縣 | 九 | | 四 | 九 | 三 | | 十四 | 五八 | 十六 | 五五 |
| 南張村 | 九 | 二 | 五 | | 三 | 一 | 十五 | 十 | 十七 | 〇九 |
| 南橫門 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 二一 | 十七 | 二一 |
| 微水 | 九 | 七 | 五 | 三 | 三 | 二 | 十五 | 三三 | 十七 | 三五 |
| 五里舖 | 十 | | 五 | 四 | 三 | 四 | 十五 | 四九 | 十七 | 五五 |
| 白王莊 | 十 | 二 | 五 | 六 | 三 | 四 | 十五 | 五八 | 十八 | 〇六 |
| 頭泉 | 十 | 六 | 五 | 七 | 三 | 六 | 十六 | 十三 | 十八 | 二三 |
| 獲鹿縣 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二八 | 十八 | 五七 |
| 大郭村 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 四十 | 十八 | 五七 |
| 石家莊 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 五一 | 十九到 | 〇十 |


# 美國鋼鐵出產公司廣告

本公司所出鍍鋅彈簧鐵釘久爲光顧諸君所歡迎蓋以之釘屋頂實較勝於螺釘螺蓋螺圈也且價格又廉此四面之釘圖卽本公司之出品長二吋四分之一諸君若購用之則屋頂不滲漏貨物不致損壞且省修理費若欲購者請向上海江西路愛字二十四號門牌可也

THE UNITED STATES STEEL PRODUCTS COMPANY.

# 英國康模造車公司

Commercial Cars, Ltd., Luton, England

格言曰觀運輸機關之隆替足覘以國家之盛衰本公司專造工藝界及公家所用車輛工料堅實精良無比取價低廉如貨車灑水車救火車客車等均可

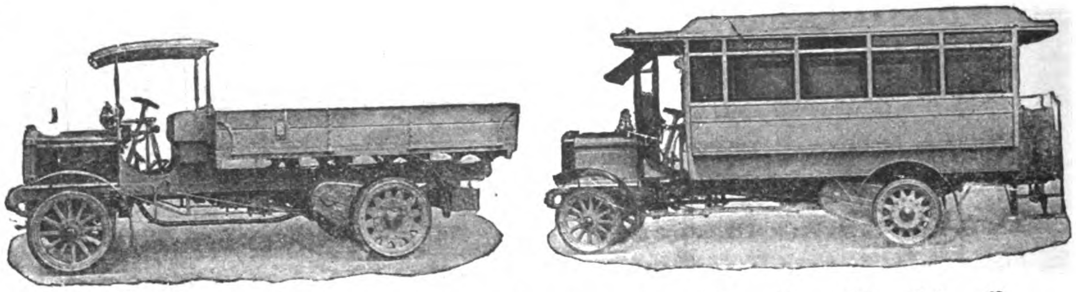
康模牌

"COMMER" CAR.

REG. TRADE MARK.

車輛

按式定造必能合意所裝油機燃燒煤油或汽油在東方應用最爲便適本公司總廠在英國勒頓城內英國康模造車公司謹啟



此種車輛裝有汽油機大小分爲十四號載重一噸至七噸載客十位至三十四位機器有二十至一百馬力

## 勒特烏文公司

Owen Bros.

ROSPHALTIC

REGD. NO. 336682

羅司法鐵漆敷於鋼絲鐵柱之上能永免鐵銹濕氣電氣均不能侵入天氣寒暑隨鐵漲縮此油質地純淨永保無患

勒特烏文公司

總行在英國黑耳城

上海怡和洋行總理

## 曲模脫製造公司

Trimont Manufacturing Co.

曲模牌螺旋管鉗早經爲使用者所歡迎今又發明新件名護螺具加於鉗上其大小不同爲鋼質所造不易損壞

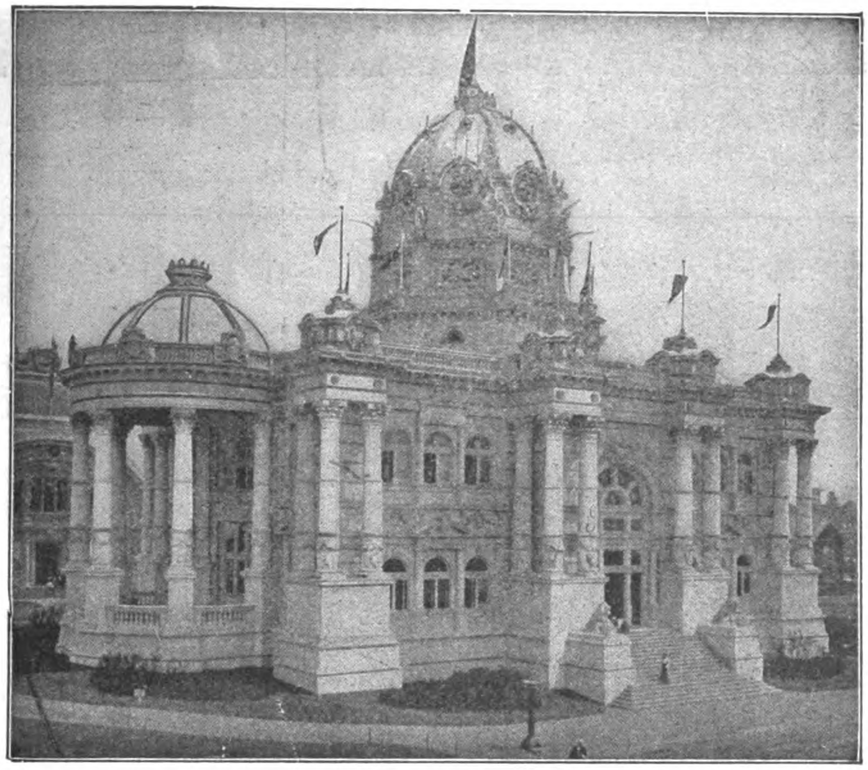
護螺蛳具之功効能使螺蛳運動工作時不致受意外之不測且能使所用之器具有百分中之二十五分之效用

曲模螺旋管鉗備有木柄者其大小有六寸八寸十寸十四寸共四種備有鋼柄者其大小自六寸至四十八寸

曲模螺旋管鉗內之各附屬物均可互換調用柄中所用之齒若用壞可更換新製之齒使鉗仍可保用

若欲知詳細請來函索取本公司之第二百二十三號目錄書可也

本公司開設鮑思頓勞克司白來



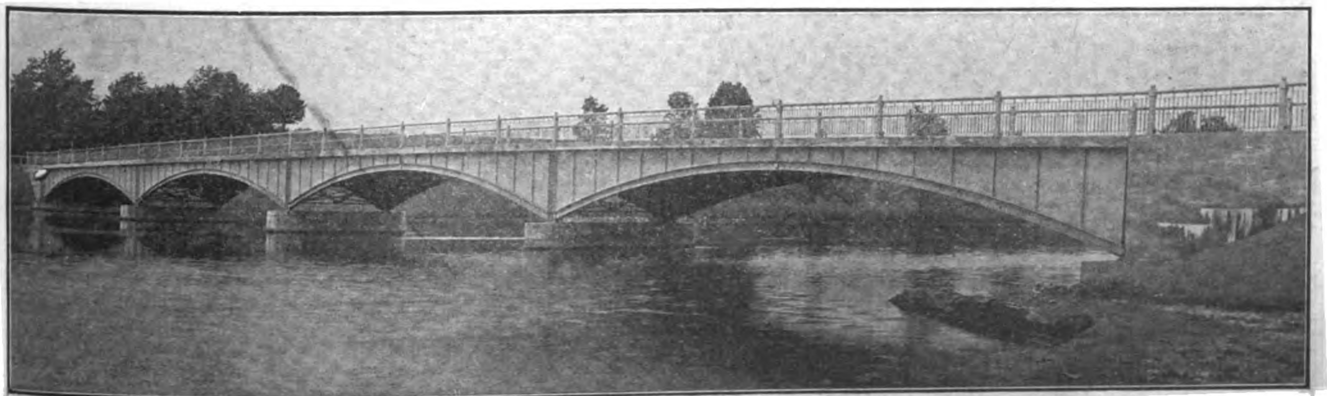
此爲巴蘭夢羅和平宮其工程之堅固久爲世界所稱譽然建築時需用鋼鐵至四百餘噸之鉅皆本公司所供給特攝之以供賞鑒

# 美國鋼鐵公司

經理處 上海黃浦灘第四號

電碼 "Steelyard." Shanghai

本公司專辦各種建築鋼鐵品並包造鐵橋鐵房自來水煤氣塔及各種鐵管等物無不全備



此爲美國牛查西省克那基湖哈爾門橋橋共四彎每距九百二十四寸約重二十七萬一千餘噸計用鋼鐵甚夥均屬本公司之出品

United States Steel Products Company

# 慎昌洋行廣告

Anderson, Meyer & Co., Ltd.

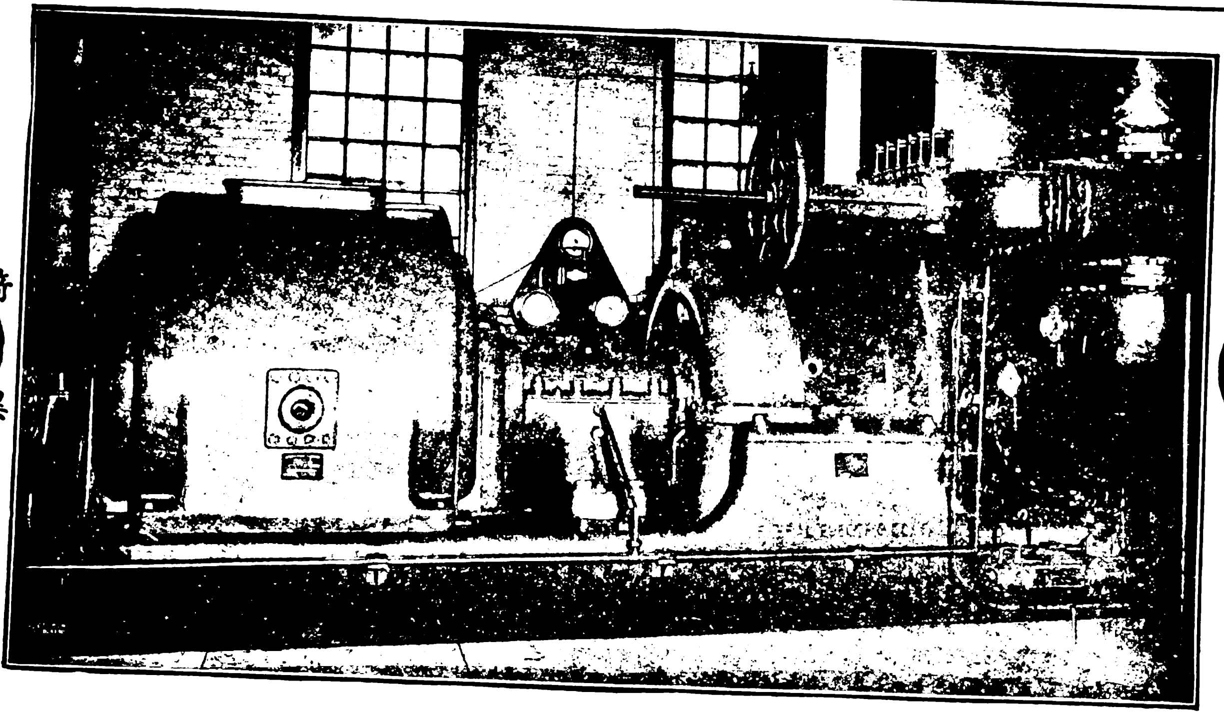
本行設立已久遐邇馳名專辦歐美各國名廠各種機器所有電燈全廠機器及各項電機電話火車鐵路鋼軸鋼鐵各軌各式車牀刨床測量繪圖儀器並各種汽油機器等件無不俱全所有本行經理之　美國愛特生電汽總公司　英國湯浦電機公司　浦特製造火車公司　漢司火車燈公司　施端林電話公司　范落汽油行船機器廠

右孚亞士工程儀器廠　鄧特摩阿車刨機器廠

馬士維爾石棉廠等均係環球著名各大廠中外馳名凡賜顧者均知各名廠機器之完善美備也　諸君欲知詳細請移玉至上海圓明園路四號

中國經售處上海慎昌洋行

奇異商標



美國紐約**普通**又名**奇異電汽總公司**爲環球獨步世界第一之電汽製造廠與英國著名**湯輔公司**係屬聯號性質近年新發明一種**透頻汽機** 係與磨電機直接相連而用便利異常且自七啓羅滑脫推至二萬啓羅滑脫其汽機之工料無不堅固精良而用煤亦省使用極靈即裝置機件亦能省佔地位誠現今電廠**惟一無二之電機也**此機發明後各國爭相購用僉謂較舊式之電機其使用之利鈍相去殆不可以道里計**又新造一種光明省電之曼士達拉絲燈泡** 此燈泡乃本廠獨家創造係以數十年之電學經驗參照美國國家頒定規程研究製造而成故質地既極精良燃點尤能經久發行以後風行全球因其能省電力而光線之足備反出各種新式電燈之上因之銷路日廣愈推愈遠洵爲**電燈泡中之魁首**又**奇異商標各種電氣風扇** 省電多風用久無炙手諸患可免一切危險**又電話機器** 式樣玲瓏裝置簡便內地躉購且可代爲裝置餘如各種電燈全廠電機家常裝用之電汽器具並礦機鑽石機升降起重各機轉滾提鍊電機傳電器電汽船大小各廠應用之電機幫浦潔淨機貯水所發電機避電測電等機泉水發光機以及各種海陸軍用電光照遠燈電扇轉動等機凡屬於電汽各項大小機件及各樣附屬之件無不完全齊備 賜顧諸君欲知詳細請 駕臨**上海圓明園路**四號本行寫字間接洽無任歡迎此佈

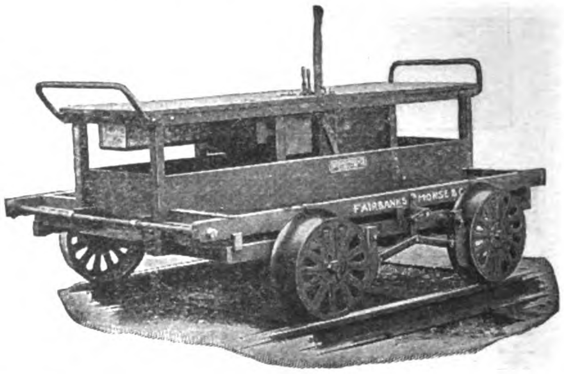
**中國經理處上海愼昌洋行**

General Electric Company

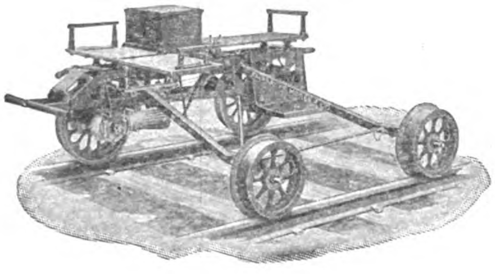
# 美國反白司鐵道汽車

站工監督修路工頭及扯號旗人所用該車造法極爲簡便用法甚易穩而且快如用載客及載官場此車式樣甚多大小不一

請查目錄第九百五十六目頭FY



# 鐵道材料



油引擎汽力及電力抽水器電燈器運卸煤斤機器轉盤及吊橋機器手車推車及一切應用材料無不完備

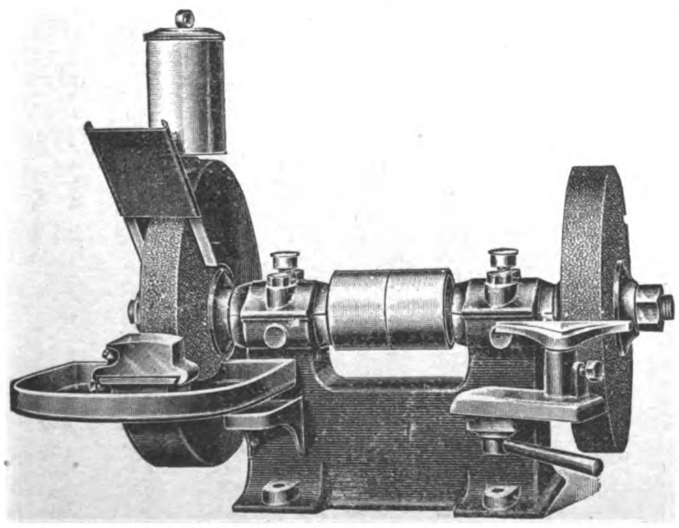
請查目錄第九百五十六目頭GB

中國經理處 上海信亭機器公司 香港天祥洋行

Fairbanks-Morse Railway Motor Cars

# 倫敦愛茂來工廠有限公司廣告

The London Emery Works Co., Ltd.



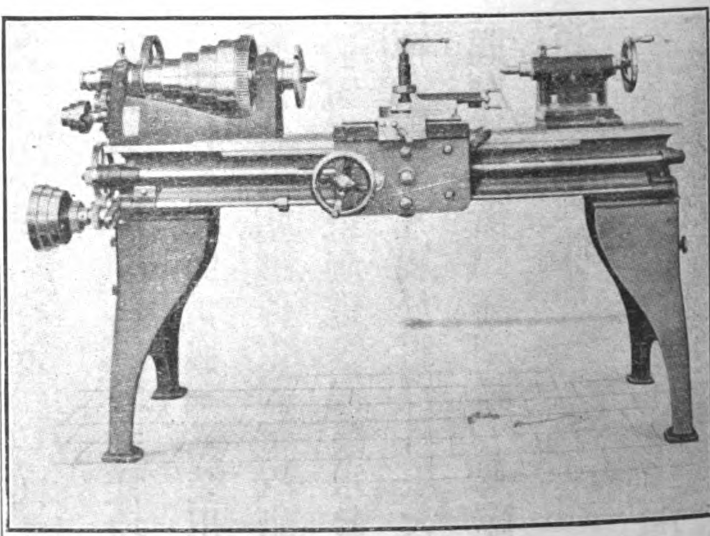
此圖爲雙頭愛茂來櫈式磨機其全體均爲生鐵所製軟鋼磨心直徑一寸其軸枕均爲白色金屬類磨心傍有緊鬆之滑車排於左者可磨潮濕之物因配有水槽碗架蓋頭及墜俱右邊則配有普通磨件尙有最好質地之地球牌愛茂來輪盤兩俱大十二吋厚一吋半

此項磨機亦可大十四吋厚二吋及大十六吋厚二吋之輪盤

若欲知圖樣或說明書可來函索取

工廠開設英京倫敦士丁南英雄工廠

# 用電氣以節耗費



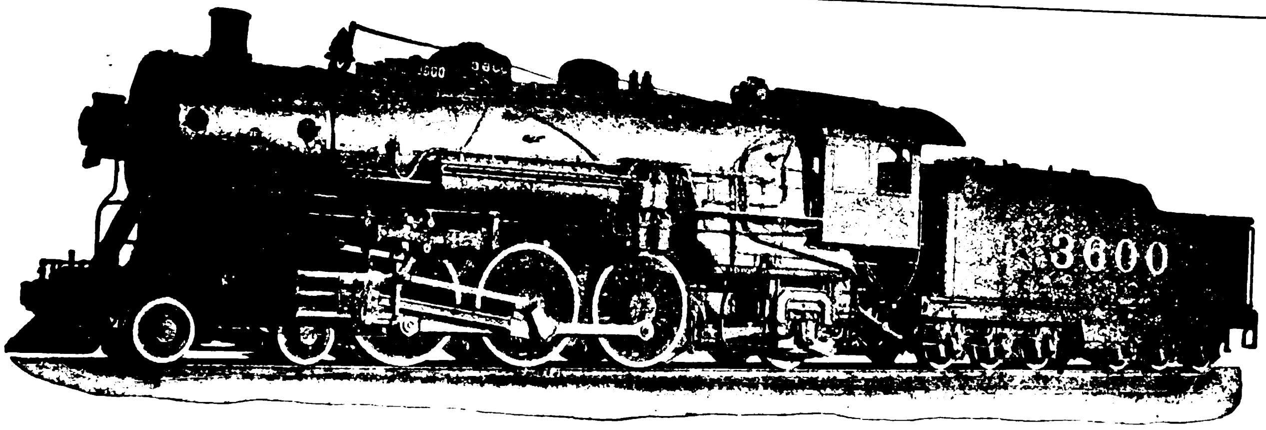
電氣一物利用甚溥用以裝修各項機器非特工作較人力爲速而耗費亦可節省因其出貨多而成事易也凡各機器廠欲裝置電氣馬托或鑽頭磨刀機無論活動與否均可使之流利活潑所需電力或交流或直流及電鎊之多寡均當隨意裝配賜顧諸君幸垂鑒焉

德國蜀赫廠啓

Schuchardt & Schütte

# 巴爾威機器車頭廠

The Baldwin Locomotive Works




愛克生討庇格散打非各鐵路之太平式車頭

美國搭客之快車中其大半皆有本廠之太平式(四一六一二)機器車頭所拖帶此項車頭機器能載重力拖帶重車因機器內包函之力足使速率按時增高也

汽筩長二十六吋闊二十六吋　主動輪直徑七十三吋

汽機壓力二百磅　火爐佔地六十六另十分之七方呎

熱水面積四千四百四十三方呎　加重熱水面積九百八十方呎

主動輪重十七萬二千五百五十磅　機器共重二十八萬八千七百磅　拖力四千一百磅

太平式之機器車頭爲愛克生討庇格散打非鐵路所有爲近世最新式之機器見上圖

此條鐵路爲乘客最多故車行之次數亦多辦法亦妥善

此車頭用油爐特意擴充其極大之力每邊之主動輪之重限五萬八千磅

此項機器已爲本廠帶往巴拿馬萬國賽會場之物件中之一

中國經理 上海 北京 張家口 天津 香港 漢口 愼昌洋行

日本經理東京舍爾法辣薩有限公司

# 美國鋼鐵公司

上海黃浦灘第四號　電碼 'Steelyard' Shanghai

## 專運美國鐵管公司各種物品

並製各式鋼鐵自來水自來火蒸汽等氣管

大小自八分之一至三十寸

隨意配合無不適用

## 汽鍋上應用之鋼管

質料或剛或柔式樣或大或小尺寸或長或短

各式井內所用管子

## 無縫煤氣管或煤油鐵管

其重量能抵三千七百磅壓力

用於各種大壓力煤氣氣空氣亞馬尼亞及炭氣等物最爲合宜

## 空心鐵柱

用以建築電車軌道電桿德律風桿及各種電氣柱枝

其外尚有各項工程應用之鋼鐵管子

及自來火自來水龍頭等件一應俱全

United States Steel Products Company

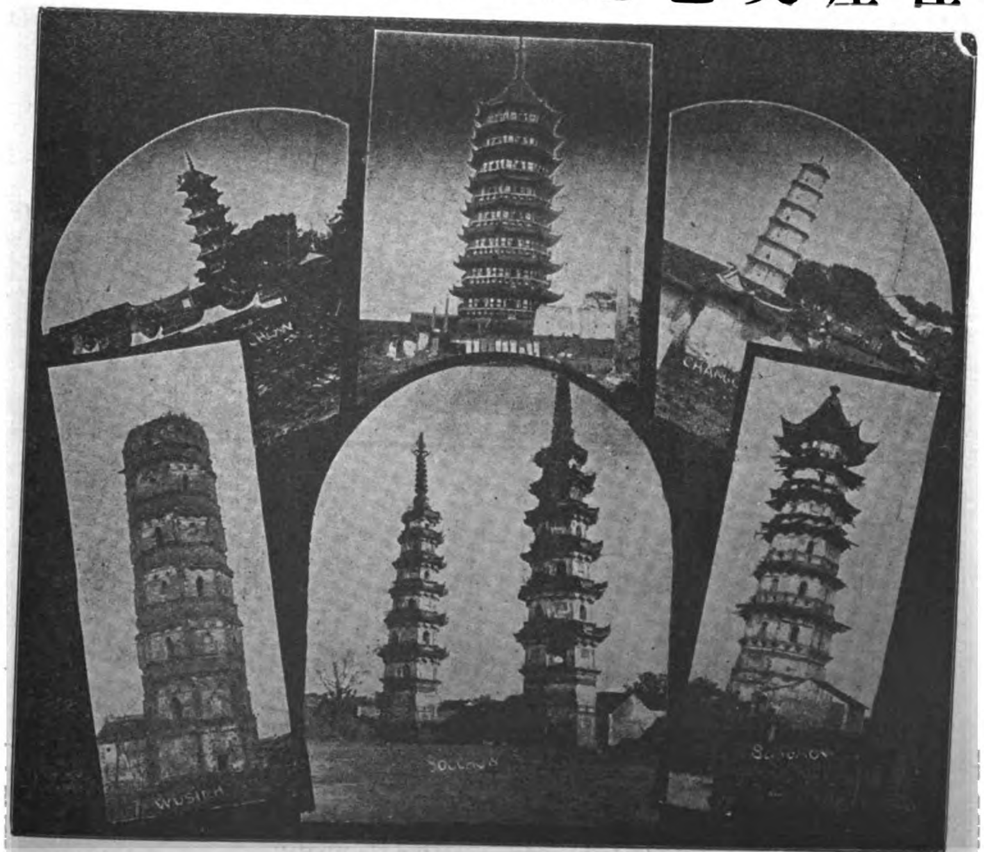
# 滬寧鐵路廣告

Shanghai-Nanking Railway

啓者本路工程均照歐西頭等鐵路最新款式建築軌道堅固車行穩捷往來時刻必依規定各站之候車客房停車月臺不但地方寬敞布置亦極周密往來搭客無擁擠窒塞之虞各等客車座位舒暢氣候咸宜頭二等之車尤爲美麗無匹電燈電鈴電扇厠所盥室色色完備並有餐車隨行以備搭客不時之需西膳茶點酒水俱全價廉物潔衛生合宜每晚加走夜車以便行人睡臥車上設有床位備客休息至淞滬一段之設施亦與幹路無異各站及車上之員司夫役招待搭客處處周到運貨亦甚穩速凡於交通上有益者無不日事改良以臻完備久蒙各界所贊譽倘承

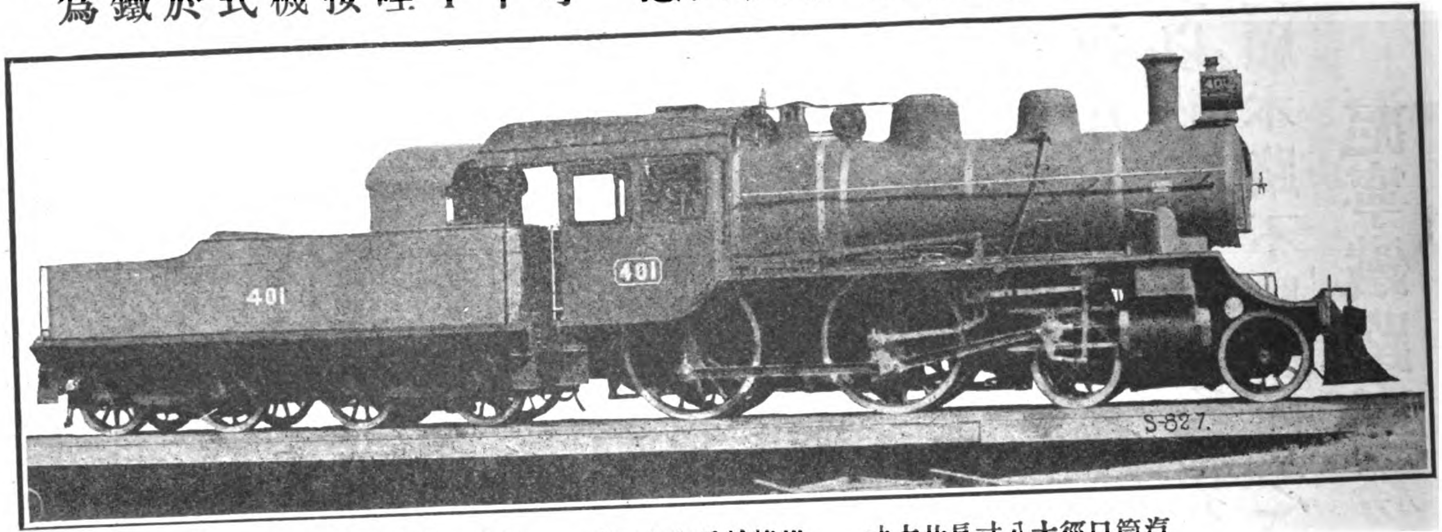
光顧本路不勝歡迎之至

滬寧鐵路車務總管敬啟



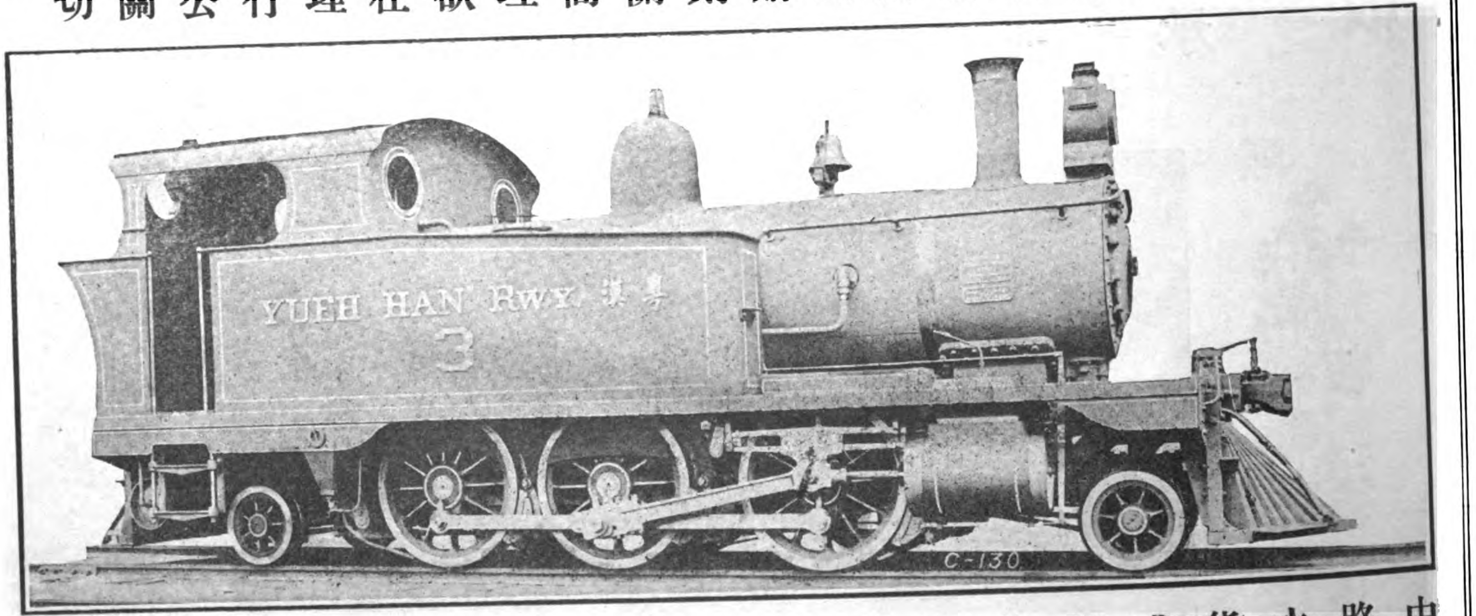
# 美國製造火車公司之火車極合用於中國鐵道

美國所製造之八輪火車頭即近時朝鮮鐵道所用之八輪火車頭甚為合用已著明效拖客車至六輛或八輛其速力計一點鐘可駛二十至四十五英哩之遙按此種機關車式樣用於中國鐵道尤為適宜




汽筒口徑十八寸長廿六寸　推挽輪長七十二寸　拖力一萬七千九百磅

火車頭之製造也在購辦者無不以最新式最適用為貴而製造家亦必以最新式最適用者求合於購辦者之心為能達其目的夫果欲合購辦者之心則必須經機關師之幾番商榷始可辦理如　貴客欲與本公司在中國之經理處三井洋行面商則本公司當派機關師就商一切概不需費




中國粵漢鐵路之六輪雙水櫃車拖帶貨車或客車或貨車客車連帶之列車其速力與上圖記八輪車頭快慢有異者因此車速力較小拖帶列車之數遂少但前後有兩小輪可無旋轉機而能進退自如故駛行之時便捷多矣其特別出色之處即在此兩小輪也

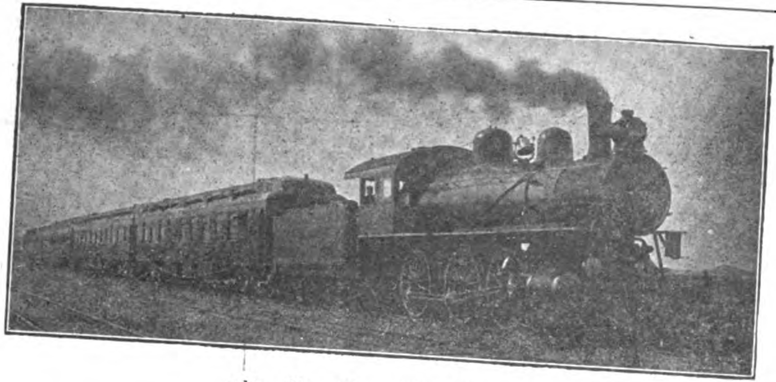
在中國經理處三井洋行上海天津廣東漢口香港廈門盛京

本公司在美京紐約禮拜堂街三十號　電碼

Locomotive New York
Annual Capacity; 3500 Locomotive.

American Locomotive Company

上海倫敦間 十三天半
東京倫敦間 十三天四分之一
東京北京間 三天半
大連莫斯科間 八天四分之三



南滿鐵路快車

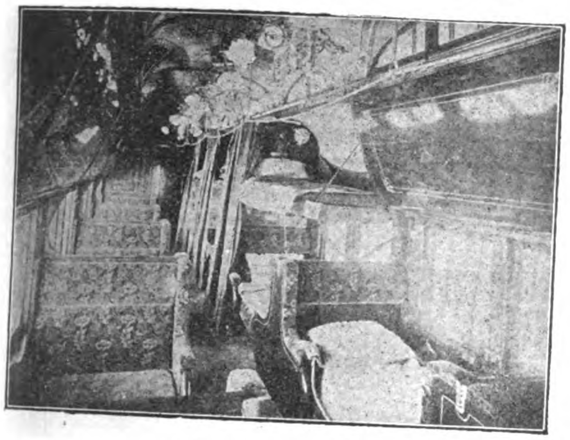
東亞歐洲間最短最捷最廉路線

South Manchuria Railway Company, Dairen

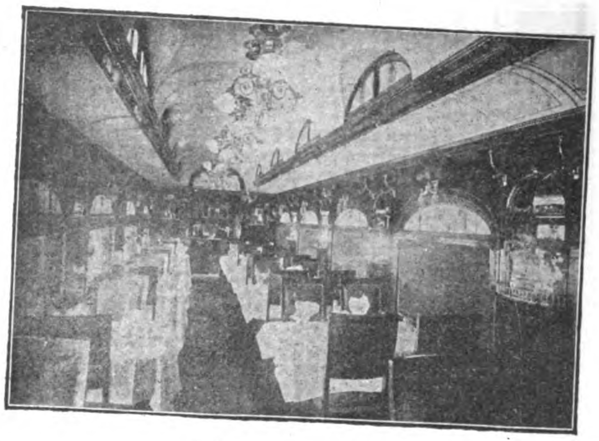
# 南滿鐵路

每星期開駛三次快車

本快車預備完善床車膳車並頭等客車運行大連長春間以便聯絡西伯利亞路線並上海航路



床車



膳車

奉天聯絡須知　凡此等快車在奉天與京奉鐵路聯絡並與新修滿韓路線長春釜山間每星期三次快車聯絡日本歐洲間旅程比舊短減兩天航程亦大就減縮

大連聯絡航路須知　凡自大連到門司神戶仁川天津芝罘青島及其他日華兩國各埠亦均有定期開行輪船彼此按日往來

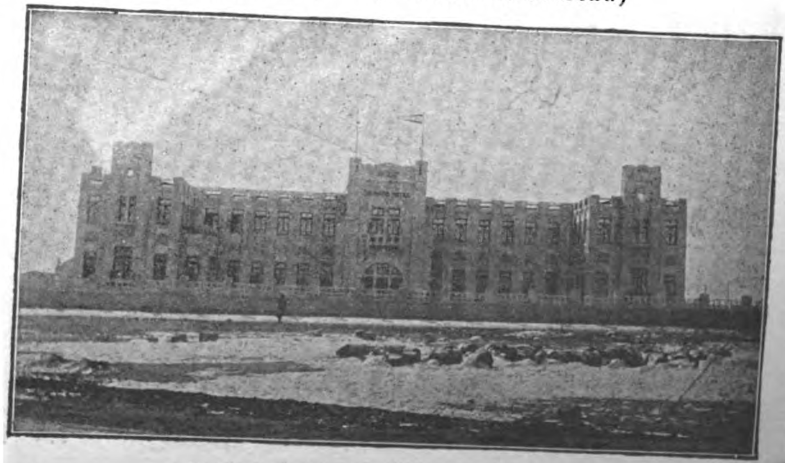
南滿鐵路公司開辦大連星浦雅麻多旅館

**南滿鐵路公司開辦旅館**　本公司在大連旅順奉天長春星浦等處開辦旅館均依西式調度完美無所不罄星浦距大連五英里爲北部瀕海地方唯一勝區開設旅館之外并添設許多平房雅潔瀟洒點在園中海山環繞風光明媚租價務從公道以應遊客貴需

**歐亞各地代售車票處**　本公司車船各票均在後開各處代售
萬國快車床車有限公司 (The International Sleeping Car & Express Trains Co.)
德瑪司庫克公司 (Messrs. Thos. Cook & Son.)
日本郵船會社上海分行
漢堡美國航路辦理旅客事務處 (Reisebureau der Hamburg-Amerika Linie)
挪的斯克辦理旅客事務處 (Nordisk Resebureau)

本鐵路時刻車脚表沿線便覽以及各項報告若有要需一俟知告本公司運輸科即當寄呈

南滿鐵路公司開辦長春雅麻多旅館



南滿鐵路公司開辦奉天雅麻多旅館

# 滿洲大連南滿鐵路公司

李伯賀氏字碼書

## 福祿氏磨機廠

The Fuller-Lehigh Pulverizer Mill.

陳立所中所陳立之機器不下四千架而福祿氏磨機實首屈一指且價廉而又能磨不易磨之各物品　如白煤　石綿石　瀝青砧　硫酸重土　炮克石脫　烟煤　骨煤　炭精　水門汀石　水門汀磚　粉墨炭　金苗　黃泥　煤炭　焦炭　銅苗　白雲石　肉色之石　燒過之黃泥　粉泥石　鑄鐵板面　福祿氏土　玻璃　金石英　黑鉛　石膏　海持來石灰　鐵苗　磁土　鎔巖　石灰　石灰石　砂石　磁鐵石　大理石　赭石　礦苗　螺蛳　漆　燐石　膏　巴得蘭水門汀　拍特立耳礦滓　石英　壳　硅酸　礦滓　石板　雲母石　屈破立　大小砂石　赭鐵礦　皓金　淨白粉

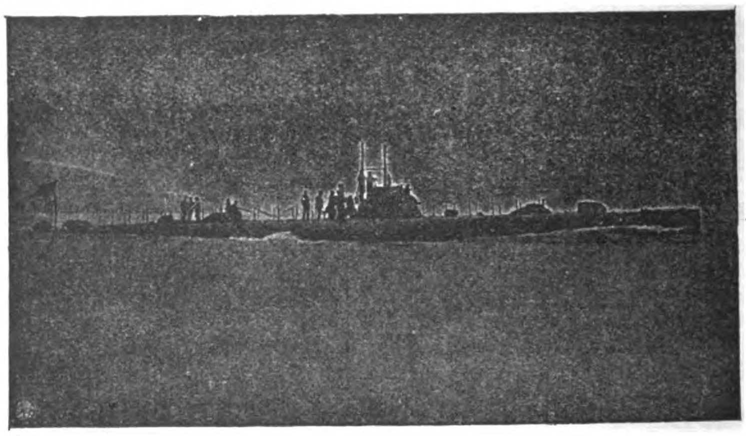
諸君若欲以磨成之煤生爐請查本廠所積之粉煤　用本廠所製展轆壓之用本廠之火轉乾機乾燥之用本廠之磨而粉磨之若承各界光顧請來函索說明書爲禱

本廠所出福祿氏牌機器如
絞縺　輓輪　齒輪　磨管
砌襯　壓機　磨機
工廠修理以及特式之鑄品均可代辦請閱第五十號目錄可來信索取

萊哈車子車輪車軸工廠白



## 飛愛山喬其哇有限公司出售海軍戰利品廣告



頭等淹沒魚雷艇
水雷坑道
炸藥隧道　消滅敵人水雷之用
形如浮桶之水面炸擊器
海底防範各種之軍械
各種電力發動之快行汽艇

Fiat-San Giorgio, Ltd., Spezia (Italy)



## 日本
## 長崎
## 三菱造船廠

| | |
|---|---|
| 主要製作品 | 郵客旅貨便物石油槽汽船達頻汽船快遊船各種兵船各種汽機汽鑵及電氣機械 |
| 特許製作品 | 巴遜斯式達頻同式發電機斯董式滿嘎黃銅公杜拉普羅冷汽機威耶式抽水抽氣各機暨爾特抽氣機 |
| 海難救助船 | 大浦丸(七百拾六噸) |
| 船渠及船架 | 乾船渠叄基船架壹基而第叄乾船渠係蘇士以東最大者 |
| 工場地基及職工數 | 拾叄萬玖千坪壹萬餘名 |

Mitsu Bishi Dockyard & Eng. Works

## 大愛門車鏈製造公司廣告

Diamond Chain & Mfg. Co.

本公司專造各式車鏈如脚踏車氣車自動車馬達貨車以及傳力之各種車鏈均爲鋼質造成且爲頭等貨物業已二十五寒暑公認大愛門(譯金鋼鑽鏈)鏈爲各鏈之泰斗本公司所出之貨物質地堅實應用耐久且製造合度若接定單後卽可運輸不論用何種國文字通信均可若欲索樣本目錄或價目表者請來函詢問可也

本公司開設美國印第安省印第安波利斯城

## 美國尼馬司公司廣告

E. I. du Pont de Nemours & Company.

本公司爲全球最大之製造炸藥公司專製炸藥轟炸膠及開煤礦用之安全火藥轟炸火藥響墩電氣響以電氣轟炸各種機器已有百年之久素爲全球所公認推爲本公司所製者爲首屈一指

且所製之火藥均包裹妥貼以便運往各國不致有虞

本公司所出安全火藥專用於開煤礦業經由美政府之礦務部試驗審定

本公司有工廠三十所沿太平洋大西洋岸亦有工廠以便運輸

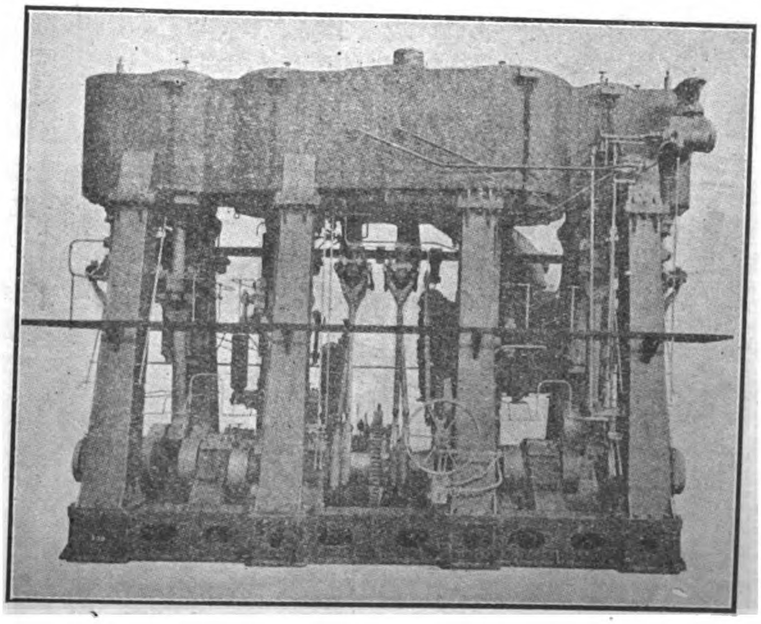
本公司設在美國達耳華省韋銘頓城

若承賜顧請通函爲禱

## 英國東北輪船機器公司廣告

North Eastern Marine Engineering Co., Ltd.

本公司專造三次或四次自漲力汽之合抵力汽機及平置水輪以及各種船隻



此圖爲四次自漲力汽之合抵力汽機計馬力四千八百匹

# 火石車輪橡皮公司廣告

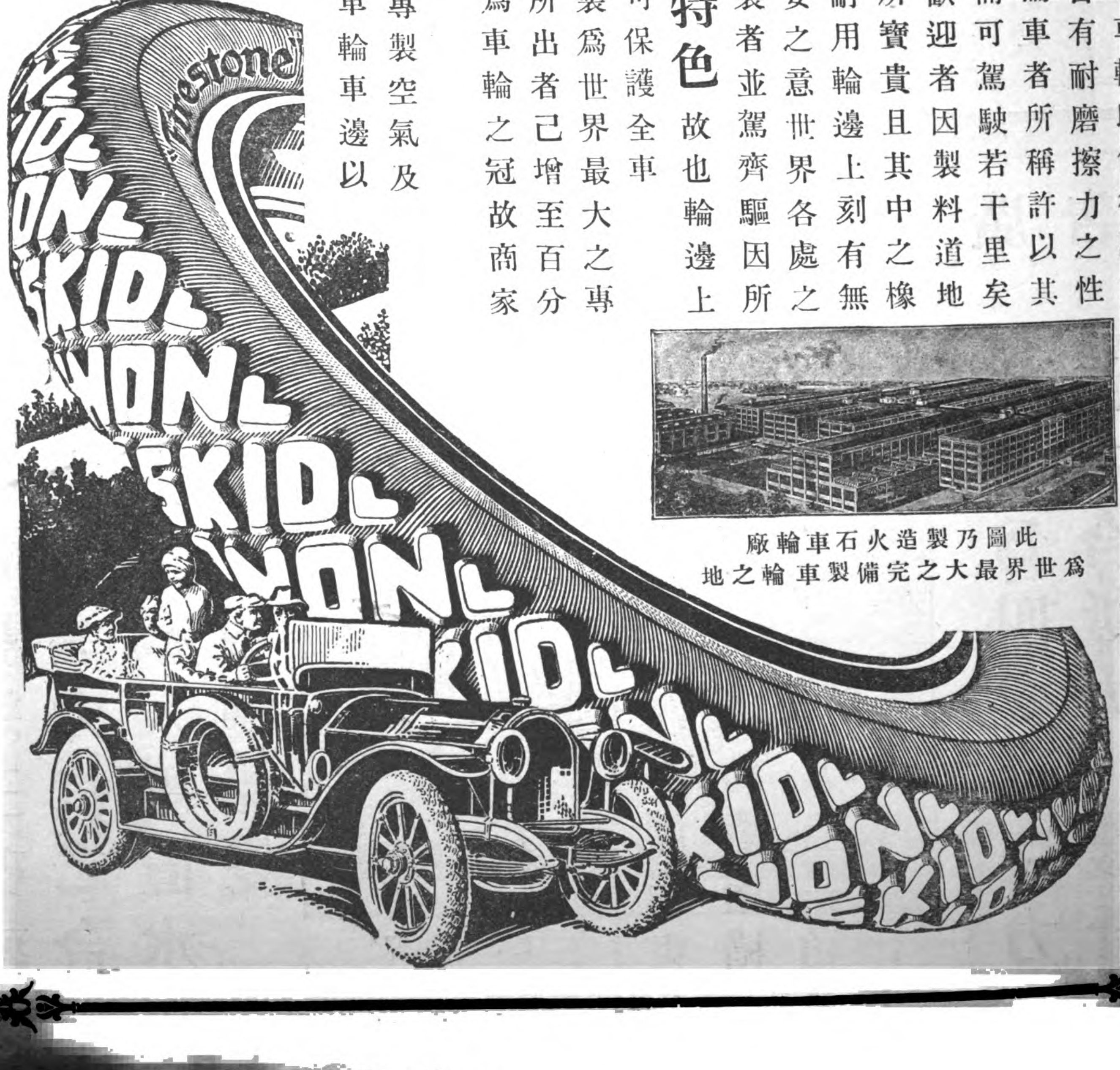
Firestone Tire & Rubber Co. Factory: Akron, Ohio, U. S. A.

本公司專製火石無輪制之車輪以便行駛於堅硬之道路及熱地上因含有耐磨擦力之性質且價廉而物尤美故爲駕車者所稱許以其穩妥適當所費者僅仙令而可駕駛若干里矣火石車輪之所以爲人人歡迎者因製料道地雖最廉價之車輪亦爲人所寶貴且其中之橡皮亦爲最好者最能避熱耐用輪邊上刻有無輪制等字卽所以表明穩妥之意世界各處之車輪斷不能與本公司所製者並駕齊驅因所著者乃**耐用省費爲特色**故也輪邊上之字可免輪制之擦損且可保護全車火石車輪邊爲專門家所製爲世界最大之專製車輪之工廠所造本年所出者已增至百分之七十八因力大堅穩故爲車輪之冠故商家亦願承辦代銷

工廠開設美國哇哈哇省專製空氣及實心輪子馬達車輪救火車輪車邊以及車輪所有之附屬品

小呂宋非列賓經理爲美國哈特韋匹泿並公司

中國通商口岸東三省及高麗等處若有殷實商家欲經理者可通函索取章程可也




此圖乃製造火石車輪廠
爲世界最大之完備製車輪之地

斐律濱全島銀行卽原日之西班牙斐律濱人銀行改名創設在西歷壹千八百五拾壹年　準備資本壹千萬元已收資本銀四百五拾萬元經斐島政府承認有附貯公欵所有銀行營業事宜買賣滙單各埠處如　英國倫敦滙票　法吧黎　西班牙馬德里　吧詩倫那　德國伯林　咸北　澳洲西德尼　舊金山　芝加哥香港與及一切總滙商市各區由電滙兌及附貯日息長期或逐日收支其利息悉照市面行情酌議另設支行在斐島屬之衣路埠其餘各埠皆設有代理人

| | | | |
|---|---|---|---|
| 倫敦 | National Bank of Scotland, Ltd. | 巴黎 | Comptoir National d'Escompte |
| 馬德里 | Banco Hispano Americano | 吧斯倫那 | Crédit Lyonnais |
| 伯林 | Deutsche Bank | 西德尼 | Bank of New South Wales |
| 紐約 | Kountze Brothers | 芝加哥 | Continental & Commercial Nat'l. Bank |
| 舊金山 | Wells Fargo Nevada National Bank | 香港 | Banque de L'Indo-Chine |
| 上海 | International Banking Corporation | 斐島詩務 | International Banking Corporation. |

總理人　樊挨示拂

協理人　馬山洛

本銀行寫字樓在嗎尼拉市些灣帝大街門牌第拾號

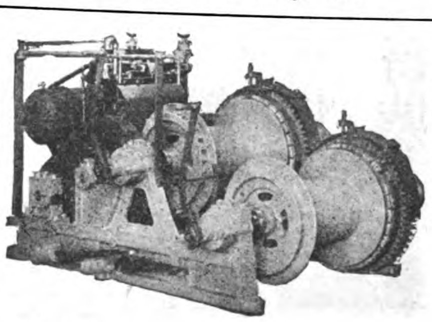
The Bank of the Philippine Islands



# 立奇華製造公司廣告

Lidgerwood Mfg. Co.

本公司製造扯升機掰司令油或蒸氣或電汽於各處均適用所定造之機器及電升機已不下三萬六千具欲知詳細請來函示知



公司開設於美國紐約省自由街九十六號歐洲經理處在英國倫敦京城



# 森茂司製造公司廣告

The Simmons Mfg. Simmons Bedsteads.

本公司專造床架爲全球最著名之鐵床廠之冠已有五十年之閱歷且所配料作均精美無匹質地堅實且合於各地之天時水土而款式及模樣爲各國所宜

若欲知詳細式樣請直接來函本公司索取或由經理人間接亦可

開設美國威司根辛省開諾息



# 德華銀行

總行在上海分設香港廣東北京天津漢口青島濟南橫濱神戶新加坡加耳各搭柏林漢堡等處資本七百五十萬兩創始於一千八百八十九年利息活存者二釐存款有定期者可向本行詢問兼做各處匯兌總經理弗葛君

Deutsch-Asiatische Bank

# 匯豐銀行

(即菲利賓政府儲銀所)

△貲本金　一千五百萬元
△英金公積　一千五百萬元
△銀公積　一千六百七十五萬元
△貯備股東應付金　一千五百萬元

定期存款利息額如蒙函詢當即通知需用銀者如以相當之物作抵均可議辦其餘各種銀行交易皆應有盡有匯票則可匯至歐洲印度新金山美洲中國及日本各大商埠

Hongkong & Shanghai Banking Corporation

# 花旗銀行廣告

本行招集資本及歷年贏餘共計美金六百五十萬元總行設在美國紐約城全球通商大埠無不設經理以廣招徠商界遊歷界保信買賣匯票及電匯等事無不辦理妥善以副各界信任茲將已設分行各埠分列於左

孟買　巴拿馬帶　北京
加爾各答(印度)　漢口　舊金山
廣東　香港　上海
色盤　神戶　新嘉坡
哥倫　小呂宋　橫濱
墨西哥城　巴拿馬　倫敦

總董侯白登　總理格林

International Banking Corporation

# The Bank of the Philippine Islands

## FORMERLY BANCO ESPANOL=FILIPINO

(ESTABLISHED 1851)

| | |
|---|---|
| **Authorized Capital** | P10,000,000.00 |
| **Capital fully paid up** | 4,500,000.00 |
| **Reserve funds** | 1,375,000.00 |

**Official Government Depository**

**General Banking Business**

Buys and sells drafts on London, Paris, Madrid, Barcelona, Berlin, Hamburg, Sydney, New York, San Francisco, Chicago, Hongkong, Yokohama, Kobe, Nagasaki and all other principal cities.

**Telegraphic Transfers**

Interest allowed on fixed deposits and current accounts at rates which may be had on application.

### BRANCHES: ILOILO, ZAMBOANGA

AGENTS:

LONDON: National Bank of Scotland, Ltd.
PARIS: Comptoir National d'Escompte
MADRID: / BARCELONA: Banco Hispano-Americano / Crédit Lyonnais
BERLIN: / HAMBURG: Deutsche Bank
NEW YORK: National City Bank
SAN FRANCISCO: Wells Fargo Nevada National Bank
SEATTLE: Seattle National Bank

CHICAGO: Continental & Commercial Nat'l. Bank
AUSTRALIA: Bank of New South Wales, Sydney.
HONGKONG: Banque de L'Indo-Chine
SHANGHAI: Bank of Territorial Development of China, Ltd. / International Banking Corporation
CEBU: International Banking Corporation
YOKOHAMA: / KOBE: Yokohama Specie Bank, Ltd.
FORMOSA: Bank of Taiwan, Ltd.

PRESIDENT
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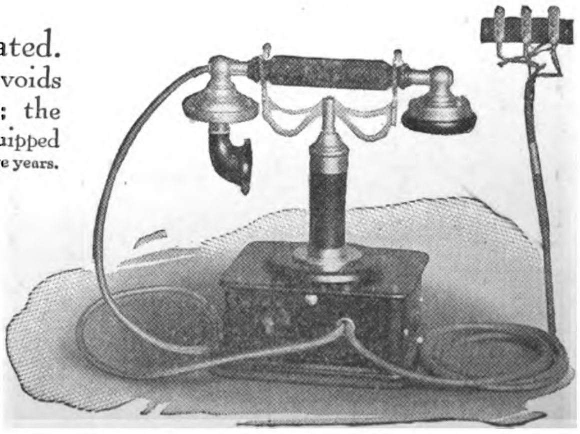

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遠東時報

Engineering
Finance Commerce

Vol. XIII., No. 1. SHANGHAI — MANILA June, 1916.

## The Coal Resources of China

## The Passing of Yuan Shih-kai

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## Philippine Hemp Improvement

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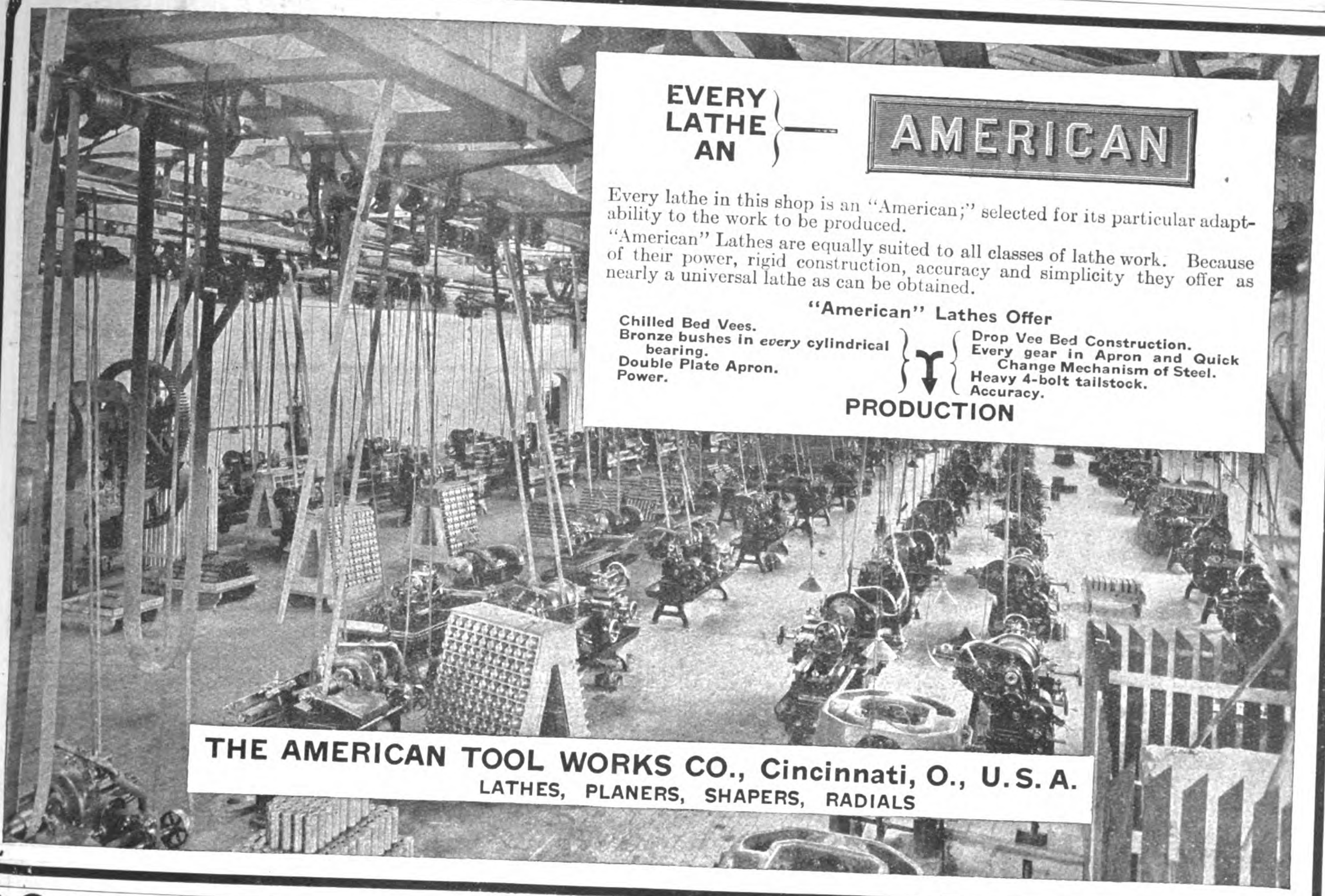

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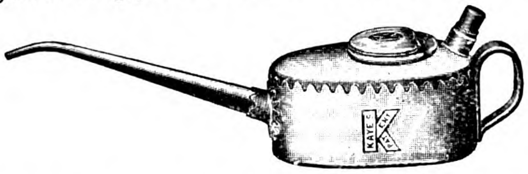


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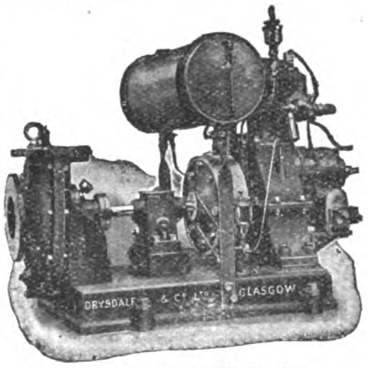


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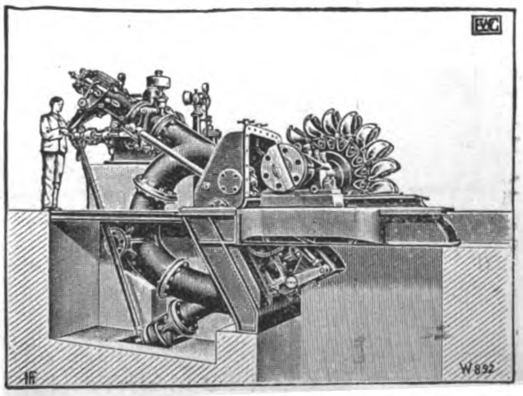

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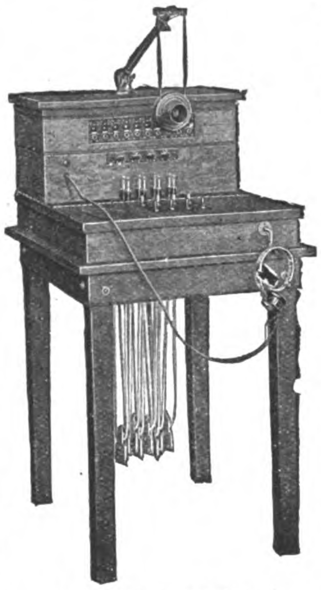

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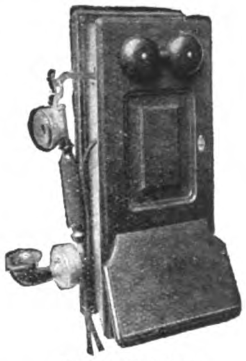

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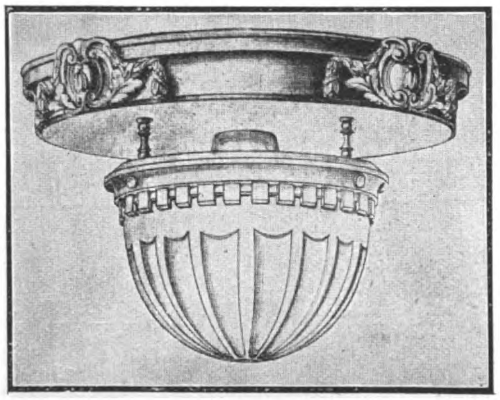

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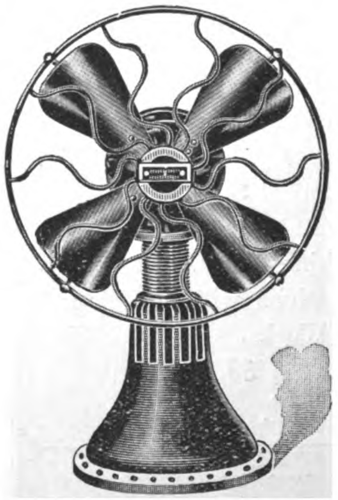

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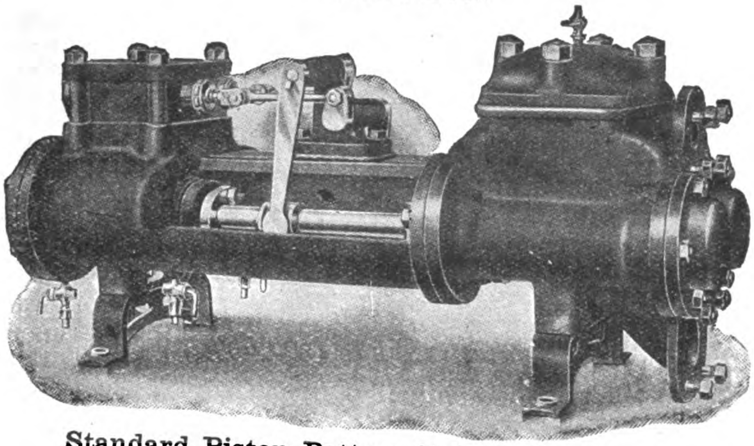

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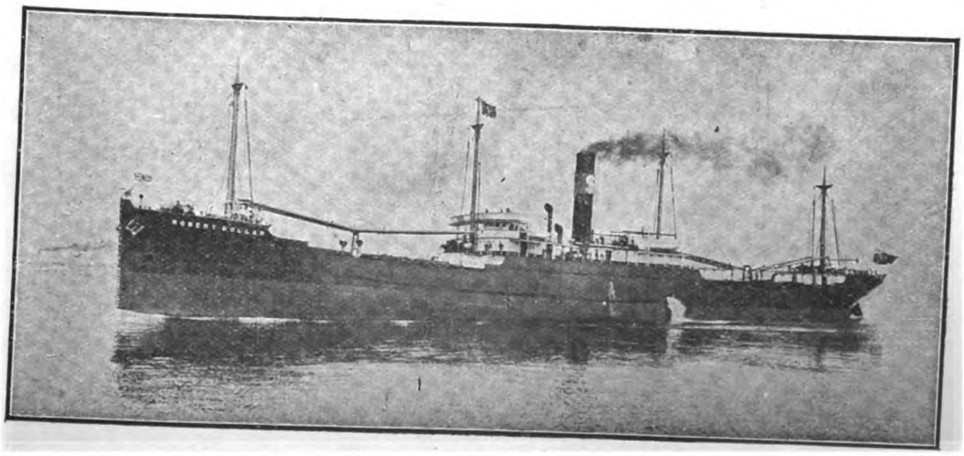

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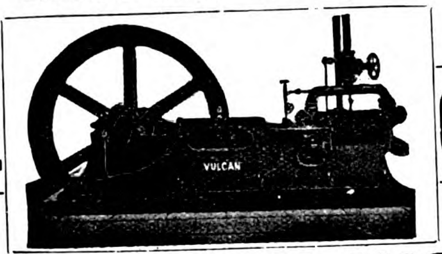


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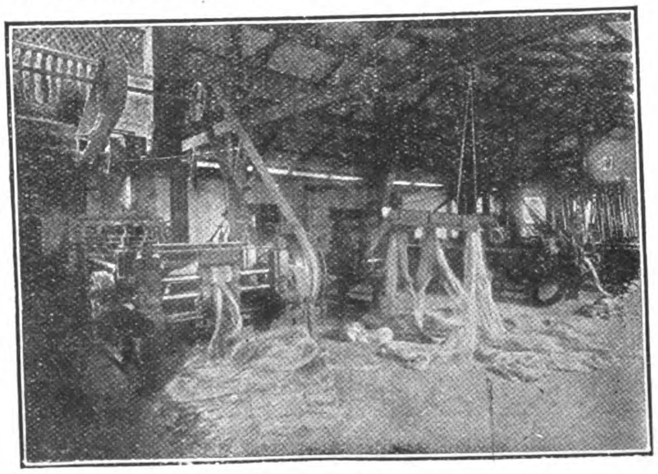

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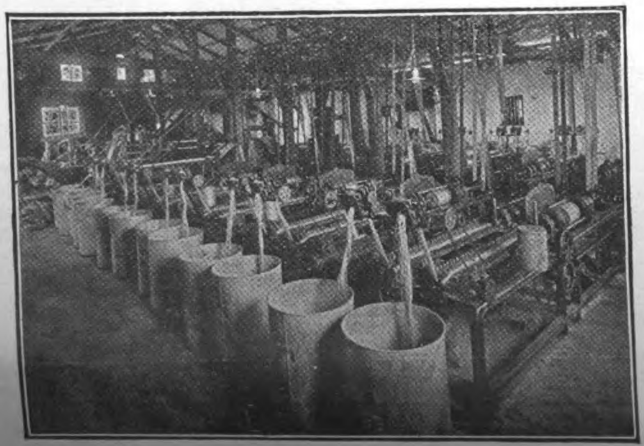

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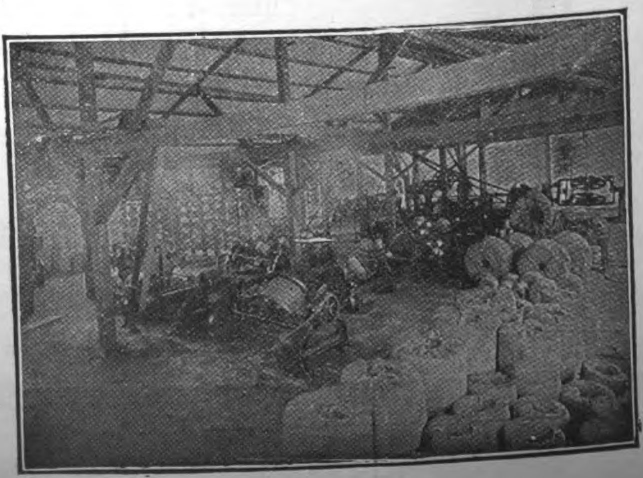

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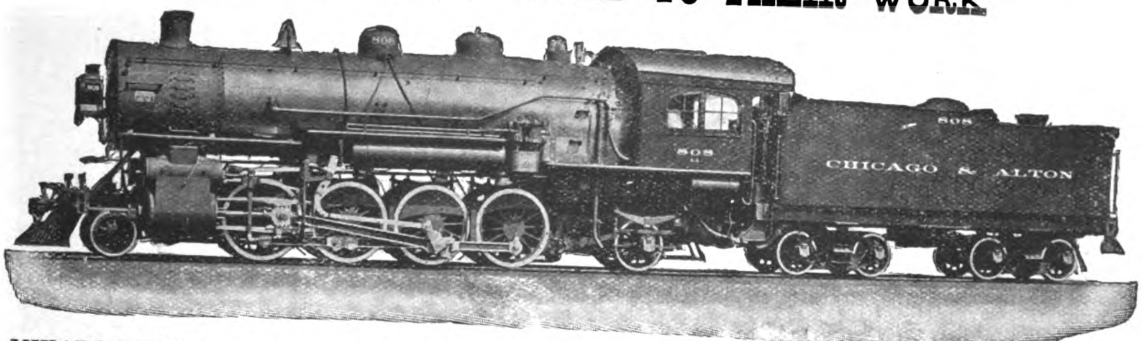


MIKADO TYPE LOCOMOTIVE WITH SUPERHEATER, BUILT FOR CHICAGO & ALTON RAILROAD

**Total Weight of Engine, 269,000 Pounds. Weight on Drivers, 212,300 Pounds; Diameter of Drivers, 62 Inches. Boiler Pressure, 160 Pounds; Cylinders, 28 × 30 Inches. Maximum Tractive Power, 51,590 Pounds. Thirty of these engines have replaced Consolidations of 39,800 pounds tractive power on the line from Virden to Chicago.**

The use of larger locomotives, with the latest and best improvements, has effected savings in fuel on a number of railroads varying from 25 to 35 per cent.

The Chicago & Alton Railroad's heaviest freight service was formerly handled by Consolidation locomotives with a tractive effort of 39,800 pounds. By adopting superheater Mikado type locomotives with a tractive effort of 51,590 pounds, they have increased their tonnage from trains of 3,200 tons to trains of 4,000 tons with an average saving of 28 per cent and a maximum of 35 per cent in cost of fuel.

The saving has been made possible not merely by adding fuel saving devices to existing designs, but by designs specially directed toward best possible use of fuel saving devices.

If you do not wish to save this fuel, but prefer to use it in securing greater capacity, the following table shows how it may be done.

| Scale of Economy. Saving in fuel per unit of work | | Scale of Capacity. Increased work per ton of coal |
|---|---|---|
| 25 per cent. | means | 33.3 per cent. |
| 30 per cent. | means | 42.8 per cent. |
| 35 per cent. | means | 53.8 per cent. |

Of course the locomotive must be especially designed to provide the additional capacity.

With superheater and brick arch, the harder the engine is worked the greater is the economy obtained, and therefore the greater the capacity up to the limit of the combination of the particular boiler and engine concerned.

## AMERICAN LOCOMOTIVE SALES CORPORATION

30, CHURCH STREET, NEW YORK. Cable Address:—LOCOMOTIVE NEW YORK

## MITSUI BUSSAN KAISHA, LIMITED

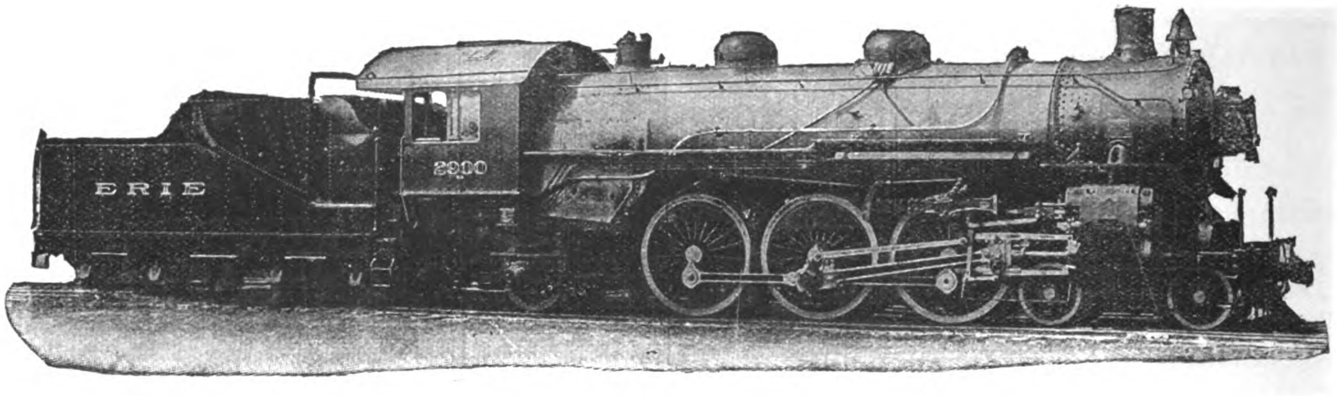
(MITSUI AND COMPANY)

Sole Agents for China, Japan, Korea, Manchuria and Siam

Agents for the Philippine Islands, Pacific Commercial Co., Manila

# Lima Locomotive Corporation

**Builders of all Classes of Motive Power. Capacity 720 to 1,000 per year**




**Heavy Pacific Type Built for Erie Railroad**

## LIMA HEAVY PACIFIC TYPE

This locomotive combines the latest improvements and developments in design, materials and economic devices for saving fuel, etc.

Built for the **ERIE RAILROAD** for heavy fast passenger service where maximum capacity was desired.

General Dimensions as Follows:

| | |
|---|---|
| Cylinders, 27 × 28 inches | Weight on drivers, 176,000 lbs. |
| Driving wheel base, 14 ft. | Total Weight, 287,000 lbs. |
| Total Wheel base, 36 ft. 2 inches | Tractive Power, 40,700 lbs. |
| Drivers, diameter 79 inches | Factor Adhesion, 4.24 |
| Boiler, straight locomotive type | Superheater, Schmidt |
| Boiler diameter 79 inches | Valve motion, Baker |

Our **PLANT** is equipped with the latest and most improved machinery, which enables us to build any type or size locomotive required.

Write our Agents for any information you desire and a copy of our catalogue.

### HOME OFFICE

1096 SOUTH MAIN STREET, LIMA, OHIO, U.S.A.

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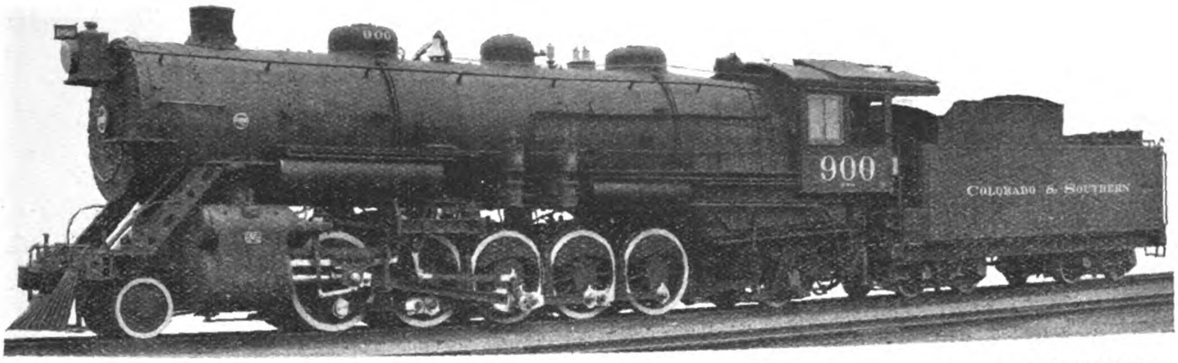
50 CHURCH STREET, NEW YORK, N.Y.
CABLE ADDRESS
SHAYLOCO

AGENTS
SAMUEL, SAMUEL & CO.,
YOKOHAMA, TOKYO, KOBE, SHIMONOSEKI, JAPAN; TAIPEH, FORMOSA

# 2-10-2 TYPE LOCOMOTIVES

The greater part of the heavy freight traffic on American railways, is worked by locomotives with four pairs of coupled driving-wheels. In some localities, however, the hauling capacity of these locomotives is insufficient; and the 2-10-2 type is now being used, to a limited extent, for the heaviest class of service.




2-10-2 TYPE LOCOMOTIVE, CHICAGO, BURLINGTON & QUINCY R.R. SYSTEM.

Cylinders, 30″×32″
Driving-wheels, diameter, 60″
Steam pressure, 175 lbs.
Grate area, 88 sq. ft.
Water heating surface, 5,349 sq. ft.
Superheating surface, 1,232 sq. ft.
Weight on driving-wheels, 295,950 lbs.
Weight, total engine, 367,850 lbs.
Tractive force, 71,500 lbs.

With equal weights per pair of driving-wheels, a locomotive of the 2-10-2 type can exert 25 per cent. greater tractive force than an eight-coupled engine. The design is a direct development of the Mikado, or 2-8-2 type, and it has an equal advantage as far as high relative steaming capacity is concerned. The boiler has a long barrel and a deep, wide firebox, which is usually built with a combustion chamber. This keeps the length of the tubes within reasonable limits, and increases the length of flame-way and also the furnace volume. Ample space for combustion is important when burning high-volatile coal.

The illustration shows one of 46 locomotives of the 2-10-2 type, which are in service on the Burlington System. These engines are equipped with superheaters, brick-arches and mechanical stokers. They can traverse curves of 275 feet radius, and are successfully used in heavy road service.

The 2-10-2 type can be adapted to narrow as well as standard gauge, and its advantages merit careful consideration.

# THE BALDWIN LOCOMOTIVE WORKS

Cable Address:—"BALDWIN, PHILADELPHIA" PHILADELPHIA, PA., U.S.A.

Agents for China:—ANDERSEN, MEYER & Co. Ltd., SHANGHAI, TIENTSIN, PEKING, KALGAN, HONGKONG and HANKOW,

Agents for Japan:—SALE & FRAZAR, Ltd., TOKYO.

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## PROSPECTING AND DEVELOPMENT

of all kinds of Mineral Properties undertaken.

**BORING** to any depth required

with

**Diamond Boring Machines**

under charge of experienced staff.

**Accurate results guaranteed.**

For further particulars and estimates—apply

**PEKIN SYNDICATE, LTD.**

SHANGHAI, TIENTSIN, HANKOW, PEKING.

# 鑛務

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金鋼鑽鑽機打礶

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上海 天津 漢口 北京

# General Electric Company

## Schenectady, N. Y., U. S. A.

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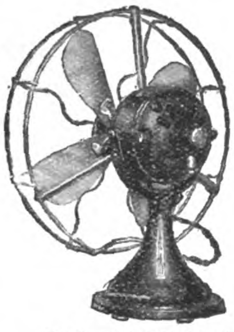
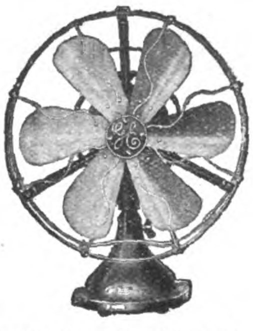
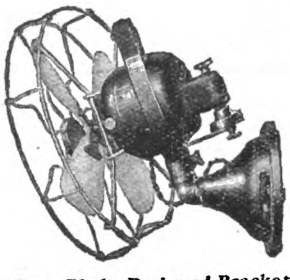
Lamps, Incandescent
Lightning Arresters
Line Material
Locomotives, Mine, Railway and Industrial



**Desk and Bracket Fan Four-blade; Non-oscillating**



**Desk and Bracket type Six-blade Fan**



**Four-Blade Desk and Bracket Fan, Bracket position Oscillating type**

## G-E Fans for the Household

The cooling comfort of a G-E Fan can be carried into any room in the house and attached to the nearest lamp socket. On hot, sultry, sleepless nights, the gentle breeze of a G-E Fan lulls you into a soothing, restful sleep. G-E Fans will last a lifetime and are the most popular and widely sold electric fans in the world. This widespread use is based on

## Quality

Over twenty years of laboratory study and factory application are concentrated in the smooth running, silent G-E Fan.

Sturdiness of construction, perfect integrity of materials and parts, rigid care in manufacture, all assure this lifetime of satisfactory service.

Made in 8, 12 and 16 inch sizes for desk and wall bracket use, in both fixed and oscillating types.

5705

### FAR EASTERN REPRESENTATIVES

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**Yokohama**—Bagnall and Hilles, 42, Yamaschita Cho.
**Tokyo**—Mitsui Bussan Kaisha, Ltd., 1, Suruga Cho.
**Shanghai**—Andersen, Meyer & Co., Ltd., 5 Yuen Ming Yuen Road
**Manila**—Frank L. Strong Machinery Co., Correspondent, 64-68 Calle Echague

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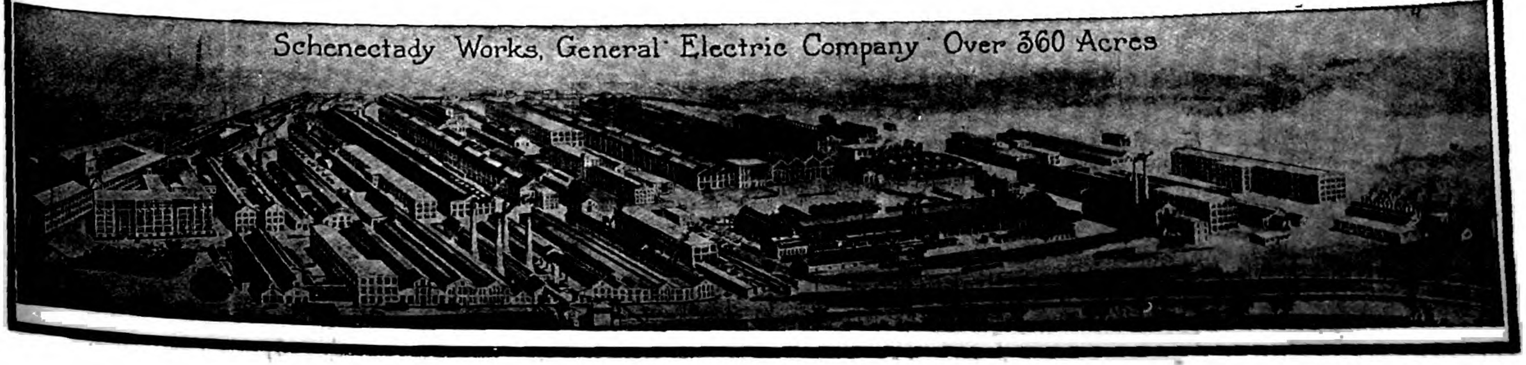
Regulators
Rheostats
Supplies, General
Switchboards
Switches
Transformers
Turbine Generators
Watthour Meters
Wire and Cables
Wiring Devices



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REG. TRADE MARK

## To Manufacturers :-: Mill Owners :-: Engineers.

SOCONY Lubricating Oils are manufactured by the most scientific processes.

Expert refiners prepare each and every grade so that it will give the highest possible amount of efficiency under working conditions

Every ounce of the whole load of your factory comes on the Cylinder and Valves and the best Lubrication you can give them, is not too good.

Idle engines earn no money, but are a constant source of expense. High engine efficiency is only obtained by perfect lubrication with Standard Lubricants.

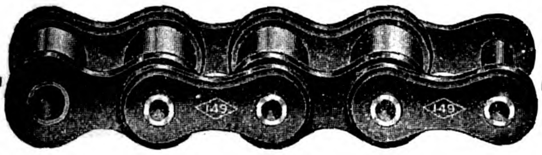
Although a High Class Oil costs more initially, in the end it is far cheaper, its economical life is longer, its Lubricating qualities greater, and its consumption less.

Railway Lubrication has always been the cause of endless worry to the engineer. The best oils should be used, as exhaustive tests have proved that the cost of coal required to overcome the friction was 3 times the cost of a Cheap Lubricant, and the cost to renew the metal was 6 times the cost of a Cheap Lubricant.

# STANDARD OIL COMPANY OF NEW YORK

## Lubricating Oil Department

## Dealers and Branches all over China



# 'DIAMOND' CHAINS
for
## Motor-cycles

THE No. 149 "Diamond" is an accurate, strong, durable chain, suited for the most severe motor-cycle service. Nickel steel is used exclusively for the rivets, all wearing parts are scientifically heat treated, the rollers are of special alloy steel and positively DO NOT BREAK under anything like normal service conditions.

Diamond motor-cycle chains are absolutely dependable—furnished standard 5/8 in. Pitch and with rollers 1/4 in. or 3/8 in. wide. We are also prepared to serve the trade promptly with chains for Cycles, Automobiles, Motor Trucks and Power Transmission.

**Special care given to Export Shipments.**
**Correspondence solicited in any language.**
**Catalogue, samples and prices on application.**

**Diamond Chain & Mfg. Company**
**Indianapolis, Indiana**
**U. S. A.**

**Cable Code: A. B. C. 4th & 5th Editions**
**Cable Address: "Chain" Indianapolis**

# GOULDS
## CENTRIFUGAL
# PUMPS

FOR Feeding Boilers, Condenser Service, Fire Service, Municipal Waterworks, Irrigation and Drainage, Handling Sewage, Unwatering Mines, Pumping Stock in Paper and Pulp Mills, Booster Service, Hot Water Circulating in Heating Systems, Pumping Sumps, Pumping Clear Liquids such as Brine, Cold Beer, Gasoline, Kerosene, Light Machine Oils, etc., and for many other General Pumping Services.

*Bulletins on Request*

**The Goulds Mfg. Co.** Main Office and Works **Seneca Falls, N.Y., U.S.A.**

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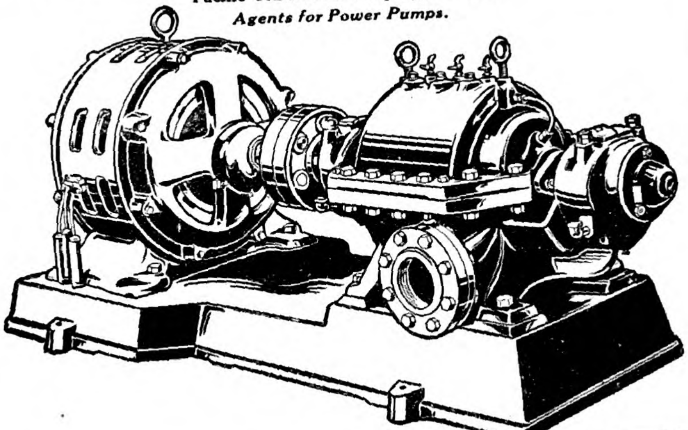
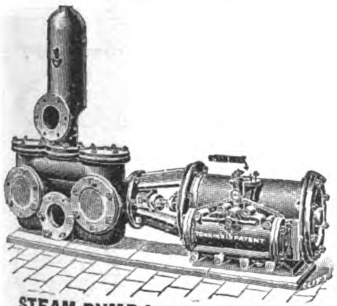
**Anderson, Meyer & Co., Shanghai. Bagnall & Hilles, Gomei Kaisha, Yokohama.**
**Pacific Commercial Company, Manila.**
*Agents for Power Pumps.*



## *WE MANUFACTURE*
# PUMPS
## FOR EVERY PURPOSE

To be worked by HAND, STEAM, BELT, WIND, WATER or ELECTRIC POWER.



STEAM PUMP for General Purposes.

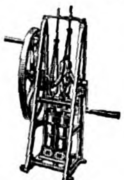


Fig.225.

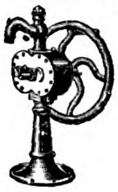
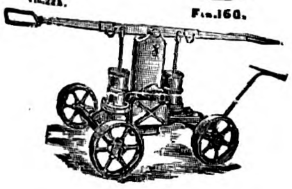
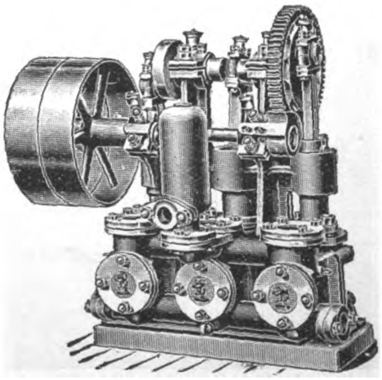
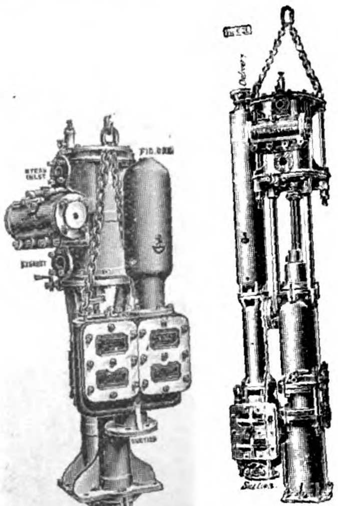


Fig.160.







SINKING PUMPS for COLLIERIES, MINES, Etc.

Fig.191.

*Write for "Eastern" List.*

# JOSEPH EVANS & SONS
(WOLVERHAMPTON) LTD.

CULWELL WORKS,
**WOLVERHAMPTON, ENGLAND.**

Fig.182.

# FRANK L. STRONG MACHINERY CO.

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Hamilton-Corliss Engines

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Telephone Apparatus and Accessories

GARLOCK PACKING COMPANY

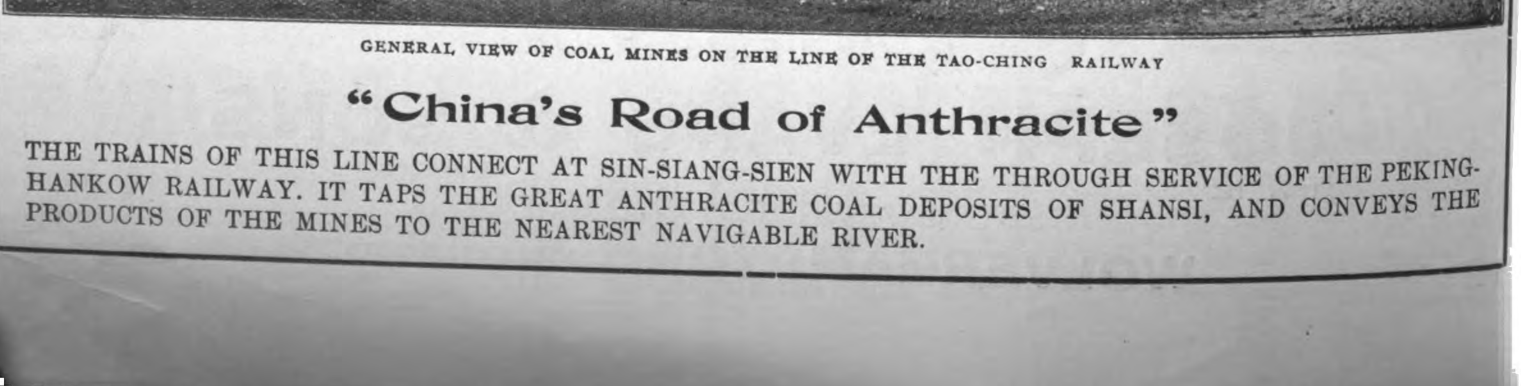


# CHINESE GOVERNMENT RAILWAYS

## THE TAO-CHING RAILWAY

TAOKOU TO CHINGHUA

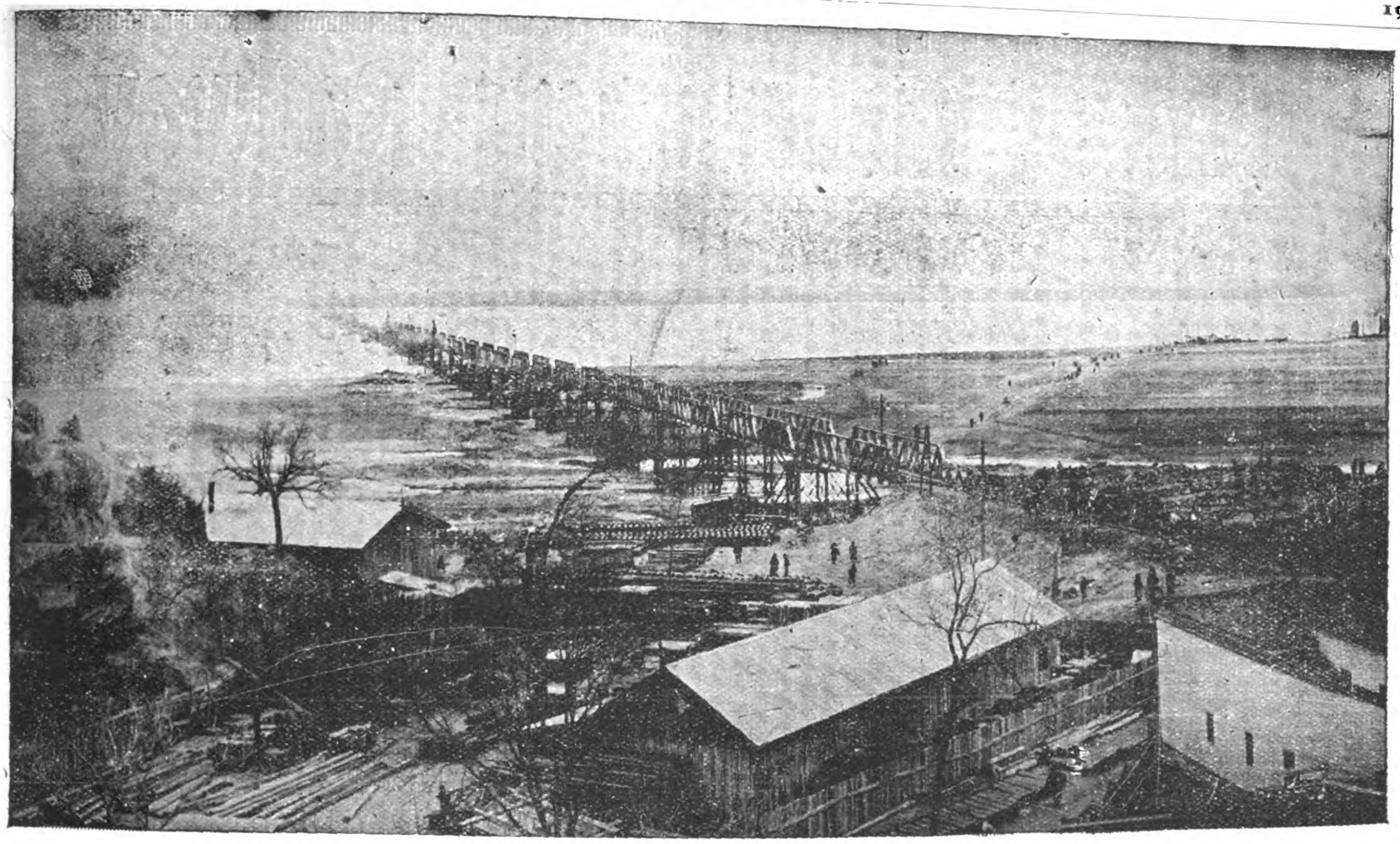
(CHINESE GOVERNMENT HONAN LINE)



GENERAL VIEW OF COAL MINES ON THE LINE OF THE TAO-CHING RAILWAY

### "China's Road of Anthracite"

THE TRAINS OF THIS LINE CONNECT AT SIN-SIANG-SIEN WITH THE THROUGH SERVICE OF THE PEKING-HANKOW RAILWAY. IT TAPS THE GREAT ANTHRACITE COAL DEPOSITS OF SHANSI, AND CONVEYS THE PRODUCTS OF THE MINES TO THE NEAREST NAVIGABLE RIVER.



THE YELLOW RIVER BRIDGE ON THE PEKING-HANKOW LINE

CHINESE GOVERNMENT RAILWAYS

# PEKING-HANKOW LINE

"THE ROAD THROUGH THE HEART OF CHINA"

Avoid the Cold and Rough Weather in the Sea Trip between Shanghai and the North by the more comfortable Route up the Yangtsze to Hankow, and from there via the Ching-Han Railway to Peking, where through connections for Europe are made with the Trains de Luxe of the Government Railways of North China.

This line passes through the Heart of the Country and enables the traveller to and from Europe to catch a glimpse of Old China. Ancient walled cities, temples and pagodas are seen from the comfortable seats of the weekly trains de luxe operated by this line. From Peking, the great capital of the oldest civilization in the world, the train departs from the famous Chien-Men and carries the traveller through the historical and legendary portions of the Country, to the modern industrial center at Hankow—the Chicago of China. Connections are made with the Cheng-Tai Railway at Chengtingfu, with the Tao-Ching Line at Sin Siang-sien, and at Chengchowfu with the Pienlo Line.

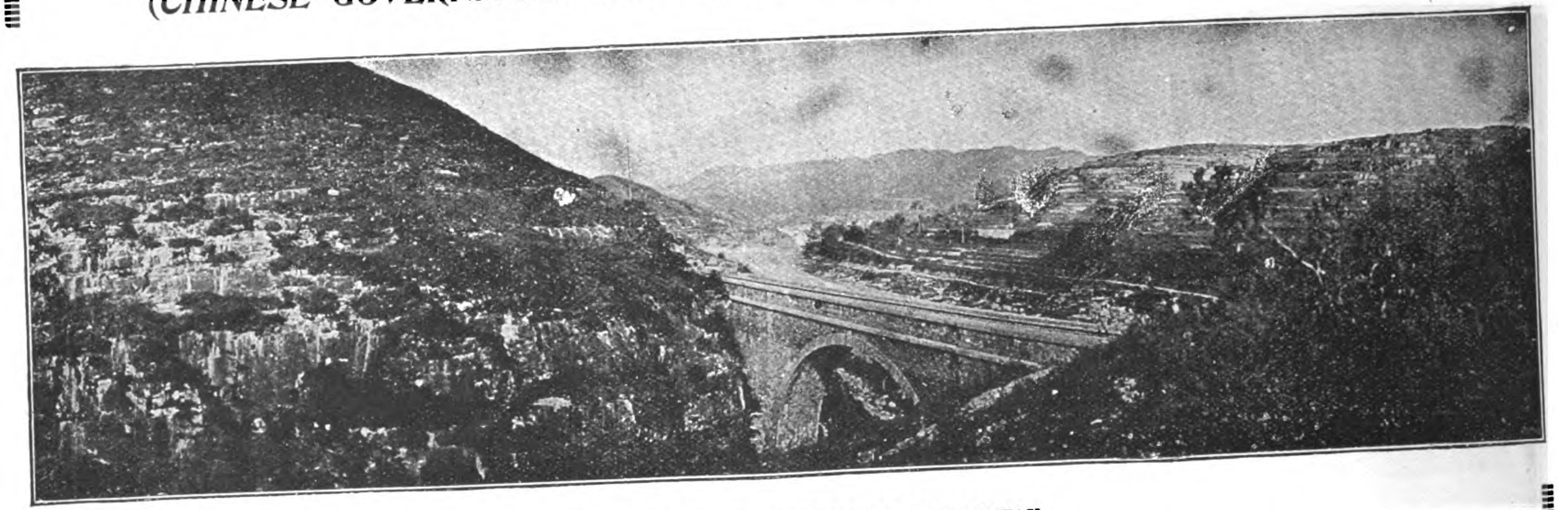
A weekly express train de luxe leaves Peking every Tuesday, and Hankow every Friday, making the trip of over 700 miles in less than thirty hours.

For information apply to any office of the International Sleeping Car Co. or Thos. Cook and Sons.

# Chinese Government Railways

## The Cheng-Tai Railway

(CHINESE GOVERNMENT SHANSI LINE—CHENGTINGFU TO TAIYUANFU)

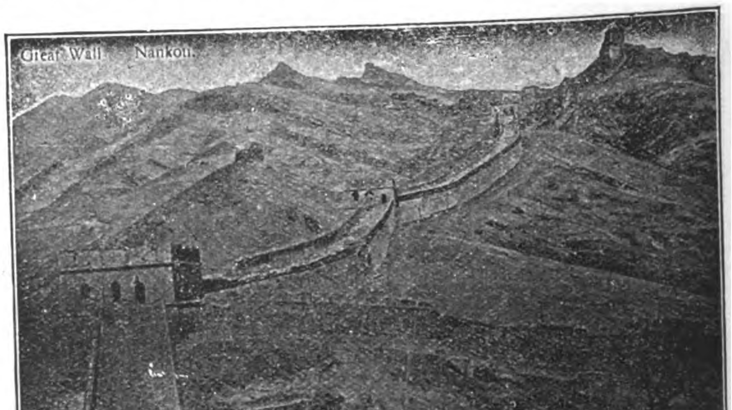


VIEWS ALONG ROUTE OF CHENG-TAI RAILWAY

The trains of this line connect with the through service of the Peking-Hankow Railway, affording Travellers the opportunity of seeing the most picturesque part of China. The line passes through a mountainous section of country, rich in Mineral Resources to the Provincial Capital of Shansi at Taiyuanfu. This interesting city is a great educational center, and famous for the fine quality of its artistic embroideries.

## The Peking-Kalgan Line

*"THE ROAD TO THE GREAT WALL"*




This line follows the ancient caravan route and military highway from Mongolia into China by the way of the historic Nankow Pass. This pass is the Key to Peking, and Kalgan is the gate of the Country. From here the great camel caravans set out on their long journeys across Mongolia to Siberia and Central Asia. This old frontier mart, retaining its time-honored characteristics, one of the most interesting sights of the Old World, is made accessible by the new railway. The line also carries the passenger in two hours from Peking to Nankow, when the Great Wall of China and the Ming Tombs may be seen. A foreign hotel is operated by the railway authorities at Nankow, where chairs and guides may be secured for the Tombs.

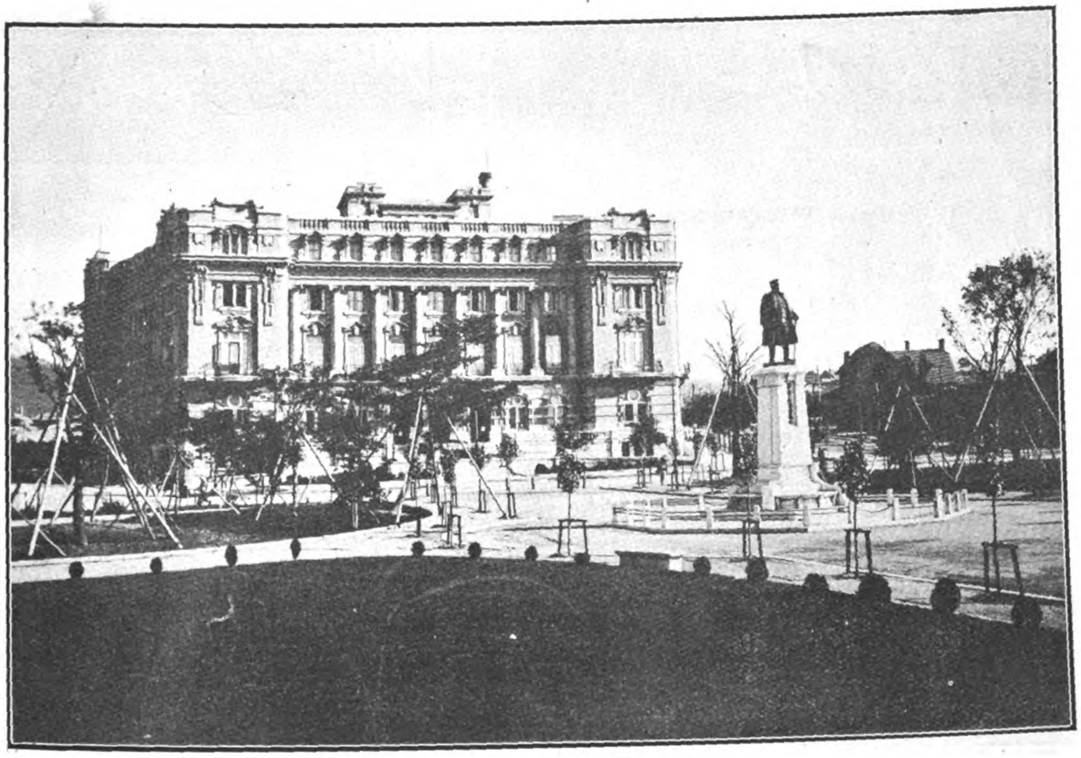
# Why not Spend This Year's Holiday in South Manchuria?

Magnificent Climate, Beautiful Scenery, Historic Battlefields,
Hotel Accommodation of the Best, Comfortable Travelling.
Good Shooting, Capital Fishing, Fine Golfing, and Sea Bathing ad lib.,
Combined with the Distinctive Quaintness of the Country undergoing the most
Striking Evolution of Modern Times.

## What more do you want?

All this and much more can be obtained in South Manchuria at moderate outlay, and you will return from the trip charmed, revived, and invigorated as never before.

Ask the Travel Offices what they think



Of this Holiday Scheme.

YAMATO HOTEL, DAIREN

In addition to its Train and Steamer Services, the South Manchuria Railway Company provides Modern Hotels on European lines at Dairen (whose phenomenal rise as a City and Port affords interesting study), Hoshigaura (the finest seaside resort in North China), Port Arthur (where the ruined forts are maintained just as they were left at the close of the Russo-Japanese War), Mukden (the Manchu Capital where the picturesque Imperial Palaces and Tombs may be inspected), Changchun (the key of Manchuria and the junction for three Railways), and gives equivalent to European Hotel accommodation at its Club at Fushun (one of the most important Collieries in the World).

Information on any subject and a beautifully Illustrated Guide Book supplied gratis by the

## South Manchuria Railway Company,

DAIREN.

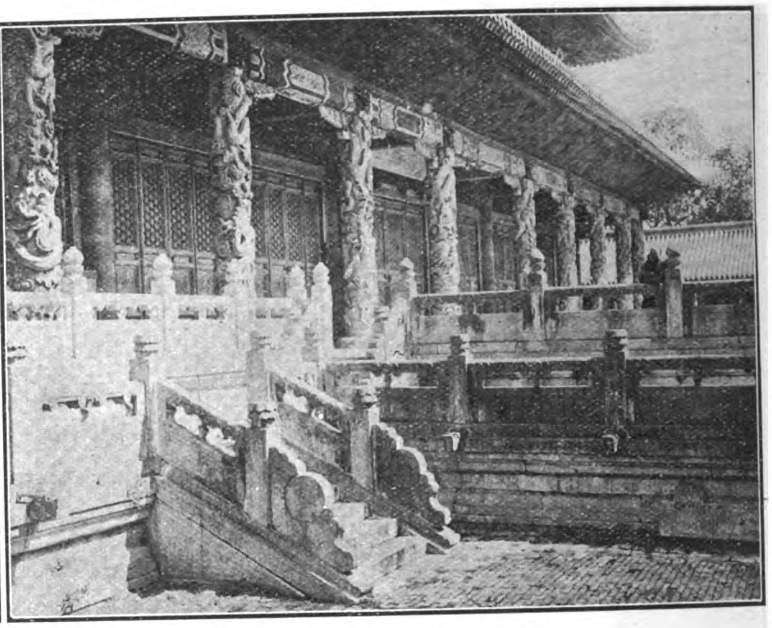
Telegraphic Address: Mantetsu.

Codes: A.B.C. 5th Edition, A. 1., & Lieber's.

# CHINESE GOVERNMENT RAILWAYS

# TIENTSIN-PUKOW LINE

The Tomb of Confucius



Confucian Temple at Chüfu

**Mukden-Peking-Kalgan-TIENTSIN-TSINANFU-HSUCHOWFU-PUKOW-Nanking-Shanghai.**

**all by rail only.**

Being the **quickest, surest and most convenient** connection between Shanghai on the one and Tientsin, Peking, Kalgan, Mukden and the **Siberian route on the other side,** this railway represents **a saving of many hours, of many troubles,** worries and inconveniences for the busy merchant, the home tripper on short furlough.

The tourist, the globe trotter travelling with more leisure and bent on seeing things, it takes right away from the stereotyped banality of the great ports, takes him through many provinces of the vast republic and shows him **something of the "real" China,** of its people, its history and its beauty.

Express trains equipped with sleeping and buffet cars run once a week each way between Pukow (Nanking) and Tientsin connecting with the through service of the South-Manchuria and Trans-Siberian Railways.

Through mail trains equipped with **buffet cars run daily each way** between the before mentioned termini.

The crossing over the Yangtsekiang between Nanking and Pukow is effected by means of a modern 100-tons twin-screw ferry boat.

Special facilities and **liberal allowances** for passengers' baggage.

Best of **meals and wines supplied** on the trains.

Sanitation under the personal supervision of a **qualified medical officer.**

For further particulars apply to THE TRAFFIC MANAGER, Head Office, TIENTSIN or to the Agencies of Messrs. Thomas Cook & Sons, The International Sleeping Car & Express Trains Co. or the Nordisk Resebureau.

Telegraphic Address: TSINPURY—Tientsin (Tsinanfu, Nanking, Shanghai).

Codes: A B C 5th Edition; Broomhalls' (with Suppl. No. 1).

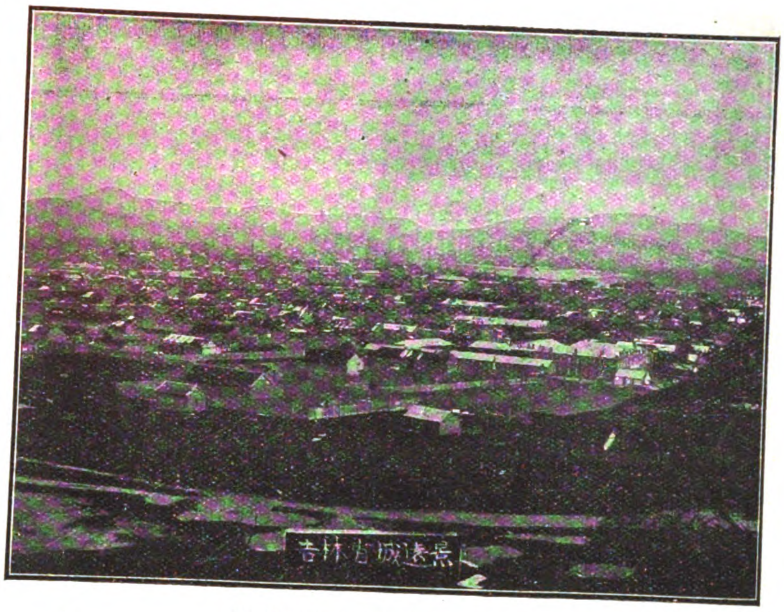
**Tientsin, May 1st, 1915.** **The Tientsin-Pukow Railway Administration.**

# 中華民國政府吉長鐵路行車時刻表

# CHINESE GOVERNMENT RAILWAYS KIRIN-CHANGCHUN LINE.

## TIME TABLE.

| DOWN TRAINS Daily Mixed | DOWN TRAINS Daily Mail | | STATIONS. | | UP TRAINS Daily Mail | UP TRAINS Daily Mixed |
|---|---|---|---|---|---|---|
| P.M. | A.M. | | | | P.M. | A.M. |
| 2.30 | 7.30 | dept. | TOUTAOKOU | arr. | 6.25 | 10.47 |
| 2.38 | 7.38 | arr. | CHANGCHUN | dept. | 6.15 | 10.37 |
| 2.45 | 7.41 | dept. | | arr. | 6.10 | 10.31 |
| 3.20 | 8.12 | arr. | KALUN | dept. | 5.40 | 9.57 |
| 3.25 | 8.14 | dept. | | arr. | 5.38 | 9.55 |
| 3.58 | 8.46 | arr. | YINMAHO | dept. | 5.06 | 9.22 |
| 4.02 | 8.48 | dept. | | arr. | 5.04 | 9.20 |
| 4.17 | 9.02 | arr. | HSIACHIUTAI | dept. | 4.50 | 9.05 |
| 4.22 | 9.04 | dept. | | arr. | 4.48 | 9.03 |
| 4.34 | 9.16 | arr. | YINGCHENGTZE | dept. | 4.36 | 8.50 |
| 4.38 | 9.18 | dept. | | arr. | 4.33 | 8.48 |
| 5.03 | 9.40 | arr. | TUMENLING | dept. | 4.12 | 8.24 |
| 5.13 | 9.50 | dept. | | arr. | 4.06 | 8.18 |
| | | arr. | CHAOCHIATIEN | dept. | 3.46 | 7.58 |
| 5.33 | 10.10 | dept. | | arr. | | |
| 5.57 | 10.31 | arr. | HUAPICHANG | dept. | 3.24 | 7.23 |
| 6.02 | 10.33 | dept. | | arr. | 3.22 | 7.20 |
| 6.18 | 10.46 | arr. | KUTIENTZE | dept. | 3.08 | 7.04 |
| 6.20 | 10.47 | dept. | | arr. | 3.07 | 7.03 |
| 6.38 | 11.03 | arr. | KIUCHAN | dept. | 2.52 | 6.45 |
| 6.43 | 11.05 | dept. | | arr. | 2.50 | 6.42 |
| 7.05 | 11.25 | arr. | KIRIN | dept. | 2.30 | 6.20 |

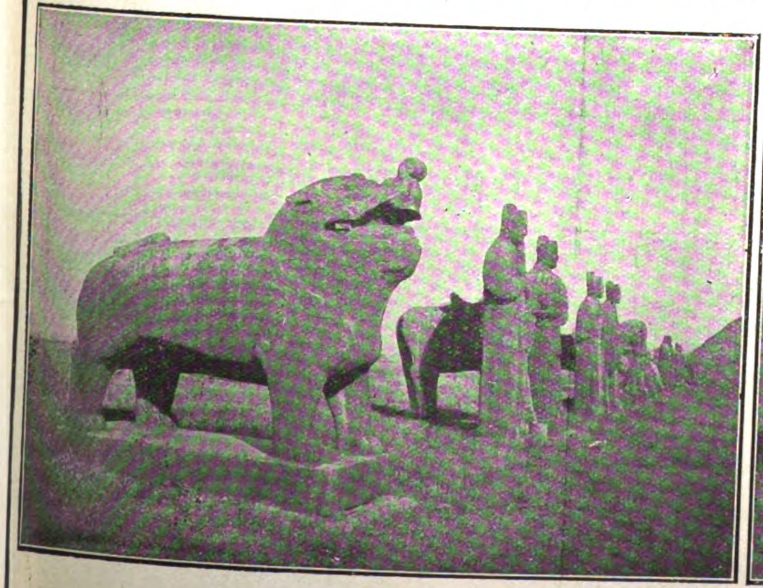


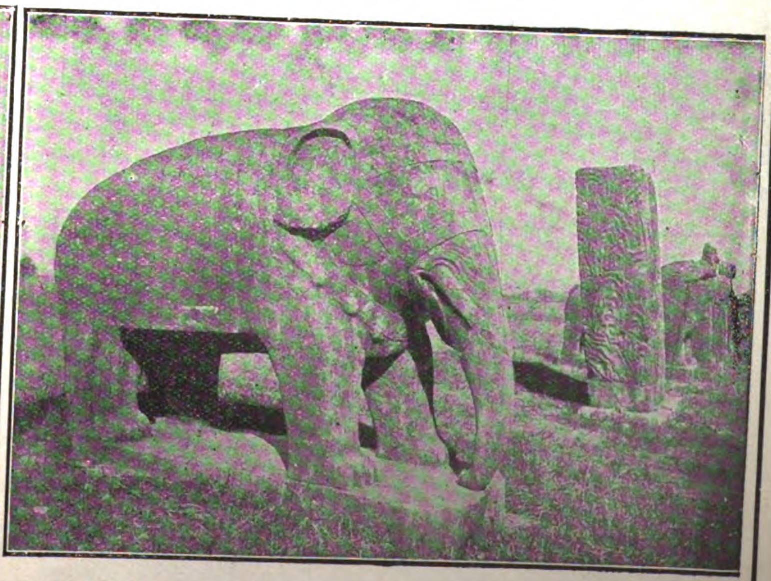

BIRD'S EYE VIEW OF KIRIN CITY

NOTICE:—"dept."=Departure. "arr."=Arrival.
1st May, 1915, and until further notice.

# THE PIENLO RAILWAY

## (KAIFENG-FU TO HONANFU)
## "THE FIRST SECTION OF THE PROJECTED CENTRAL TRUNKLINE"



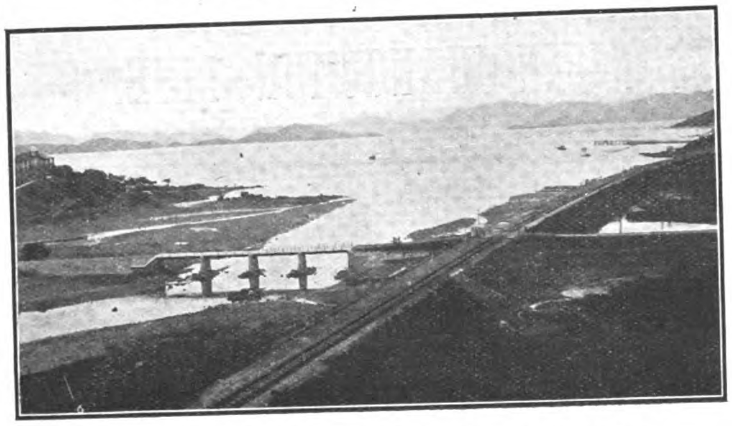


THE SUNG TOMBS NEAR KAIFENG-FU ON THE PIENLO RAILWAY.

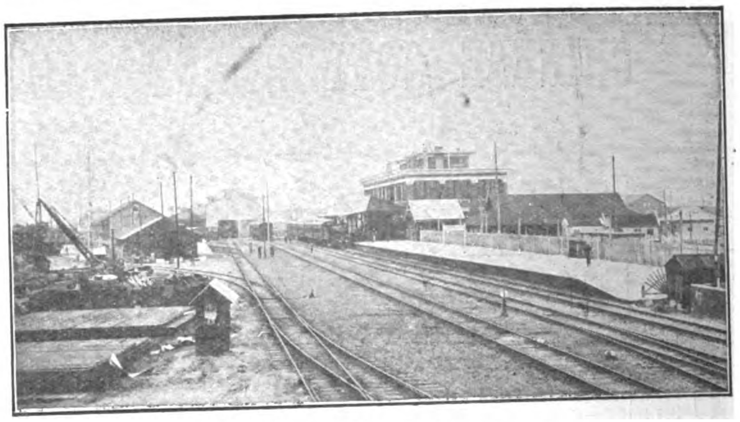
The line connects with the through service of the Peking-Hankow Railway at Tcheng Tchéou, enabling the traveller to visit Kaifengfu, the provincial capital of Honan, and the old capital of the Empire at Honanfu.

# CANTON-KOWLOON RAILWAY

**VIEWS ON THE BRITISH SECTION (22 MILES)** **VIEWS ON THE CHINESE SECTION, 89 MILES. (Chinese Government Railways)**

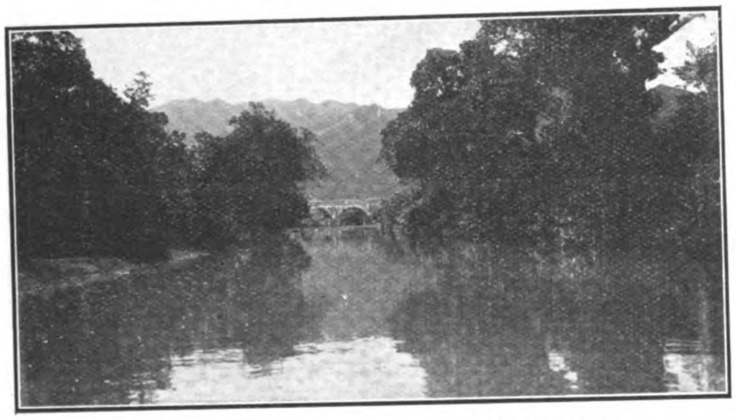


CANTON-KOWLOON RAILWAY—APPROACH TO KOWLOON

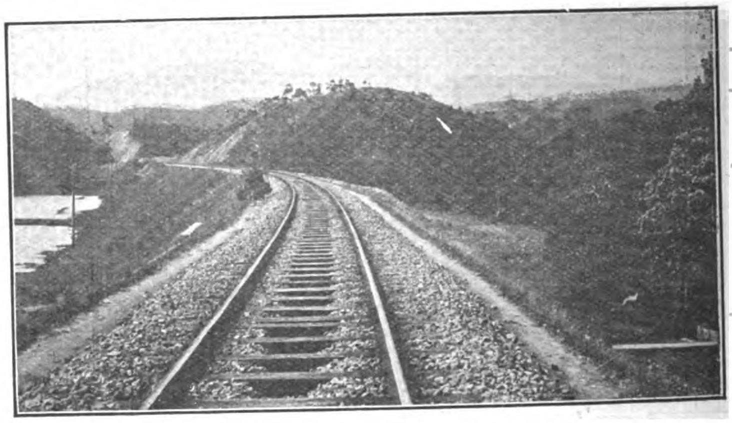


TAI SHA TAN STATION, CANTON

**QUICKEST AND CHEAPEST ROUTE BETWEEN CANTON AND HONGKONG THROUGH VARIED AND BEAUTIFUL SCENERY**

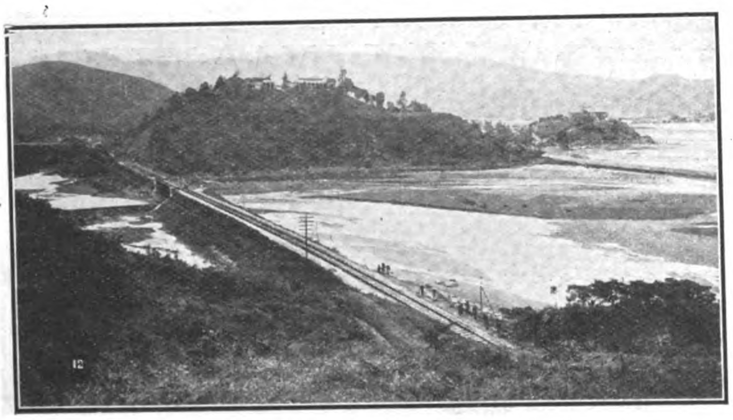


CANTON-KOWLOON RAILWAY—SCENE ALONG ROUTE

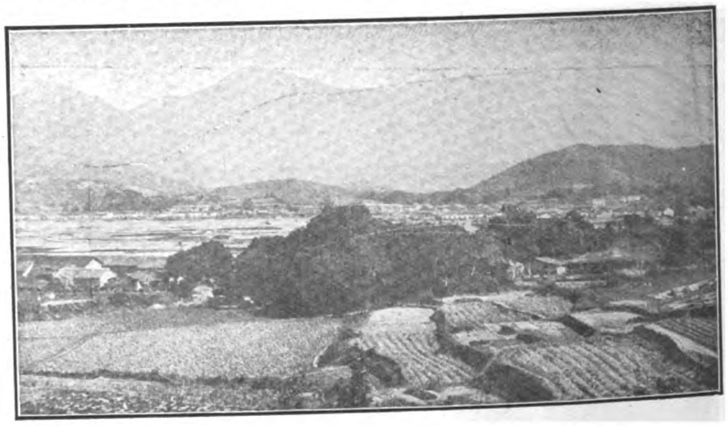


NEAR LE LOONG, CANTON-KOWLOON RAILWAY

**TWO EXPRESS CORRIDOR TRAINS EACH WAY DAILY—HOT MEALS AND OTHER REFRESHMENTS SERVED**

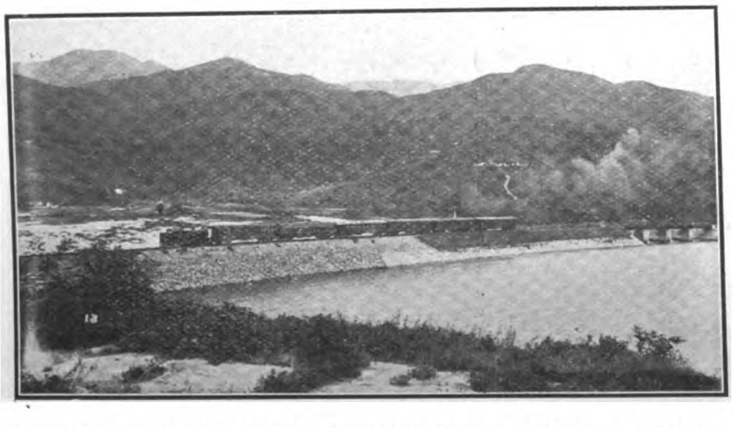


CANTON-KOWLOON RAILWAY—CROSSING TIDE FLATS

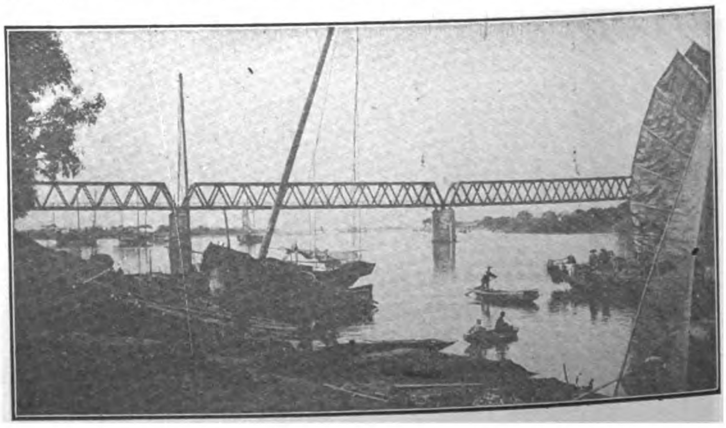


VILLAGES, CANTON-KOWLOON RAILWAY

**4¼ HOURS BETWEEN UP AND DOWN TRAINS FOR BUSINESS MEN OR TOURISTS AT CANTON OR HONGKONG**



CANTON-KOWLOON RAILWAY—EMBANKMENT APPROACH TO BRIDGE



EAST RIVER BRIDGE, CANTON-KOWLOON RAILWAY

## TIME TABLE

**Leave Hongkong (Kowloon) 8.05 a.m., 9.30,* 11.15 a.m., 11.55* a.m. & *3.15 p.m.**
**Arrive Canton (Tai Sha Tau) 11.45 a.m. 5.20 p.m. 3.50 p.m. 7.15 p.m.**

**Leave Canton (Tai Sha Tau) 7.25,* 8.35 a.m. 12.30* noon & 3.20* p.m.**
**Arrive Hongkong (Kowloon) 11.00 a.m. 4.35 p.m. 4.00 p.m. 6.55 p.m.**

**Special terms and special trains for large tourist parties. For further particulars see advertisements or apply to**

**The Manager (British Section) Kowloon, HONGKONG**

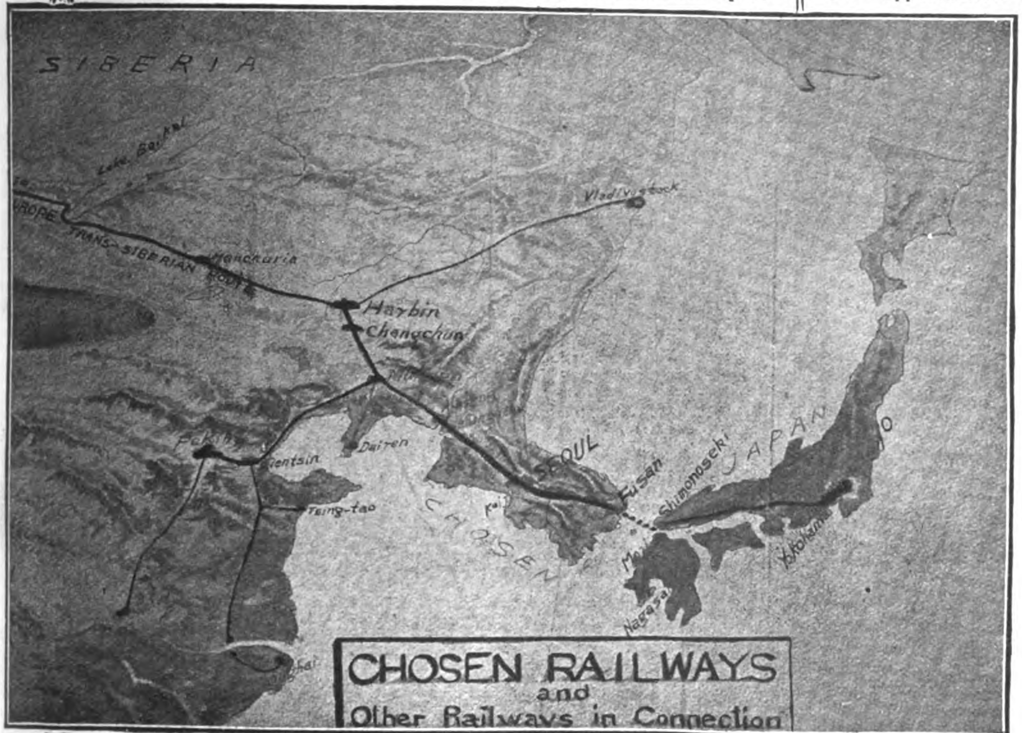
**The Administration (Chinese Section) CANTON.**

***Express**

# Chosen Railways

**Most Important Link in the Round-the-World Routes via Siberia.**
**Safest and Quickest Overland Route between Europe or China and Japan.**

**Only 10 hours, Sea Passage between the Continent and Japan.**
**Best Opportunities for studying Unique Conditions in the Far East.**




## *Chosen-Manchuria Express*

**Fusan-Keijyo (Seoul)-Mukden-Changchun**

Weekly Service. Most Up-to-date Accommodation: 1st and 2nd Class Sleeping Cars and a Dining Car.

CONNECTIONS:

With the Trans-Siberian Express.
With the Tokyo-Shimonoseki Train de Luxe.
With the Peking-Mukden Train de Luxe.

## *Daily Express*

**Fusan-Keijyo-Antung**

Twice a day Service, taking all class Cars, besides 1st and 2nd Class Sleeping Cars (Keijyo-Fusan section only) and a Dining Car.

CONNECTIONS:

With trains on the South Manchuria Ry.
With express trains on the Japanese Rys.

## *Through Traffic*

Stations open to through traffic are as follows:—

**South Manchuria Railway.**—
Dairen, Changchun, Mukden, Yingkou, etc.

**Chinese Eastern Railway.**—
Tsitsihar, Manchuria and Harbin.

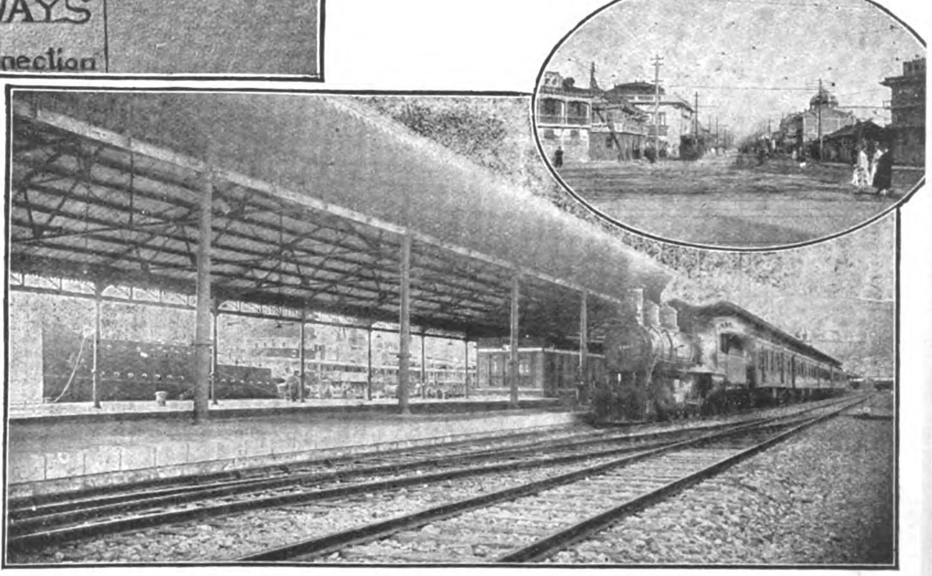
**Chinese Government Railways.**—
Hsinmingfu, Shanhaikuan, Peking, Tientsin, Shanghai, Nanking, Tsinanfu, Hankow, Nankow and Kalgan.

**Russian State Railways.**—
Irkutsk, Odessa, Warsaw, Moscow and Petrograd.

**Chosen Railways.**—
Fusan, Keijyo (Seoul) Heijyo, † Jinsen and † Chinnampo.

**Japanese Railways.**—
(via Chosen)
Tokyo, Yokohama, † Nagoya, Kyoto, Osaka, Kobe, Shimonoseki, Moji and Nagasaki.

† No through traffic to or from points of the Chinese Eastern Railway and the Russian State Railways.



Fusan Pier A scene in Keijyo (Seoul)

## *Ticket Agencies*

The International Sleeping Car Company; Messrs. Thos. Cook & Son; The Nordisk Resebureau.

## *Hotels*

Under the Direct Management of the Railway Bureau.

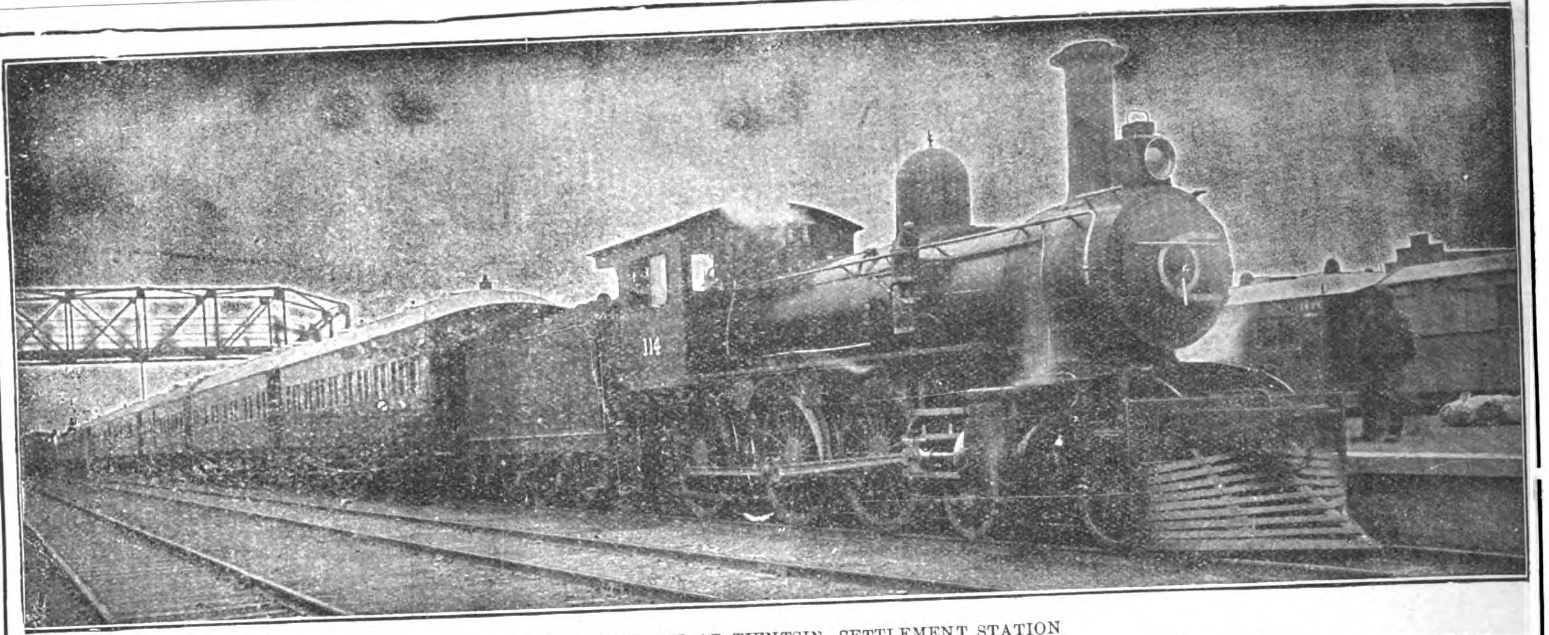
CHOSEN HOTEL AT KEIJYO (Seoul).—Cable Add: "CHOHO" 80 bedrooms mostly with bath; Motor-cars meet guests at the station.

STATION HOTELS AT FUSAN AND SHINGISHU.—The most convenient and comfortable stopping places on the upper floors of the two station buildings.

**FOR FURTHER PARTICULARS PLEASE APPLY TO**

# Railway Bureau of the Government-General of Chosen,

**Cable Add: "SENTETS."** **Ryuzan, Chosen.** **Code Used: A. B. C., 5th Edition.**



TRAIN DE LUXE AT TIENTSIN SETTLEMENT STATION

# CHINESE GOVERNMENT RAILWAYS OF NORTH CHINA

THROUGH SERVICE FROM PEKING TO MUKDEN, CONNECTING AT MUKDEN WITH THE SOUTH MANCHURIA EXPRESS FROM TRANS-SIBERIAN ROUTE: AT PEKING CONNECTION IS MADE WITH THE PEKING-HANKOW RAILWAY FOR HANKOW AND YANGTSZE PORTS, AND INTERMEDIATE POINTS REACHED BY THE CHEN-TAI LINE TO TAIYUANFU, THE TAO-CHING LINE, AND THE PEINLO RAILWAY TO KAIFENGFU AND HONANFU. CONNECTION IS ALSO MADE AT PEKING WITH THE PICTURESQUE KALGAN LINE, "THE ROAD TO THE GREAT WALL."

## THE RAILWAYS OF NORTH CHINA PASS THROUGH THE MOST INTERESTING PART OF CHINA

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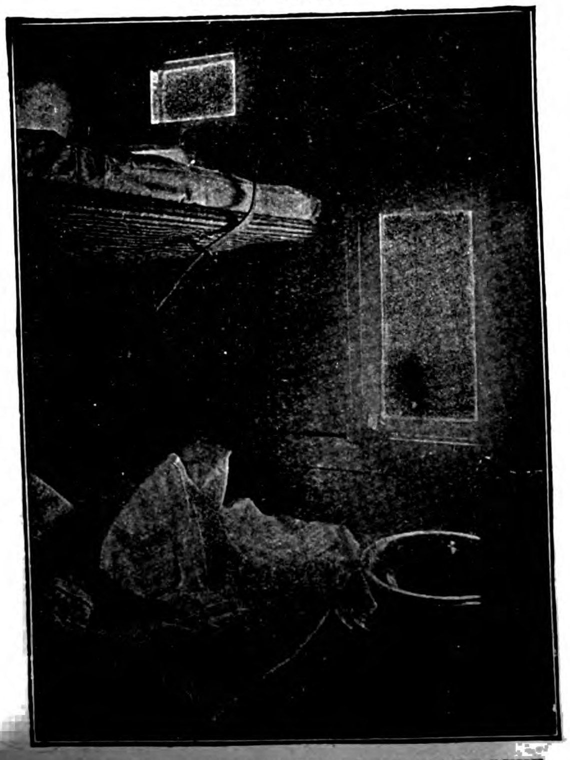
**PEKING**: THE CAPITAL, WITH ITS WALLS, PALACES, TEMPLES AND TOMBS.—**TIENTSIN**: THE GREAT TRADE CENTER OF NORTH CHINA. —**TONGSHAN**: THE LARGEST MINING AND INDUSTRIAL TOWN IN THE COUNTRY.—**SHANHAI-KWAN**: WHERE THE GREAT WALL ENDS AT THE SEA.—**NEW-CHWANG**: THE BUSY COMMERCIAL PORT OF MANCHURIA. —**MUKDEN**: THE ANCESTRAL HOME OF THE MANCHU DYNASTY. A MINIATURE PEKING, WITH ITS WALLS, IMPERIAL PALACES, TEMPLES AND TOMBS.



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THE THROUGH TRAINS ARE EQUIPPED WITH BUFFET AND DINING CAR SERVICE, AND A COMFORTABLE, MODERN TRAIN DE LUXE OF COMPARTMENT SLEEPING COACHES HAS BEEN PLACED IN OPERATION THIS SEASON TO CONNECT WITH THE THROUGH SERVICE OF THE TRANS-SIBERIAN AND SOUTH MANCHURIAN RAILWAYS

For further information apply to any office in America or Europe of

## The Cie. Internationale Des Wagons-Lits, Thos. Cook & Sons, or Railways of North China

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**By order of Directorate**

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W. W. STEEL,
Tin and Sheet Iron Work,
Stove Repairing,
Roofing, Spouting and Furnace Work a Specialty.

Roaring Spring, Pa. 8/25 1915

The American Rolling Mill Co.
Middletown Ohio.

Dear Sirs:

I shipped you to-day by Expr. The elbows mentioned some time ago. The one stamped Ingot the other Charcoal. I put them up on Mr J. C. Hoovers residence Aug 10- 1910. Replaced new ones May 1- 1915. The Ingot shows no signs from the rust one above it. We have a paper mill in our town. And I find there is nothing outside of copper that stands like Ingot. I use it only in Galvd and Terne plates. Yours Truly

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Sold as Genuine Charcoal Iron But on analysis proves to be Steel

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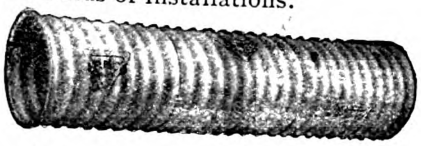
far better than Steel or other irons. Galvanizing and other protective coatings are more lasting on Armco Iron because of the comparative absence of solid and gaseous impurities. This too adds decidedly to service life.

### Armco Iron Corrugated Culverts

for highway and railroad drainage, have proven their convenience, reliability and lasting quality in thousands of installations.



Their corrugated form and interlocking joints give them immense strength and a *resiliency* which enables them to conform without injury to settling and shifting foundations.

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**Middletown, Ohio, U.S.A.**
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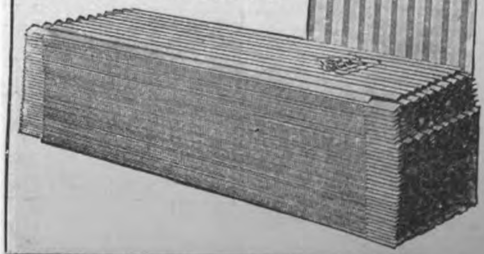
### Armco Iron Galvanized Corrugated Roofing and Siding

will certainly save money in the long run for those who have buildings to maintain in tropical climates or where they are exposed to dampness or salt air.



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SHANGHAI TERMINUS OF THE SHANGHAI-NANKING RAILWAY

**THREE EXPRESS SERVICES DAILY, WITH RESTAURANT AND SLEEPING CARS BETWEEN SHANGHAI, SOOCHOW, WUSIH, CHANGCHOW, CHINKIANG AND NANKING**

**SEE THE NANKING BATTLE-FIELDS**

THE WALLS OF NANKING

**DELIGHTFUL WEEK END EXCURSIONS**

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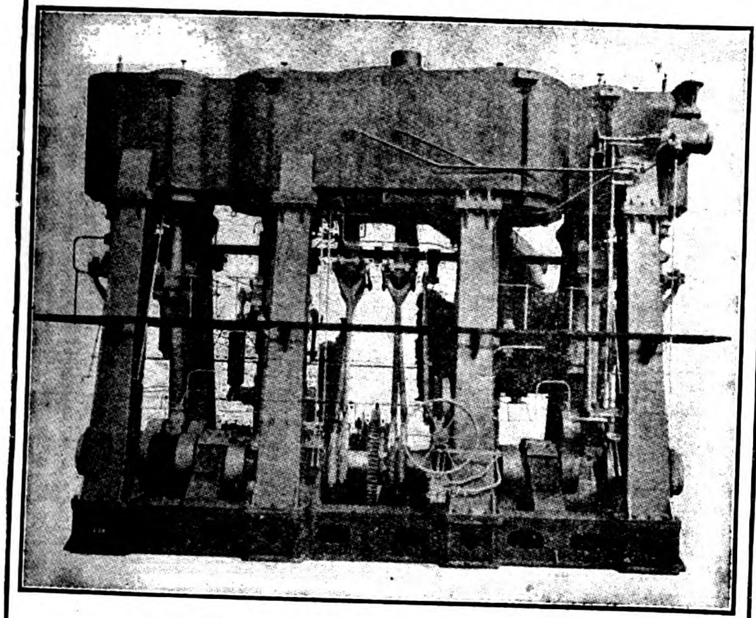
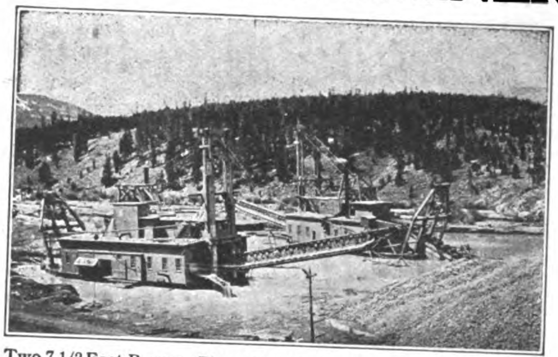


QUADRUPLE ENGINES.

BUCYRUS PLACER DREDGE MACHINERY



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*We also build steam and electric shovels, dredges and dragline excavators of all types and sizes.*

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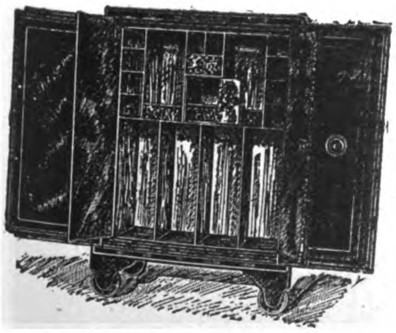

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STEEL PLATES for Shipbuilding, Tanks, Boilers, etc.; FLANGE and FIRE BOX STEEL;
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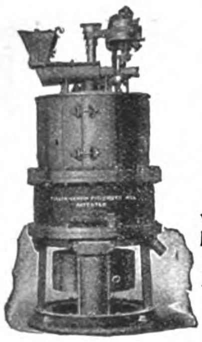
**The Most Economical Mill for Pulverizing Various Refractory Materials.**



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| ASBESTOS ROCK | CEMENT CLINKER | DOLOMITE | GRAPHITE | LITHOPONE | PLASTER | TALC |
| ASPHALT FILLER | CHALK | FELDSPAR | GYPSUM | MAGNESITE | PORTLAND CEMENT | TRIPOLI |
| BARYTES | CHARCOAL | FIRE CLAY | HYDRATED LIME | MARBLE | PUDDLER'S SLAG | TUFA |
| BAUXITE | CHROME ORE | FLUOR SPAR | IRON ORE | OCHRE | QUARTZ | UMBER |
| BITUMINOUS COAL | CLAY | FOUNDRY FACING | KAOLIN | ORES | SHELLS | VANADIUM ORE |
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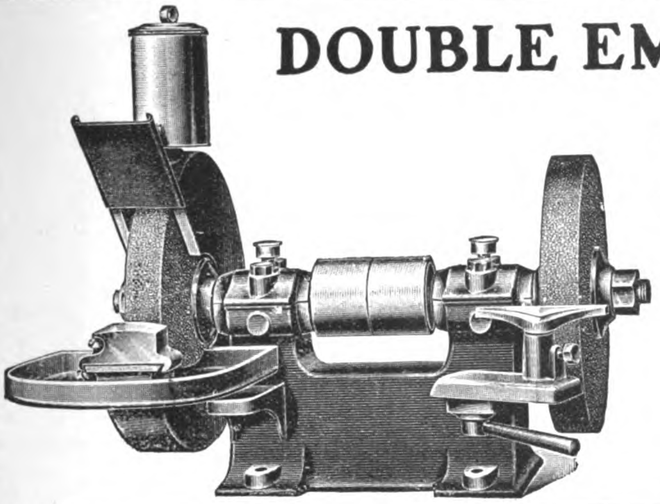

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**SPECIFICATION.**

Cast iron body, mild steel spindle 1″ diameter, plain white metal bearings, fast and loose pulleys on grinding spindle; arranged on left for wet tool grinding, and fitted with trough, bowl-tray, hood and drop-can, and on right with adjustable rest for general grinding. Complete with two best quality "Atlas" Emery Wheels 12″ × 1½″.

***Can also be supplied for wheels 14″ × 2″ and 16″ × 2″.***

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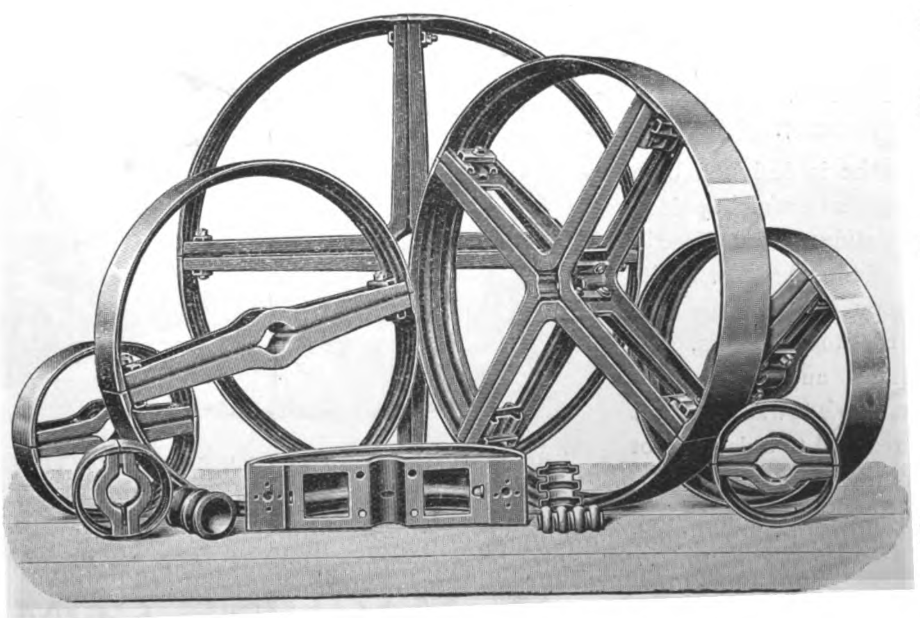

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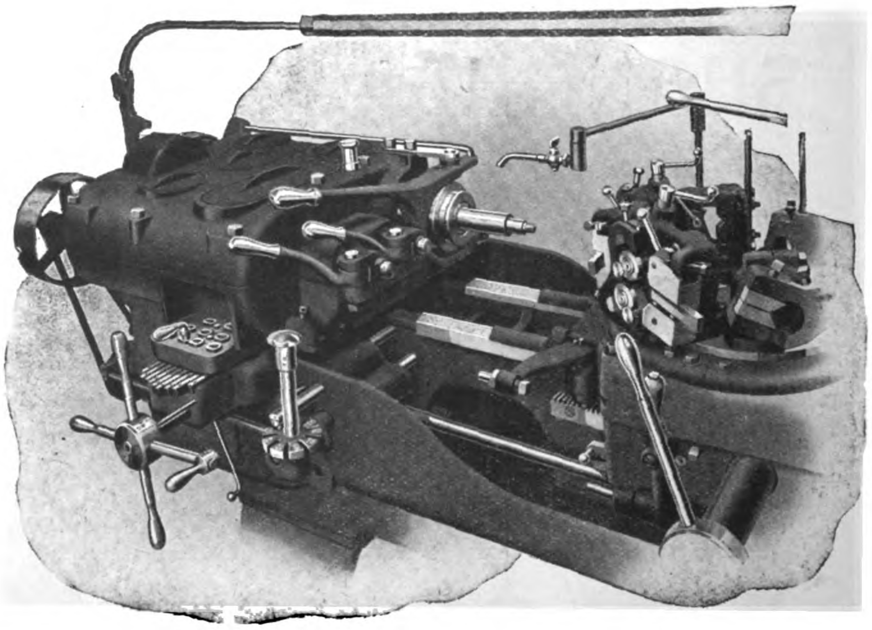

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THE FAR EASTERN REVIEW

COMMERCE :-: ENGINEERING :-: FINANCE

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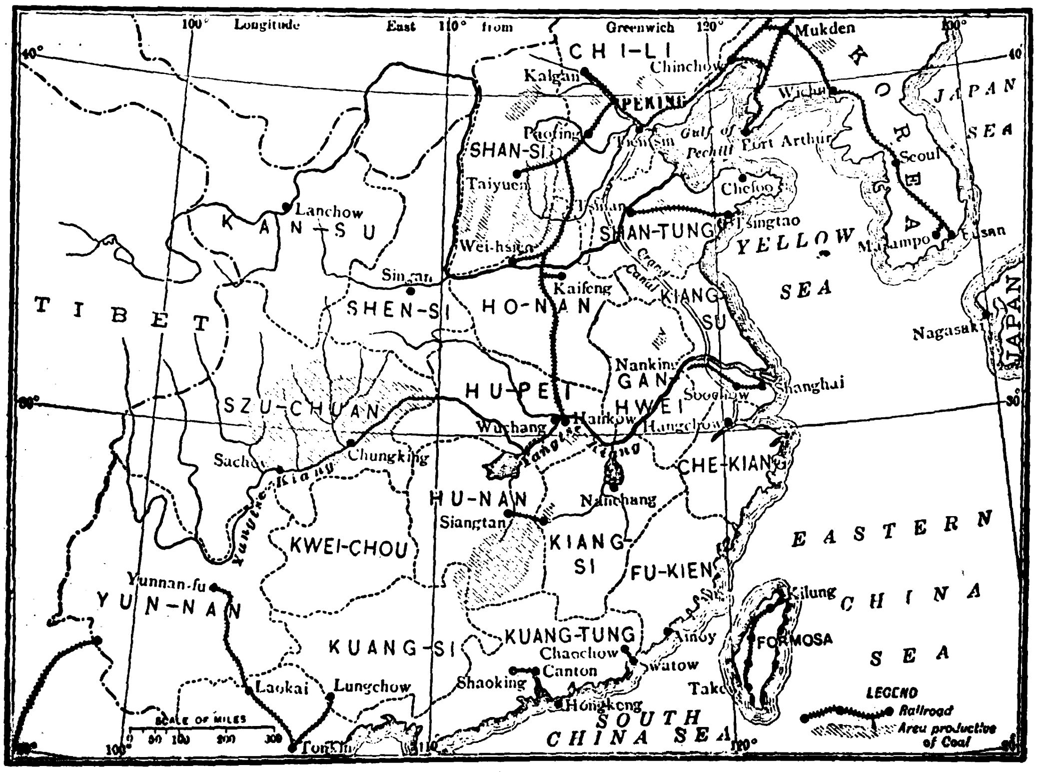
# THE COAL RESOURCES OF CHINA

[BY V. K. TING,* DIRECTOR OF THE GEOLOGICAL SURVEY, CHINA.]

Since the time of Richthofen, the celebrated geologist and traveller who explored the greater part of Eastern Asia in 1868-1872, China has been reputed to be one of the richest countries in coal. Nor is this reputation ill-founded, for although some of the earlier estimates were undoubtedly too high, she is admitted to-day to have the largest coal reserve in Asia and with the exception of the United States and possibly Canada, also the largest in the whole world. Of course owing to the lack of accurate surveys it is impossible yet to give the exact tonnage of her reserve, but foreign explorers and engineers and recently the members of The Geological Survey of China have done a sufficient amount of reconnaissance work to enable us to make rough estimates of the probable resources.




MAP OF CHINA, SHOWING COAL AREAS

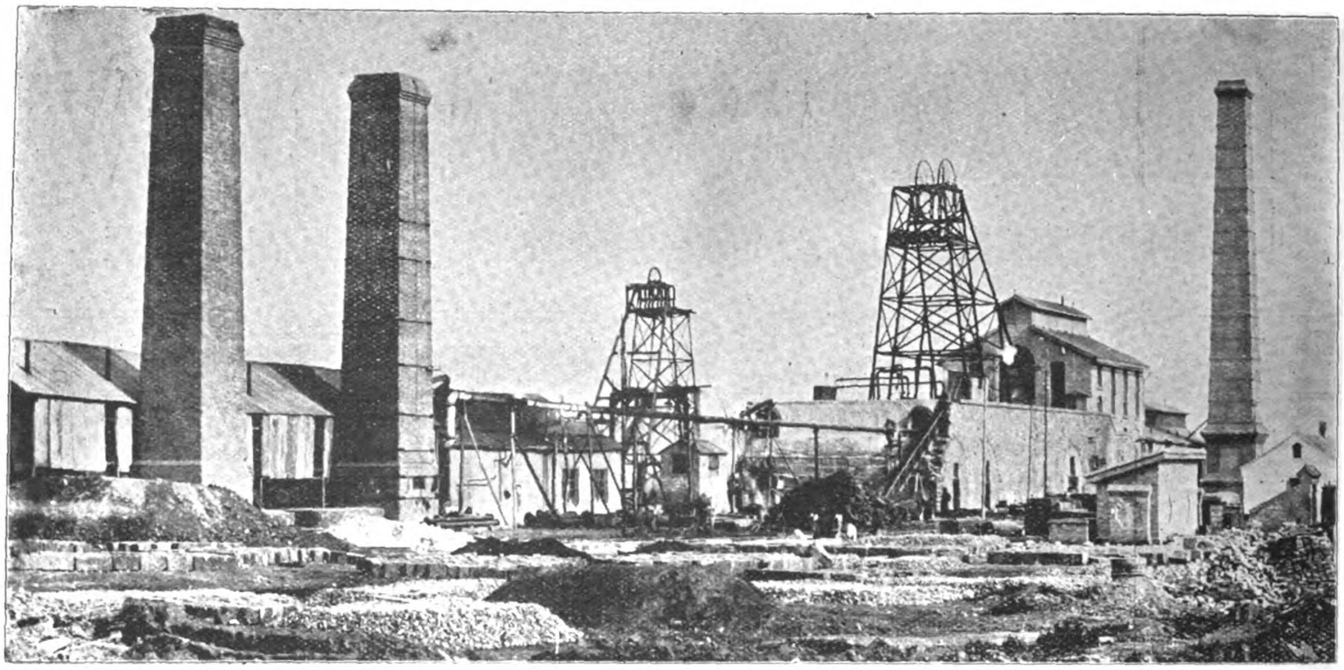
## Geographical Distribution

Coal is very widely distributed throughout China; there is not a single province in which coal is not known to occur, but some are much more favoured than others. The north-eastern provinces, Shansi, Chihli, Shantung and Honan are undoubtedly most important. Shansi is in fact the richest of all. Inner Mongolia as well as Manchuria are fairly well supplied with coal though in the former case it is less known. The north-western provinces are much poorer, though Kansu and Turkestan contain numerous coal fields. The same may be said of the Yangtze Valley and the south-eastern coastal region where the possibility of finding coal is limited by unfavorable geological conditions. The provinces of Hunan and Kiangsi are the exceptions, especially Hunan, which is the Shansi of southern China. The western and south-western provinces are known to possess coal in very numerous localities, but on the whole they are much less important as the coal seams are usually much thinner and the fields are broken up into small patches.

## Geological Occurrence

The most important coal deposits are of Permean or Upper Carboniferous age. The great coal basins now worked on a large scale in northern Chihli, Shansi, Shantung and Honan all belong to this formation. They are underlaid by the great Ordovician limestone below and covered by sandstone of continental origin. This is, however, by no means the only coal that occurs in China. The fine coal field of Fushun in Manchuria, with its extraordinary

[* An informative article on the Tungchwanfu, Yunnan, Copper Mines, was written by Mr. V. K. Ting and published in the FAR EASTERN REVIEW in November, 1915.]



JAMISEN COLLIERY ON TAO-CHING RAILWAY

thickness of 120 ft., is of tertiary age and is now worked by the South Manchuria Railway Company, producing about 5,000 tons daily. The famous coal fields of Tatungfu in northern Shansi and many of the smaller coal basins in Chihli and Mongolia, as well as the coal in the so-called "red basin" of Szechuan, are Jurassic. The best coal in Yunnan and Kweichou is Trassic, whilst the lignite found in the dried-up lake regions in the two above-named provinces may prove to be younger than Tertiary. It is safe to say, however, that the Permo-carboniferous coal is by far the most important, for it includes not only the greater reserves of northern China, but also, those in Hunan and Kiangsi, the only two provinces south of the Yangtze that possess coal fields of any importance.

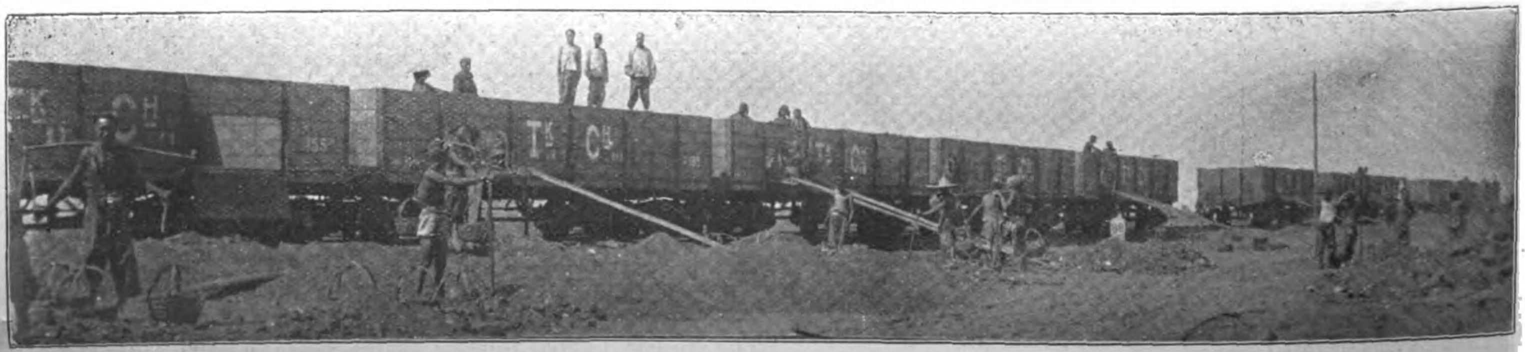
## Quantity

The most recent attempts to estimate the tonnage were made by Inouye and Drake in the "Coal Resource of the World." The following are the figures arrived at by the two authors:—

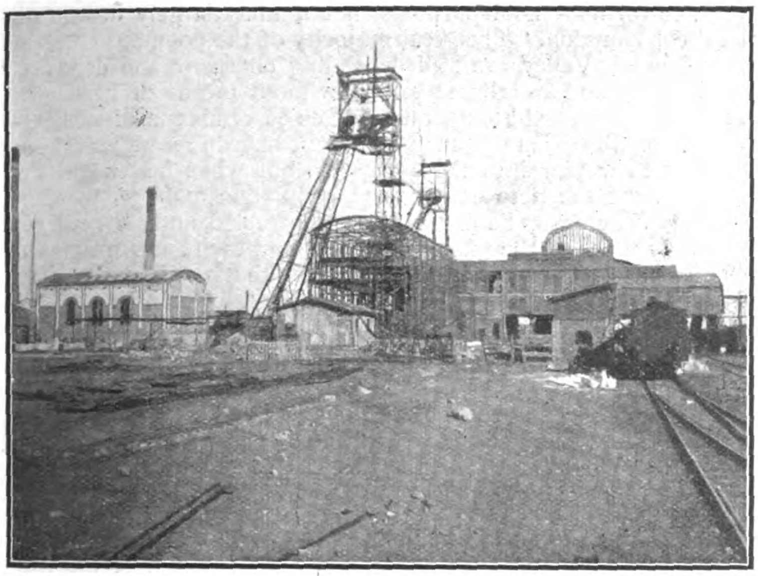
| | By Drake | By Inouye (Probable reserve) |
|---|---|---|
| Mongolia | 1,200,000,000 metric tons | — |
| Chihli | 22,668,000,000 | 3,080,000,000 |
| Shantung | 7,083,000,000 | 650,000,000 |
| Shansi | 714,340,000,000 | 1,200,000,000 |
| Shensi | 1,050,000,900 | — |
| Kansu | 5,129,000,000 | — |
| Honan | 9,275,000,000 | 200,000,000 |
| Kiangsu | 10,000,000 | — |
| Anhui | 187,000,000 | — |
| Hupei | 117,000,000 | — |
| Chekiang | 24,700,000 | 120,000,000 |
| Fukien | 25,000,000 | 80,000,000 |
| Kiangsi | 3,395,000,000 | 1,435,000,000 |
| Kuantung | 1,009,000,000 | — |
| Kuangsi | 500,000,000 | — |
| Hunan | 90,000,000,000 | 17,000,000,000 |
| Szechuan | 80,000,000,000 | 15,000,000,000 |
| Kweichow | 30,000,000,000 | — |
| Yunnan | 300,000,000,000 | — |
| Manchuria | — | 1,208,000,000 |
| Total | 996,612,700,000 | 39,973,000,000 metric tons |

The apparent discrepancy is explained by the fact that Drake attempted to make a complete estimate by summing up all known data, whilst Inouye gave practically all that is known to the Japanese Geological Survey: hence his estimates for Fukien and Chekiang, the two provinces best known to the Japanese, are higher than those given by Drake, although in all other cases his figures are much lower. The term "probable reserve" used by Inuoye is somewhat misleading, as his figures suggest totally wrong ideas of the relative importance of the different provinces. How can a province like Kiangsi, for example, be made to possess a greater amount of "probable reserve" than Shansi? It is therefore necessary to remember that Inouye's extremely interesting article is, properly speaking, a summary of Japanese knowledge of Chinese coal fields and can in no sense be regarded as an estimate of the total probable reserve.

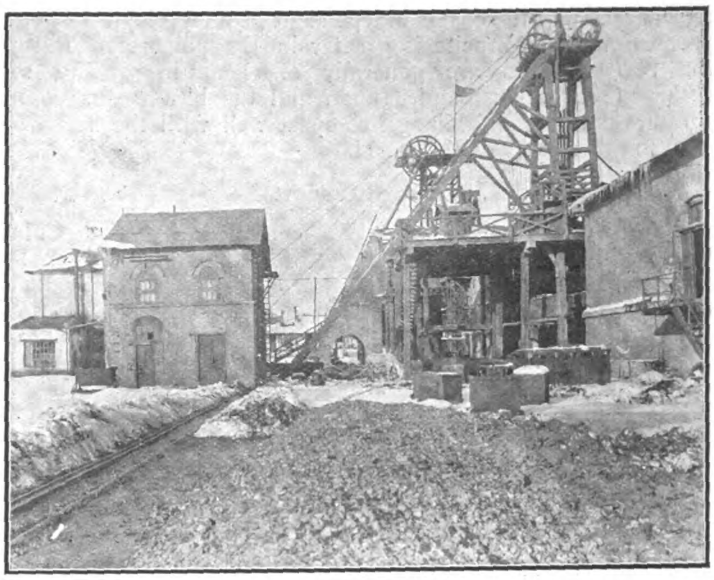
Drake's attempt is much nearer to the truth though much of it is guess work. He himself remarked that the figures for Shansi, Yunnan and Kweichow might be too large. This is certainly the case. His source of information was chiefly Richthofen and Leclere. The former perhaps somewhat overestimated the coal resource of Shansi as he certainly did in the case of iron, and Leclere's work on Yunnan and Kweichow proved



LOADING A COAL TRAIN ON TAO-CHING RAILWAY

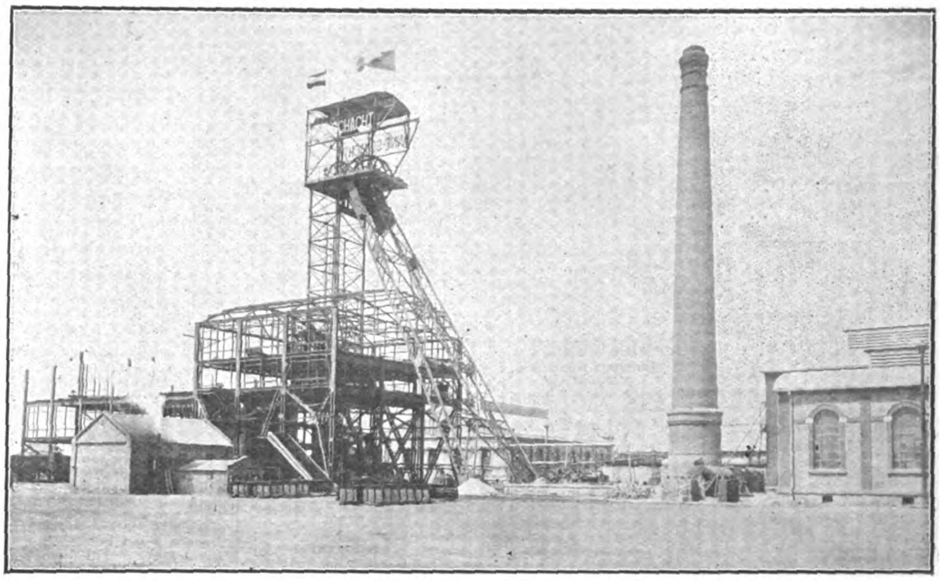


View of the Hungshan Mine



Tangshan Mine—Headframe of No. 2 and 3 Shafts

to be erroneous—a country much complicated by deep folding and faulting was supposed by him to be a simple plateau, hence his estimate must be many times too large. On the other hand those for Chekiang, Fukien, Kiangsi, Anhui and Mongolia are all too small. In the case of the first two provinces, Inouye's figures prove the point. The recent work of Dr. Wong, a member of The Chinese Geological Survey, shows that in Kiangsi the coal field of Pingsiang stretches itself in the E. E. N. direction through the district of Funcheng and Loping to Fouliang in the northeast. This immense belt alone would give a reserve equal to that given by Drake for the whole province, and other smaller coal fields are also known in Kiangsi. The same worker shows also that in western Inner Mongolia the Jurassic coal amounts to over two billion tons. Both Inouye and Drake gave very incomplete accounts of Anhui. The numerous fields in northern Anhui, namely, Shusung, Taihu, Shuchow and Hweiyuan, were apparently unknown to them, and the latter's description of southern Anhui, taken chiefly from Ishii's report, is very inaccurate and misleading. Again no mention was made of Chinese Turkestan which contains at least as much coal as Kansu, its eastern neighbor.

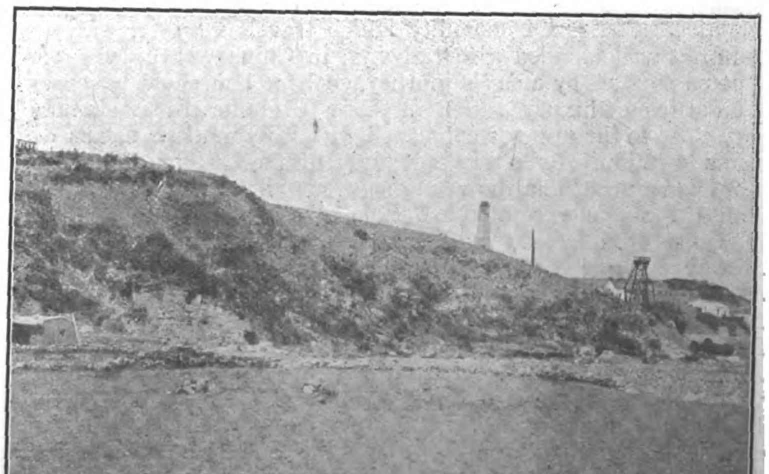


Shantung Mining Company Shaft

On the whole, however, Drake's total figure is certainly of the right order of magnitude though the figures for individual provinces are very uncertain. It is in fact futile to try to arrive at more exact conclusions as sufficient data do not yet exist, but it is correct to say that as far as present knowledge goes 100,000,000,000 metric tons is a fair minimum figure, but the real reserve is probably ten times as large. Taking the total production for the whole world to be roughly one billion tons per year, then China is probably capable of supplying the whole world with coal at the present rate for the next 1,000 years.

## Quality

Both bituminous coal and anthracite occur in China, but the latter is probably more extensive, as the coal in Shansi and Hunan, the two richest provinces, is largely anthracite. Anthracite has been in fact more readily used by the Chinese because it can be burnt in open stoves without chimneys. The bituminous variety has in recent years acquired increasing importance, as the coal now worked on a large scale is mostly bituminous; in fact out of about twenty machine-worked mines, only three are mining anthracite, i.e., the Peking Syndicate in Honan, the Poaching Mining Co. in Shansi and the Tungshin Company in Mentakou, west of Peking. Though



Mentakou Coal Mine, near Peking

the character of the coal is independent of its geological age, the proportion of anthracite is greater in the paleozoic. Both of the two varieties are generally excellent in quality. The anthracite of Shansi and Hunan and the bituminous coal of Chihli, Shantung and Kiangsi compare well with the best of its kind in other parts of the world.

### Production

According to the statistics compiled by the Chinese Geological Survey the production of coal of all kinds in 1913 was about fifteen million metric tons. They are distributed in the various provinces as follows:

| | metric tons. |
|---|---|
| Chihli | 2,701,000 |
| Shansi | 2,868,000 |
| Hunan | 1,200,000 |
| Honan | 1,463,000 |
| Shantung | 1,120,000 |
| Szechuan | 1,002,000 |
| Kiangsi | 949,000 |
| Fentien | 1,805,000 |
| Ki in | 44,000 |
| Helungkiang | 230,000 |
| Yunnan | 86,000 |
| Kansu | 30,000 |
| Turkestan | 600,000 |
| Kweichou | 100,000 |
| Shensi | 100,000 |
| Anhui | 10,000 |
| Kwantung | 12,000 |
| Kwangsi | 10,000 |
| Kiangsu | 25,000 |
| Chekiang | 10,000 |
| Hupeh | 100,000 |
| Fukien | 50,000 |
| Total | 14,515,000 |

These figures are, of course, not exact though great pains have been taken in compiling them, for only the modern mines can furnish anything like exact statistics and these produce only about one half of the total amount. The rest is produced by tens of thousands of small shafts scattered all over the country. Their production has been estimated according to the number of shafts and miners. Many of them must have escaped notice and the above figures are really a minimum estimate. It is to be remarked that the total figure agrees tolerably well with that given by Inouye who thought it to be between fifteen and twenty million tons.

### Future Development

From the above statement it is clear that the consumption of coal in China is surprisingly small when compared with her population. It is simply caused by the lack of transport facilities. Coal is a commodity which travels very far only in countries well supplied with railways, in China where the price is often doubled by a day's journey, coal for household purposes is an article of luxury except in those fortunate places situated very close to the mine or connected with it by modern means of communication. Even a casual study of the history of mining development in China shows at once that all the big coal mines with the single exception of Pinghsiang, which supplies the Hanyang Iron Works with coke, are closely connected with railway enterprise. The Kailan and the Fuchun mines could never have existed without the Tientsin-Mukden and the South Manchuria Railways. Shansi anthracite, entirely unknown a few years ago, now finds a ready market in the Yangtse Valley. As time goes on the projected railways are bound to be built and what impetus they will give to coal mining! For example, if the Haichow (in Kiangsu)—Langchow (in Kansu) railway is completed, it will not only open up the Southern Honan coal fields, but the Mesozoic basins of Shensi, and Kansu will also be tapped.

The rapidity of development will be different for different kinds of coal. Anthracite is to some extent preferred by the Chinese for household purposes, but it must largely depend on local consumption. The great majority of the populous cities in the Yangtze Valley are still depending on straw and dry grass for cooking and are almost totally without means of heating in the winter though the temperature often descends considerably below zero. Shansi and Hunan anthracite have in recent years been making their way into these regions, but when better business methods are taken to educate the population at large, the consumption can easily be doubled or even trebled, and we need not seriously believe the stories of the anthracite merchants in Shanghai who are ever ready to insist that the Yangtze cities have got as much anthracite as they can possibly consume.

For bituminous coal there is an enormous market—1,500,000 tons of it are imported every year from foreign countries, especially Japan, because not only do the numerous steamers demand a great supply, but the newly established factories of oil, cotton and silk increase it still more. Again Hongkong, the biggest shipping centre in the Far East, consumes another million. Part of it comes from Australia but Japanese coal—known as Miike—is most important. It has the disadvantage of being rather sulphurous. The Chinese coal is on the average better in this respect and successful competition is purely a matter of organization. Another potential market for coking coal is the smelting furnace. Nearly 100,000,000 tons of pure high-grade iron ore are known to exist on the very bank of the Yangtze River and they are bound to be developed in the near future and that will largely increase the demand for bituminous coal.

In this respect it is important to consider the waterways especially the Yangtze River. It is something of a surprise that many of the coal fields so near to the mighty river have not been developed at all. No doubt the geological conditions here are less favorable than in the north; folding and faulting often deteriorated the quality or diminished the quantity. But some fields of considerable size and good quality are so excellently situated geographically that it is a wonder that they have not been chosen in preference. The reason is perhaps because they are mostly not in active working by Chinese miners as the coal above water level had long since been taken out. They are therefore more difficult to prospect and less impressive to the unscientific than the northern coal fields which, owing to the demand caused by climatic necessity, and to the relatively modern development, were still actively mined before the advent of European methods. Again in the time of the Manchu dynasty legitimate mining was greatly hindered by official obstruction and the big mines in northern China were either opened up directly in connection with railways or acquired by questionable methods of concession. The mining law of 1914 is certainly incomparably better than any that was framed in the Manchu dynasty, though foreign capital is somewhat put at a disadvantage. The Chinese Government is fully aware of the fact and a revision is actually under consideration:* When a more generous and simpler mining law comes into existence, there is nothing to prevent European capitalists investing their money in Chinese coal mines, as cheap labour and ready markets will give them considerably higher profits than the average coal mines in Europe or America, as is clearly shown by the best managed mines now existing in northern China.

## JAPANESE SPECIE HOLDINGS

The amount of Japanese specie both at home and abroad has now reached 600,000,000 yen, of which 190,000,000 yen is owned by the Government and 410,000,000 yen by the Bank of Japan. Of the amount, 170,000,000 yen is at home, 300,000,000 yen in Europe and 130,000,000 yen in the United States. The amount at home is owned by the Bank of Japan entirely and of the amount in the United States, about 100,000,000 yen is possessed by the Government.

[* See article "Proposed Remodelled Mining Laws for China" in May issue.]

# "THE WHITE PERIL"

## A Japanese Military Writer Urges Japan to Prepare to Fight the World.

### The Bogey of Isolation Raised to Justify the Apotheosis of Militarism.

**We publish below the second instalment of a translation, or rather paraphrase, of a remarkable book published in Tokyo in November, 1915. The book is entitled "The Japanese Empire after the War," and the writer, who hides his identity behind initials, is obviously a Japanese military officer on the reserve list. The object of the writer is frankly militaristic. He seeks to inspire the Japanese people with the belief that the Empire is in danger of being conquered by the white races, after they have patched up their own differences. To avert this disaster, he declares, augmentation of the army is imperative. To make his case good the writer gives with refreshing frankness his opinion of the European nations and America. As an indication of the strength of the hold that militarism has obtained in Japan the book is well worth studying, and we have no doubt that the instalment now printed, and those that will follow, will be read with interest.**

### CHAPTER IV

#### Germany's Policy

1. *Germany vis-a-vis Britain.*—The greatest desire of Germany is to see the supreme, worldwide influence of Britain destroyed. It is for this purpose that she has been expanding her navy and army. Her Bagdad railway policy is only a means directed towards this great plan. By combining with Austria, Rumania, Bulgaria and Turkey, Germany designed to spread her influence over Asia Minor, then subdue Persia and finally establish a great Germanic Empire which would overwhelm the whole of Europe. In the Far East she also started the game of swallowing China from the military base of Kiauchau.

Exponents of Pan-Germanism have long been preparing the German mind for war with Britain, by means of books and lectures. Among others, Bernhardi and Treitschke were powerful anti-British preachers. The Kaiser declared at the front that the Germans would be delivered from the hands of the oppressors of the world.

Germany's expenditure on the navy in 1898 was only 60,000,000 yen, but in 1913 had increased to 230,000,000 yen. In 1890 the Kaiser declared "Our future lies on the sea," and in explanation of the great naval expansion proposed in 1900, he made no scruple in declaring that Germany must have a navy powerful enough to vanquish the supremacy of the strongest Power in the world.

We do not know when the war will end. But this much is certain that as long as Germany exists, so long will remain the cause of Britain's woe. Germany's navy is a peril to Britain's navy.

2. *Germany's Revenge on Japan.*—Germany's desire to take revenge on Japan will be inextinguishable. She will leave no stone unturned to estrange Japan from all other nations. It may happen, however, for a short time that Germany will pretend to desire friendship with Japan out of spite of Britain.

We will summarize some typical German views on Germany's policy of isolating Japan:—

*Von Bowlhalm's (?) Views.*—"The competitors on the Pacific since Germany's retreat from that area are Russia, Britain, America and Japan. Russia's power there is very feeble, neither has America an adequate power for an aggressive policy, the country having so far opposed the principles of militarism.

"As for Britain, though she has the Suez, she cannot be said to have a sufficiently strong influence in the East, considering that the defence of Australia is left to its own resources. The one Power that possesses an absolutely free hand in the Far East is Japan.

"Japan is gradually reaching out to the Continent, trying to swallow China itself. Now that Japan has wrested Tsingtau from us at the instigation of Britain, she will connect it with Port Arthur to cut out a road to Peking and thus annex China. Then she will drive Russia out and then away goes Britain. The Russians would be driven out of Manchuria and Mongolia, and the Britons from the Yangtze by the Japanese as surely as Englishmen cleared the Atlantic coast of the Spanish, Dutch, Portuguese and French. America must of course share this fate with Britain and Russia.

"Japan in the Far East must be said to be enjoying the most fortunate position that Heaven can ever give to any nation.

"It is essential that Japan's progress should be checked so as to curb her great ambition. To effect this it will be advisable to cause friction between Japan on the one hand and Russia, Britain and America on the other. In other words, our object must be sought in breeding trouble on the Pacific. When it comes, that is the time that we shall take our revenge for Japan's robbery of Tsingtau."

*Belgel's Argument.*—It is difficult to find an argument in which there is a greater combination of audacity, ignorance, arrogance and insolence than in the following outburst of Dr. Riegel Belgel. He bases his opinion on his five years' observation in Japan, and says:—

"Japan's declaration of war against Germany was a cowardly act of robbery, instigated by Britain. That she has deliberately cut asunder the bond of German-Japanese relations is an irredeemable loss to Japan both in a spiritual and material sense. Japan has stopped the source of her own civilisation. Japan's plan towards China is to place China under her own influence and to expel all the white people from the Chinese territory. In this serious dilemma it is Germany's mission to assist China in defending herself against Japan and Russia."

Then under the chapter, "Japan's menace to America and Europe," the writer goes on to say as follows:—

"Japan will surely seek to plant her political influence in Central and South America even in contradiction to the interests of the United States. With the money she will have stolen from conquered states, she will build a gigantic fleet, and then proceed to capture territory from America as an outlet for her surplus population. Japan's occupation of the German possessions in the South Sea is nothing but a menace to British and American territories. The Americo-Japanese war on the Pacific will be as inevitable as the Russo-Japanese war was in China. Japan's policy of territorial expansion is similar to that of Britain. But though Britain has an unrivalled navy, her army is extremely weak, consisting only of hirelings, whereas Japan has a powerful army organisation based on conscription. Her navy, though inferior to the British, is nevertheless sufficiently strong to control the Oriental waters. When Japan attains this object she will throw up the Anglo-Japanese alliance. Count Okuma has once said, 'We are only suffering foreigners to make use of us so that when we are sufficiently strong, we may expel all the foreigners from the Orient.' When this prophecy becomes real, Britain will lose Australia and all her colonies in Asia and thus effect her own punishment for having betrayed the white race."

## CHAPTER V

### Great Britain's Far Eastern Policy

1. *The First Anglo-Japanese Alliance.*—After the Boxer trouble in North China, Russia redoubled her efforts to expand her political influence in Manchuria. Not only the whole of Manchuria, but also Korea threatened to fall within her sphere of influence, with the result that Britain's interests were seriously menaced. In this crisis France tried to keep as far aloof from Far Eastern politics as possible. Germany was on the look-out for some lucky windfall while Russia and Britain were quarrelling. Britain tried to place Russia under restraint by an Anglo-German entente, but to this proposal Germany turned the cold shoulder by declaring that Manchuria should not be placed within the scope of this entente. Thus Britain found herself isolated in the Far East. In this predicament Britain found a community of interests with Japan, and the Anglo-Japanese alliance was the result.

In the Russo-Japanese war, Japan had gained the victory without the influence of a third party, and thus Britain was enabled to see her great rival in the East crushed without staining her hands with blood. After that war the fervour of the alliance seemed to have cooled down a little. Moreover, it would appear as if Britain had succeeded in expelling Russia only to find a new rival in Japan. It is understandable that two years after the Portsmouth treaty the Anglo-Russian treaty was formed. But Britain could not relinquish the alliance because of the quality of our military power. It would not do for Britain to make an enemy of Japan in the Far East, still worse, to let Japan ally herself with another great Power.

Though a rival in trade, Japan could still act as Britain's protector in the Far East in time of danger. Is this not Britain's inner thought?

2. *The Third Anglo-Japanese Alliance.*—When making the third revision of the alliance treaty, did not Britain try to shirk the equal share of the responsibilities by excluding America from the applicability of the alliance? Loyal Japan, however, had fulfilled her obligations in the present war with the utmost faithfulness.

3. *Britain's Assistance.*—We do not believe all the utterances of the German Press, but we may ask how far we can rely upon Britain's assistance when confronted by a national danger!

Britain once had great sympathy towards Denmark, but when Prussia defeated Denmark and annexed her territory, Britain stood by as a spectator. She also had much sympathy with Italy but it was not Britain, but Napoleon the third, that had helped her in accomplishing the Italian independence. Greece had practically drawn the sword against Turkey at the instigation of Britain, and when she met with reverses Britain did not go to her succour.

On July 31, 1914, the French Ambassador in London repeated the question whether Britain would help France if Germany attacked France, to which Sir Edward Grey answered that he could not as yet give a definite answer. The Ambassador then said that Germany had deliberately opposed the proposal of a peaceful solution of the situation, and that it would not be to Britain's interest to have France trampled upon under the German hoofs. In 1870 Britain had stood by and allowed Germany to grow great, and in order that Britain might not commit the same error again, the French Ambassador earnestly hoped that the British government would reconsider its attitude. Mr. Marquis of the "National Review" commenting severely on Britain's unreliable attitude shown at this time, declared that it was a great disgrace. Mr. Rashari asserted that it was fortunate for Britain that Belgium had been invaded by Germany for had not Britain risen, Russia and France would have concluded that they had been betrayed by Britain and might have formed an alliance with Germany. Now this Britain, which was more ready to protect her own interests than to fulfill treaty obligations, how far will she be loyal to the Anglo-Japanese alliance when the need arises?

None will deny that Japan owes much to the Anglo-Japanese alliance and we should hope for the continuation of the alliance after this war. But we must bear in mind this important consideration that our expansion unaccompanied by military power, will be sure to bring us into collision with Britain.

## CHAPTER VI

### The Root of Calamity in the Far East.

1. *The Root of Calamity Changed from Korea to China.*—Some people are afraid of the vengeance of Germany and Russia after the war, nor do we underrate this apprehension. But it is in China that the most dangerous possibilities for us are found. It was on account of China that we fought two great wars, participated in the Boxer campaign, and finally wrested Tsingtau from the German grasp. All this bloodshed in the Orient is indirectly China's doing.

Korea, which had once constituted the store-house of Oriental calamities, has been quite cleansed but in China all is muddle and confusion and there is no knowing when awful calamities may issue forth from the chaos.

The relations which the European Powers bear towards China are those of interest and influence. But in the Sino-Japanese relations, there is something vital for Japan. Her fall or rise means her death or life. Therefore every Japanese politician at all worthy of the name is making a serious study of China, and anyone not knowing our Chinese diplomacy may be said to know nothing about Japan's foreign diplomacy. It is extremely regrettable that deplorable errors are apt to be committed in Sino-Japanese diplomacy and thereby create cause of complaint to the people of both countries.

2. *China's Attitude Towards Japan.*—China's diplomacy towards Japan has always been unsatisfactory for us. We cannot see in her diplomacy a sincere desire to maintain the peace of the Orient. She adheres to the old Machiavelian tactics even in this great civilised age. Take for instance some recent examples of China's diplomatic bungling, not to mention many older historical cases. After the Sino-Japanese war she induced Russia to thwart Japan by the famous intervention of the three Powers. By this means China succeeded in rejecting Japan's demands only to invite further calamity upon her own head at the hands of other Powers.

After the Russo-Japanese war, she again attempted to thwart Japan, this time with the help of the United States, setting before her the tempting bait of Fukien.

The Chinchow-Aigun railway and the quadruple Powers loan problems were the result. Again in the recent Sino-Japanese negotiations she endeavoured to set Britain and America against us.

The policy of setting one adversary against another has ever been China's favourite game in her international diplomacy. She has tasted bitter lessons as a result of this monkey policy, and she has not mended her ways yet. We regret this deeply for China's own sake.

3. *The Sino-Japanese Negotiations.*—The negotiations that began early in 1914 between China and this country have not brought as satisfactory a result as we could wish. Though we advertised our honourable principles to the world and had recourse to military intimidation, we could not attain all the objects aimed at.

Many critics assert that Japan has suffered herself to be degraded to be a dog of her ally, doing whatever she is commanded to do by Britain without forethought; that she captured Tsingtau without any thought, and then selected an inopportune time to open negotiations with China; lost faith in the eyes of the Powers by concealing the conditions demanded, and wounded Chinese feelings by resorting to military intimidation, and that the sum total of all this bungling diplomacy was the acquisition of what we had already practically acquired. We do not necessarily share such critical views, for we acknowledge that there is something ample even in that which we have acquired, but on the whole we cannot deny that our diplomacy deserves some censure.

What we consider most regrettable is that though we sent an ultimatum we had to make concessions at last. The authorities explained that they never intended to insist on the conditions that had been conceded, but in our opinion the point conceded was of the most vital importance to the future of our country, especially as long as China is weak enough to lack the power to defend her own territorial integrity, for it includes the question of military advisership to China. We should have attained this point at all cost. One cannot absolutely be sure that the unscrupulous German hand will not obtain the ascendancy in China some day and help to produce a second Turkey in the Far East.

When we consider that we have to expect a great racial conflict to come some day, we cannot but seriously lament this unfriendliness between Japan and China.

4. *How to Improve Sino-Japanese Relations.*—That there should exist apparently irreconcilable ill-feeling between the two peoples despite the oft repeated fact that we belong to the same race, have the same literature, etc., is not entirely the fault of statesmen on both sides. We must find partial cause in such facts as these: all the modern improvements imported to China from this country, such as ships, arms, machinery, even ordinary merchandise, have mostly been of an inferior quality out of proportion to the high prices imposed. Also we have always been ready to talk of an appeal to arms, not showing the magnanimity of a great Power, which should deal patiently with a weaker nation.

So if we desire to see Japan and China get on amicably together, it is necessary that both the government and the people of this country should open their hearts with all sincerity and make the Chinese perceive that we are their best friends and leaders, and that their salvation depends upon confiding in our trust.

We feel our burden considerably enlarged, now that we have made China swear to the inviolability of the territorial integrity of her coast and islands.

5. *The Anti-Japanese Sentiments in China.*—The attitude of China, both high and low, seems to be growing from bad to worse of late. The Chinese juvenile volunteer corps was organised, its initiation ceremony conducted on May 9, and that day was acclaimed the day of Chinese humiliation. The children's text book makes a reference to this national humiliation day.

The Chinese authorities issued the following proclamation to all the governors of the provinces under the name of President Yuan Shih-kai.

> "It has been said by Occidentals that civilized people are providentially justified in ruling barbarians or semi-civilised people. So if we think that no harm will come to our country so long as we treat others with equity, and do harm to none, we are mistaken. There is no reason why our state shall not be ruined if the deterioration of the military spirit and the corruption of the official circles continue as rampant as they are to-day, no matter how big our country or how numerous our people be. The Japanese Press declares that China, though she has become a republic, continues to hold all the corruption of the Chinese dynasty and shows no improvement in form or spirit. Let us remember that the Sino-Japanese relations have ended in our losing all political influence in South Manchuria. But our people continue to indulge in a protracted sleep, not knowing the terrible ruin their country is momentarily approaching. Our country is like a solitary junk floating on mid-ocean. This is no time for quietude and repose. To escape from the threatening ruin is to brace ourselves up into action and effect our own rescue. Remember May 7, and pluck up your courage and fly idleness and endeavour for the sake of posterity."

A certain Mongolian prince made a tour in Port Arthur in the latter part of July where he was entertained and welcomed by the Japanese Governor-General and others. On returning to Peking, he was rebuked by the Chinese Government. All the Mongolian princes were assembled in a government chamber, and the Secretary of the State, Mr. Hsu Shih-chang, reprimanded the recalcitrant for having left his post without obtaining the government permit, and as a punishment imposed a fine of a month's salary. He further warned the Mongolian princes against making any contract with the Japanese.

As a first step of its new colonial policy in preparation for the coming mixed residence, the Chinese Home Office sent 800 peasants from Shantung and Chihli to various parts of East Mongolia to offset the possible growth of Japanese influence there.

In September, the Chinese Government prohibited the free disposal of the land owned by Prince Ching. The major part of the land in Manchuria belongs to the members of the Ching dynasty, and Prince Ching is one of the greatest land proprietors, so that the above veto is practically an attempt to thwart Japan's desire to acquire any rights in Manchuria. That Yuan Shih-kai is at the back of this veto is quite plain.

Yuan's ambition is growing stronger and stronger, and his monarchy scheme is making wonderful progress.

The golden opportunity to solve many tangled Chinese problems and thereby place the Sino-Japanese relations on a safe foundation, has gone for ever as above stated. The future of China is as chaotic as ever. Her problems lie unsolved before our eyes. We feel as though we were lying inactive with fire arms unused in our bosom.

## CHAPTER VII

### The Status of the Empire's Military Preparedness

1. *People versus Army.*—From what has already been stated, it is evident that the Japanese Empire will find itself in a more dangerous position after the European war than she was in before it. And this increased danger will not come at a date far removed from the conclusion of peace, as some people imagine, but it will come simultaneously with the commencement of the Peace Conference.

Even granting that this is only our apprehension, still none can deny the prudence of presupposing such danger and taking necessary precautions. There is something regrettable in the feelings which some of our people entertain towards our army, which causes us considerable misgiving.

Whenever a military problem is discussed in the Diet, it elicits a hot adverse argument, and military problems have caused many exciting political changes. The anti-military politicians invariably base their views on their own party interest and not on the importance of a national defence, so that their arguments are utterly untenable and ridiculous. We are often tempted to doubt the sincerity of their desire to serve the state. We doubt if our country is so poor that it cannot afford to defray the demand we make for adequate military preparedness. If, for instance, our wealthy merchants and rich retired officers are enjoying large annuities, they should contribute part of their money, and if necessary all the Government officials should be made to contribute a small portion of their salaries to the Empire's war fund, as they once did for building war ships. We believe enough could easily be obtained to defray the cost of the division increase scheme. We could also obtain some money by curtailing the expenses of the military administration.

Of course, we will have to bear with certain inconveniences in providing an efficient army, but these are not to be compared with the inconveniences which might arise from the inadequacy of armaments.

A certain prominent official remarked:

"The Japanese army is strong because our soldiers can fight gallantly on rice, their feet shod in straw."

We fear that our representative people in discussing important problems of the state suffer their opinions to be biased by the principles of selfish individualism or party interests. Consider that the question of increasing the army only by two divisions has caused so many political crises before it was sanctioned by the Diet, and that it will take ten years to carry it into effect. Will such a trade mode of effecting our preparedness scheme keep pace with the rapid advance which the rest of the world is making?

Of course, there are many things which require speedy introduction or improvement in Japan, but lack of military preparedness would be a most dreadful thing. As for matters relating to

material civilization, they can be deferred one or two years without involving the country in any serious calamity.

In one sense it can even be said that the growth of purely material civilization tends to weaken the physiques and martial spirit of the people.

The constant political squabbling witnessed in Japan now-a-days, and popular sentiment in respect to military affairs, betoken somewhat similar conditions to those which prevailed in France before the war. Some cultivated persons are said to entertain the following opinion:

> "Military officers are followers of a profession which gives them ample means of living, so they should be treated differently from ordinary soldiers in the matter of prizes, decorations, etc. War rewards should be given more to soldiers than to officers."

Alas! such preposterous views, if carried out, would imperil the basis of the military organization.

The acts or speech of people in high positions have a wonderful influence in forming the opinion of the masses, so we cannot but warn them to beware what they say or write, especially concerning the grave problem of national defence.

We note with deep sorrow that the people are showing a tendency to deviate from the path of self-sacrifice and the old time moral principles, and drift towards a dangerous egotism. This tendency does not seem to be limited only to their attitude towards military matters. As we find that many of these immoral fellows belong to the educated classes, we cannot help seriously reflecting upon our present educational policy.

If the people should continue to go astray in such an alarming manner, and the popular sentiment towards the army continues so depraved, what will become of the future of our Empire? A deep and heavy sigh of sorrow must needs escape from our lips.

2. *Officers in the Reserve.*—That the services of large numbers of soldiers on the reserve will be needed in time of war is universally understood, and we feel it advisable to say a few words concerning the status of officers in the reserve. The pensions of lower officers are barely sufficient for their living, and leave no margin for the education of their children, the maintenance of their dignity as officers, or the pursuance of studies they had begun when on active service. Still less have they any opportunity to render such service as they wish to give for the sake of the association of soldiers on the reserve. Most of them are obliged to become money-earners, and in such circumstances it is well nigh impossible to improve the military efficiency of officers on the reserve. To improve matters we might urge the authorities to adopt every means, such as roll-calls, examination of horses, etc., to keep them as much in touch with military matters as possible; and, at the same time, the social position of these officers should be elevated (we do not necessarily mean by this that their pensions should be increased). General Nehara, Chief of the military education board (1915), issued a long instruction regarding the duties which the officers on the reserve are expected to discharge. We do not wish to throw any reflection upon his instruction, but it makes us doubt whether our highest military authorities are quite well acquainted with the actual conditions prevailing among lower officers, especially those on the reserve.

Those officers on active service are, as it were, sailing down the current with the prosperous wind, and can hardly be expected to feel what is painfully brought home to us.

There are some cases where officers of low grades are suddenly released from active service and are consequently hard put to it to find a means of livelihood. Is there absolutely no partiality in making appointments and dismissals? Is there no danger of promotions being partially meted out to obsequious flatterers and those having "influence"? Unless the authorities concerned keep a vigilant watch over such matters and acquire perfect knowledge of the conditions among the officers on the reserve, we apprehend that the efficiency of these officers may prove to be not quite in proportion to the largeness of their number when their services are required in time of national emergency.

3. *Military Neglect in France.*—In 1914, the French war minister, M. Messmie, exposed shortcomings in the military preparations, declaring that the shortage of cannon would be remedied in 1917 and that the deficiency in uniforms, etc., should be filled by demanding 60 million francs for 1915, and so forth. Scarcely had he finished speaking when the European war broke out.

We do not for a moment assert that our military preparations are in any such dangerous state, but we have no doubt that there is room for prompt improvement and amplification. No calamity is more terrible than that which overtakes us when we are off our guard. The attitude of those who say that the solution of military problems should be postponed till after the end of the present war, is as incomprehensible to me as the fact that the proposal to add only two divisions to our military strength was not approved till many years marked by political crises had passed. After the fall of Napoleon the First, France grew sick of military burdens, and looking upon the army as a relic of barbarism, devoted all her efforts to the development of material civilization. The railway policy, for instance, was conducted on purely economic principles, no preparation being made for the service of military transportation. Many acts of Parliament interfered with the adequate growth of the French army. Napoleon the Third and some intelligent people, perceived the dangerous defects and sounded notes of warning to the people. But the two wars, viz., the Crimean and the Italian, had filled the French with conceit, and no military reform bill could be passed. Thus things went on till the catastrophe of 1870 awakened France.

Since then France has been assiduously striving to remove imperfection from her military organization and yet she did not entirely repair the defects referred to.

For this state of affairs, not only the military authorities, but the people in general are responsible, and the people have been punished for regarding the army as a nuisance.

Since the latter part of the 19th century in France political strife has been rife. Of late there had been no less than seven changes in the ministry of the army during 30 months, and most of the demands made for military expenses had been so ruthlessly cut down that the authorities could not effect the necessary improvements in time.

4. *The Navy First and Army Second Theory.*—Recently many politicians have advanced what they call "Kaishu-rikuju shugai" (the sea first and the land afterwards theory) but we do not quite understand their attitude.

Japan being an island nation surrounded by the sea, we must, of course, look largely to naval power for our national defence, and the naval force must be maintained at a proper strength. To the absurd theory that, therefore, the navy is all important and should be strengthened, while the army is useless and may be left unimproved, we offer the most strenuous opposition.

Was it not our army which gave the final solution to the Sino-Japanese war, the Russo-Japanese war, the Boxer campaign and the Tsingtau siege?

Look at the British example. She has ever been of the opinion that the greatest navy in the world would be sufficient national defence in time of war, and that in case of a continental war, she could let the armies of her allies fight for her. Thus, except at Waterloo, she had never moved any powerful military force, and in the present war she tried to follow her proverbial policy, despatching only some portions of her own army. While the situation in the main arena of war had not made any satisfactory progress, she sent an expeditionary force to Turkey. Was not all this excessive devotion to the old policy?

Homer Lea has said concerning Great Britain, something as follows:

> "English fighting ability has deteriorated, and the preparations for war, that is, military organizations, have been exceedingly neglected, so that she cannot safe-guard all her vast wealth possessed all over the world. Her great wealth everywhere is in a dangerous position. The old spirit which the English had when acquiring their wealth has now been abandoned. The brave soldier spirit is placed in a secondary place, and there is naught in them

but the tradesman spirit of smug self-complaisance with which they go on piling up material wealth, giving no thought to the progress of their nation or race."

Compulsory military service had been advocated by Lord Roberts and Lord Kitchener, but the people were so much prejudiced against it that the country had to face the present crisis without it. The Powers were astonished when Lord Kitchener succeeded in raising a huge army of half a million men and organising 26 divisions.

Though the English newspapers reported a recruiting boom and spoke of the superior fighting qualities of the British volunteers, yet the difficulty of raising volunteers is gradually leaking out.

A certain Colonel seeing a crowd of young men amusing themselves at some sports, indignantly cried to them as follows:—"As a soldier, I strongly advise you to rally round the national flag and fight for your country. Are you content to be amusing yourselves with balls, when your fellow countrymen are being butchered at the front? I have been at the front since the outbreak of the war and my eldest son has died for his country. I am returning to the front to-morrow."

This stirring appeal, however, was drowned by the vehement acclamation with which the crowd greeted the entrance of the players.

Lord Kitchener speaking in London, said, "Money can be got by loans, munitions of war from the manufacturers, but the vital problem of men remains unsolved."

The conditions as to the eligibility of volunteers were at first that they should be unmarried men from 18 to 30 years. Soon the age limit was raised to 35, and then to 38, and finally to 40. What are we to think of a state which being confronted with such a serious national peril has no authority to compel young men who indulge in football to discharge their duty at a time of national danger? No wonder that opinion in favour of conscription is now gaining ground in England.

But egotism is so much developed in England that it is nearly hopeless to expect to see conscription adopted there.

In September of 1915, J. H. Thomas said in Parliament that the adoption of compulsory service would mean an industrial revolution, for if it were carried out the railway men would institute a general strike; the Liberals expressed themselves against conscription; and the Labour Union passed a resolution against it.

Thus while setting the armies of her allies against the German army, Britain is trying to destroy the enemy's navy with her great naval power. Even this she is not in a position to accomplish with her own navy alone. What would have happened if Great Britain had organised a strong army as well as a strong navy and driven the Germans out of Belgium? There would have been no danger from Zeppelins or submarines.

Further, suppose that the British army could have occupied Kiel and threatened Berlin, the perils of the present war would have been vastly curtailed. The facts to-day are that Great Britain is suffering terribly from the frightfulness of the war. Considering that Great Britain is now expending the enormous amount of 30 million yen per day in naval expenses and wages for hired soldiers (according to the Parliamentary report made on September 15th, the cost of the war to Britain is 35,000,000 yen per day) the outlay for military preparedness that would have been sufficient in peace time is but a trivial amount.

Britain's dilemma of to-day is to be traced to her military unpreparedness, or to the fact that she relied exclusively on her navy for her armaments.

5. *The Necessity of Harmonious Expansion of Army and Navy.*—As there are differences in the respective functions of the army and navy, it is inevitable that there should be some difference in the amount of expenditure required by both, but for a country like Japan, which is dependent upon her own resources without the help of others, and which has set her feet on the continent, determined to place Manchuria and Mongolia under her sphere of influence, the principle of subordinating military expansion to the naval armaments will never do.

The question as to which is more important is a problem that is only raised on account of rivalry between the army and navy. Both should co-operate in perfecting their common aim of national defence. Matters that are of common importance should be studied and investigated jointly under the same roof-tree, and in a spirit of co-operation.

In regard to such matters as aeronautics, wireless telegraphy, the making and storing of various arms, and the manufacture of military weapons, etc., it would seem advisable from an economical view point for the services to work together in the same places and under the same directors, though it may not be advisable to amalgamate the two too suddenly. This advice applies to many other services besides those of the army and navy.

## AMERICAN FREIGHT CARS FOR CHINA

The management of the Hanyueh branch of the Canton-Hankow Railway, of which Jeme Ten-yu is the managing director, has awarded the contract for 150 freight cars to the Robert Dollar Co.

The price for these cars was in the neighbourhood of G. $460,000 delivered to the railway at Hankow, and the time of delivery has been settled for some time during the first half of next year. They include 75 of the high sided and 75 of the low sided type, and are to be constructed to conform to specifications furnished by the railway company. According to preliminary arrangements effected by the company it is probable that they will be built on the Pacific Coast.

Among the other bids were the following:

Samuel & Co., high sided cars, f.o.b. Liverpool, £556 each; low sided cars f.o.b. Liverpool £530 each.

Jardine, Matheson & Co., delivered at Hankow, exclusive of landing charges, high sided cars £770 each; low sided cars £725 each. These prices include freight of £8-7 each.

Mitsui-Bussan-Kaisha, offering cars of the American Car Foundry Co., bid on a f.o.b. New York basis, G. $260,000.

The Stableford Co. offer high sided cars delivered at Wuchang for £561; low sided cars £542 each. This company offered to commence work within twenty-six weeks from receipt of the order, and to begin delivery ten weeks later. Their bid was conditioned upon the British Government permitting them to accept the order.

## THE USSURI RAILWAY

Following is the report of the Ussuri Railway's operations for 1914:

| | | |
|---|---|---|
| Passengers, by general and reduced tariff, immigrants and military people .. .. .. .. | | 2,062.072 persons. |
| Amount collected for the conveyance of passengers and luggage Rubles | 1,544,284.62 | |
| Luggage conveyed .. .. .. | 423.302 | pouds. |
| Various goods transported 126,073,467 pouds, an increase over 1914 of | 27,348.482 | pouds. |
| Total amount collected, including various other items of revenue, independent of the tariff ..Roubles | 10,417.009.46 | |
| Increase over 1914 by.. .. " | 127,678 | |

## JAPANESE IN PHILIPPINES

Sixty Filipino stone masons from Manila are now at work on the construction of the main dam across the Talomo River in connection with the Ohta (Japanese) Development Company's extensive irrigation system. This system will be completed at an early date and will cost approximately P100,000. It is undoubtedly the finest private irrigation system in the Philippine Islands and will make the Ohta plantation a magnificent property.

# YUAN SHIH-KAI'S PLACE IN CHINESE HISTORY

## The Link Between the Old and the New

Yuan Shih-kai, late President of China, has earned warmer expressions of gratitude from all classes of his fellow countrymen, by his death, than by any or all of the acts of his official life.

China is a country where the conventions and proprieties are most strictly observed, and no end of circumlocution is required to state an unpleasant fact. But with amazing frankness the statesmen, press, and people of the whole nation sent up an unmistakable prayer of thankfulness and relief when his death was announced. Those who did not say "we are glad of it," said "it is for the best."

If Yuan Shih-kai did not die for his country, he certainly gave almost universal satisfaction by dying, which is much the same thing; and the rank and file of the people are inclined to think that his last, inevitably his last, act upon the public theatre was the most patriotic and benevolent feature of his career. It is sardonic and cynical, and the Chinese are not inclined to be either in the face of death: therefore it is the more remarkable.

This, however, is not likely to be the ultimate judgment. At the time of Yuan Shih-kai's death Chinese politics had strained to the snapping point. There was no money in the treasury, no money in the banks, all China rested on its arms, divided into a half dozen camps, led by military barons of doubtful purpose. Japanese interference was imminent, the metropolis was without its proper supply of food, and the mass of the people, who have no politics but those of the full or empty stomach, were seething. Whether Yuan's death has served to ward off dangers and effect a permanent compromise between the warring elements, is yet to develop; but all China believes that it has, so for the moment all China is particularly grateful to its first "Great President," for going to his fathers at this most propitious moment.

China now feels the relief that comes with a narrow escape from a typhoon, and is short sighted. It is inevitable that history will give Yuan credit for bigger things than that of dying conveniently. There are thousands of Europeans in this country who sympathized with him in every move he made and who believe sincerely that he was the biggest and best Chinese of this generation. Most of us see faults, though some see none. But he will not be judged so much by his character or by the fortuitous advantage or disadvantage of his death. He will be an outstanding figure in Chinese history of this era by virtue of his unique position as a link between the New and the Old.

The revolutionists of 1911 would have had no link. They wanted no political evolution, but revolution complete and radical. They were enthusiasts and few of them were very profound students of the philosophy of history. History makes no skips and jumps, it grows like everything else in nature. They wanted the old patriarchal China, with its governmental theory based upon family relations and its executive practise saturated with much condoned rottenness, to turn a huge political flipflop at the snap of their fingers and be, not become, a thoroughly modern, well-ordered republic. They did not count upon a link when they started the Revolution, but very much to their distaste, the link appeared in the person of Yuan Shih Kai, who belonged to neither the New or the Old. He was not a Chinese scholar and he was not a foreign educated student. He was not a hide-bound traditionalist nor was he a raving iconoclast. No strong man in China stood so exactly between the decadent ancients and the impulsive moderns. He had sympathy for both and affiliations with both, but he was not wholly affiliated with either. In his career he had betrayed both factions. In 1898 he assisted largely in checking the sweeping changes planned by the Emperor Kuang Hsu and Kang Yu-wei, the reformer; and in 1900 he helped mightily the downfall of

Late President Yuan Shih-kai

Boxerdom and the humiliation of the Empress Dowager and her clan. Whether these and subsequent coups were undertaken for his own or China's good it is for his friends and enemies to settle. No one can deny that in policy he occupied the medial position, the position of the link, and it will probably be found that in history his reign—there is no other term to apply to it—will be recognized as the transition period, the period of growth from the Old to the New, the essential link between completed, fungus-grown despotism and a rational Chinese democracy. The reasonable patriotism of a late generation will not regret the five years of quasi-democracy under Yuan's arbitrary hand, whatever faults may be found in his judgment and character.

Yuan knew very little of the West. He spoke no European language and was never further abroad than Korea; but he had no prejudices against Occidental innovations. At the same time he was thoroughly Oriental in his opposition to Western forms of Government. He did not hesitate to employ German officers to drill his model corps at a time when foreigners were by no means popular in China; nor did he hesitate at a later date to disband the National Assembly as a schoolmaster sends his pupils scurrying. He disobeyed Imperial Mandates in the Boxer era and saved scores of foreigners; but he resorted to assassination and bribery, like a true Oriental statesman, when he found them convenient weapons. He saw the u es of railways, modern industries, mines, ships, and up-to-date military equipment, and worked for them; but he had no sympathy with popular government or the aspirations of political reformers. With all his hatred of Japan he would have shaped China to a Japanese mould—an aggressively modern and business-like nation, with an irresponsible, unscrupulous, despotism pushing it into prominence and power.

A brief account of his life, and the chief events of his so-called presidency, may help to an understanding of the past five years of Chinese history.

Yuan Shih-kai was born in the northern part of Honan province, which is nearly in the centre of China, in 1859. As a youngster he was everything that a Chinese youth of promise should not be. He was physically strong and mentally indolent. He did not take kindly to books, but displayed a great fondness for riding, boxing and broadsword practice. However this might be interpreted in the West, it could be nothing but an evil promise for the future in China, where official greatness has always been dependent upon scholarly attainments. He was entrusted successively to two paternal uncles, who took him to Peking, Shantung, Yangchow, and Nanking, and tried to make a scholar of him. In this they did not succeed, for he invariably failed to pass the preliminary civil service examinations, and developed no better qualifications for an official career than a strong will and a heavy fist.

His uncle Yuan Pao-heng, who rose to high official rank, nevertheless pushed him forward and obtained for him a small appointment in a Famine Relief Office in 1879, and thereafter a nominal rank. Still under his uncle's patronage he later received an appointment as a Deputy in the Shantung Coast Defense Office. Up to this time he had his uncle's social status to thank for his progress, but from 1882 until the hour of his death whatever good or evil came to him was of his own making, shaped by that strong will and heavy fist which could not win him a start, because all beginnings in China were hedged by obsolete, dry-as-dust scholarship.

In 1882 he was placed in charge of transport for the Chinese expedition into Korea. During the twelve years that he worked in that country, scheming and fighting against the Japanese, he figured so largely by virtue of his courage and bold initiative in all matters, that he was chosen in 1894 to re-organize the Chinese army along Occidental lines. With a nucleus of 5,000 men and officers of his own choosing, many of whom have since figured brilliantly in Chinese affairs, he shaped the only truly efficient force in China and endeared himself to all soldiers by seeing that his men were regularly and fully paid, a notable breach of tradition in China.

Then he remodelled Tientsin and made a clean, presentable city of it. A little later he upset the plans of the Emperor Kuang Hsu by revealing his plans to Jung Li, favorite of the Empress Dowager; and then as Governor of Shantung he broke down the Boxer organization in his province and helped mightily to frustrate the Empress Dowager's plans for a general extermination of foreigners. From this time until the death of the Empress Dowager in 1908 he held numerous high offices and distinguished himself in all capacities. Then, through the influence of enemies, he was ordered into retirement and was forced to go back to his ancestral home in Honan and amuse himself as best he could. It is said that from 1908 till 1911 his best efforts were given to fishing.

Yuan Shih-kai at the Altar of Heaven wearing the Ceremonial Robe in which he was buried

When the Revolution broke out at Wuchang in 1911 and the Manchus realized that it was a serious matter, Yuan was peremptorily recalled to the world of affairs, appointed Viceroy of Hukuang, the trouble zone, and given full control of the Northern armies. After seeing his campaign well started, with the advantage on the side of his generals, he went up to Peking with the appointment of Premier in his portmanteau.

He opened negotiations at once with the Revolutionists and made every effort to sustain the Manchu claim to power. A constitutional monarchy was planned, submitted to the South, and rejected. The fighting went on, chiefly diplomatic now, and Yuan tried to secure his Manchu masters the best possible terms, and when the end was near and there was no further hope for the Tartar Dynasty, he contrived to make his own appointment to the Presidency a condition to the final settlement.

As a president he cut no particular figure, but when in the second year of the Republic he openly asserted h s autocratic powers, he did figure largely as a dictator. He used his personal influence with the minority in the National Assembly to prevent the majority from appointing the cabinet members. He negotiated the Reorganization Loan with a foreign group of bankers on his own responsibility. He ejected the Kuomintang majority from the National Assembly by autocratic decree and a month later dissolved the representative body. Then he proceeded with the assistance of the military commanders, many of whom were former officers in his Model Army of 1894, to remove the progressives from all public offices and put his own retainers in their places, to discourage the dissemination of Republican ideas, and to persuade China that she and democracy were not made for each other.

It was because he believed that he and his personal following had completely converted China to a thorough dislike for Re-

publicanism that he had the courage in the Autumn of 1915 to announce publicly his imperial ambitions. It is probable that he believed he was doing the best for China, and whatever his ideas were he was prepared to back them with the well equipped forces commanded by his old lieutenants, Chang Hsun, Feng Kuo-chang, Tuan Chi-kuei, and others.

For a time China seemed to receive the announcement with complacency, a complacency which caused the Republicans to wring their hands and call upon the shades of their valiant ancestors. Then came the distant rumble of the storm and the appearance of a very small cloud patch in the far Southwest. How it grew until it covered all South China, how Yuan the strong sensed its strength and renounced his ambitions, how it kept on growing and gathering in upon the renunciant up to the hour of his death, has been recorded fully in the FAR EASTERN REVIEW.

Yuan could not give up without ruining his friends, completely losing his prestige, and giving his life-long enemies the Japanese a foothold in Chinese politics which he and every other northerner begrudged them. He could not yield and to fight was desperate. There was ruin on all hands, discredit approached him and his country from all quarters, the glibbest prophets were silenced and there seemed no solution to the dilemma. Then he died, and behold! it was solved. The air cleared, the factionists wept tears of joy on each others' shoulders, the Japanese were discomfited, the money market eased and all China patted Li Yuan Hung affectionately on the back and said: "Go ahead Li, we'll see you through."

Yuan was not over-scrupulous perhaps. The great masters of men seldom have been. He will not be given a place in the Chinese Saints' Calendar, but he will be known as a man of power, a man who was big enough to command the unswerving allegiance and loyalty of his friends, and big enough, moreover, to make bitter enemies. He worked hard and seriously, whether for China or for Yuan. He was no sluggard and no weakling. When he did not win affection he nevertheless won admiration. To the end and after the end he never merited contempt. When he cancelled the monarchy and admitted to the Nation and the world the failure of his imperial ambition, he "lost face" in Chinese eyes, and there is scarcely a Chinese living who would not rather lose his right hand and his eyes. A small man, the average man, would have gone down into the dust heap of oblivion at that juncture, but Yuan was not the average man. Without "face"—the significance of which no one outside of China can understand—he held his position and his strongest friends, and quietly prepared for the recovery of the prestige which he had lost. The average Chinese is a glib exponent of compromise. Yuan differed from his countrymen and from most of the great figures in Chinese history by preferring conquest to compromise and war to gentle persuasion. He believed in the centralization of power and not in representation. In his heart he certainly had no sympathy with republicanism. He doubtless believed in an aggressive autocracy; all men of his type do, and the vacillations and pettifogging of popular Government are irksome to them. They have no patience with the slow evolution of a perfect democracy. Yuan found his five years of the presidency as trying as the Southern fire-eaters did, but for a very different reason. He would have turned the government into an autocracy at once and been done with it. They would have made a full fledged republic of it at once and been done with it. With the compromise, the republican form shadowed by the autocratic spirit, neither side was satisfied. Periods of slow growth are irksome to opinionated people, and there were persons on both sides with strong opinions. When Yuan died the Southerners were fighting for their faith and Yuan was undoubtedly preparing to fight for his.

His death seems to have disarmed the monarchists and the whole nation swears by the constitution and pledges itself to democracy of form and spirit. The leaders of the North and South send gratulatory telegrams to each other upon the accession of Li Yuan-hung and the imminent descent of the exiled Southern enthusiasts upon the capital is promised by the press of both parties. A reconciliation of the old and new, the harmony of the fiery, brilliant South with the strong, sane North is pledged by the leaders of all the petty factions, while the great soldier-bandits who controlled the allegiance of armies as they fancied have promised to be good. It sounds too good to be true, but Chinese history records events as marvellous, and those who know the Chinese have learned to expect the unexpected.

If out of it all there grows the strong Chinese Republic which all parties now assure us is at hand, it will be because the Chinese have had five years in which to think, five years in which to absorb ideas which were too novel to be safe five years ago. In this short time they have seen and heard enough of democracy to know whether they want it or not, and they have had enough of despotism to judge it on its merits

The silliest of China's silly optimists could not affirm that the Chinese people have a thorough understanding of the principles of the elementary workings of Republicanism, but it is to be hoped that the leaders of the people in both South and North are wiser and better equipped than they were five years ago. A valuable lesson has been learned which no one but Yuan Shih-kai could have impressed upon these same leaders: the people do not want autocracy. If Yuan failed in his absolutism, who will be big enough to try it now? China is to have a democratic government. That was not finally decided five years ago; the decision was postponed and Yuan Shih-kai, under the studious inspection of his friends and enemies, was given every opportunity to perform the experiments which would lead up to a final decision. His biggest experiment, his fling at crowned absolutism, failed dismally and he died in his failure. All China says that by simple synthetic reasoning from facts the final decision has been reached. China is to be a Republic, despotism is done with, the Old is dead and the New has risen in strength out of the epoch of doubt, experiment and growth. Yuan Shih-kai was the link in the chain of China's evolution. In his person the Old died and the New was born. This is what the Chinese are saying now with Yuan newly laid in his coffin and Li Yuan-hung newly enconsced in the Presidential Chair. An occidental prophet in this country is usually without honor, so we should not venture to prophesy, but leave it to history to deal with the Chinese forecast of the hour.

## AMERICA TO IMPROVE THE GRAND CANAL

In a previous issue of the FAR EASTERN REVIEW we indicated that an agreement would probably be come to with American financiers in connexion with the proposal to improve the Grand Canal. It is the desire of the Chinese Government to make what is known as the Hwai River conservancy scheme—for the carrying out of which the Americans have an option—of greater benefit to the millions of people within the area embraced by it by rendering the Grand Canal fit for navigation and at the same time reclaiming large areas of territory now made impossible of cultivation or habitation by the vagaries of water which might easily be confined within definite limits. In order to have the Canal between the Yangtsze and Yellow Rivers put upon a paying basis commercially and otherwise the Government has entered into an agreement with the American International Investment Corporation, with whom are connected the contracting firm of Messrs. Siems and Carey, of Minneapolis. The work is estimated cost to about $6,000,000 gold, and if carried out will prove of incalculable benefit to China and all commercial nations interested in the transportation of merchandise to and from the regions traversed or fed by the Grand Canal. This famous waterway has been so long neglected by previous governments that it has become silted in many places and what should be a blessing has been converted into a curse in those places where water has inundated what otherwise would be valuable arable land.

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## CHINA'S NEW PRESIDENT

If Yuan Shih-kai blessed China by his death, Vice-President Li Yuan-hung certainly conferred undiluted happiness upon it by his assumption of office as President, happiness at least temporary if not permanent. By the Constitution under which Yuan Shih-kai was elected President, and by virtue of deeds, the post undoubtedly belonged to Li Yuan-hung. No other man in China could have stepped into the vacancy with greater popular approval, with the possible exception of Tsai-Ao, who raised the revolt against the Monarchy movement and so wrought the downfall of Yuan Shih-kai. Vim was lent to the welcome of Li Yuan-hung as President by the marked transition from gloom to apparent peace and brightness which the death of Yuan Shih-kai so swiftly and unexpectedly effected, and the circumstances surrounding his elevation to the highest post in the land invested the event with all those mysterious influences connected with a good omen. Should the new President now be able to transmute the undoubted goodwill shown him into that love which, in the words of Napoleon I, is "the rock of the sovereign," by acts calculated to make for the immediate and future good of the people, China will gain a millionfold: nor will the nation ever be able to repay the debt under which it will thus be placed.

General Li has it in his power to work a marvellous change, amongst other things, in the time-honoured relations between the people and the ruler. Not that President Li will be a ruler in the old sense of the word, or even in the manner desired by his immediate predecessor. He will be restrained by the Constitution if not by his own freedom from personal ambition. Hitherto the Chinese people have been accustomed to their rulers living as beings apart, sacred in their seclusion in the Forbidden City, to be talked of in hushed voices and never to be seen by the common herd. Even Yuan Shih-kai never braved the multitude, but that was chiefly because he had reason to know that many in the multitude might be tempted by the sight of him to use some lethal weapon to rid the nation of his dominance. If he went out to the Temple of Heaven, as he did on one famous occasion, the streets were cleared of every civilian, and were, together with the house-tops, occupied by soldiers with bayonets fixed to loaded rifles, while he sped swiftly along the cleared thoroughfare at racing pace in an armoured motor car. On State occasions, such as the anniversary of the establishment of the Republic, when he ventured from his Palace a few hundred yards to the South Gate of the Forbidden City, the streets were again cleared of every soul except those in uniform or bearing special police permits, and then he was surrounded by a numerically strong picked guard mounted and armed cap-a-pied. The potential assassin would have had a difficult task to mark his man when so thickly surrounded.

With Li Yuan-hung there should be none of this. If the modern Chinese are capable of up-to-date hero worship President Li enjoys the distinction of being the popular idol. From the Revolution of 1911-12, by which the Manchu rule was overthrown, he was the only man who emerged with a lasting national reputation. Dr. Sun Yat-sen at one time bade fair to rival him, but unhappily the name of China's first President became stained by his connexion with the abortive revolt of 1913, proving if nothing else does that in the public mind nothing succeeds like success, while failure has its sorrows for its victims. As a General at the city of Wuchang, opposite Hankow, on the Yangtsze River, in 1911, Li Yuan-hung took up arms against the Manchus, and with his forces bore the brunt of the assaults of the Imperial troops. Some say that he was reluctant to head the revolutionary troops, and that he was pressed into the service at the muzzle of revolvers. Be that as it may, he stuck to the task once he put his hand to it, and by his loyalty to the cause, by his courage and by his military talent, combined with his fine character as a man, he won out and earned world-wide encomiums, to say nothing of the universal respect and regard expressed for him by his own countrymen. As the outstanding Hero of the Revolution, therefore, Li Yuan-hung may walk in the open of the splendid country of which he is now President, nor need he fear aught. There is no necessity for him now to hide as did his predecessor behind grim walls, topped by the unceasing vigilance of armed guards, two of whom through the days and nights kept

Li Yuan-hung, China's New President

vigil in the crow's nest of a stalwart flagpole, as the unweary watch spies upon the wide sea from the conning tower of a warship. Yuan Shih-kai took no earthly chances; Li Yuan-hung has the privilege of counting all men his friends if not his supporters, and he need fear none. With this tremendous difference in his favor he might well work a marvellous change in the custom which has for centuries bred in the bones of the Chinese people great awe of their rulers. By going abroad in the country, visiting city after city, seeing the people and being seen by them, he might carry to the nation an inspiring message which will make for an uplift not otherwise possible. Li Yuan-hung could enjoy the glories of a triumphal procession throughout the length and breadth of China such as no one has ever experienced: he would do a great national service by beginning such a tour immediately a settlement of government has been effected. Not only would it give the millions of people who know his name greater confidence in him, but it would also bring him into touch with the masses and secure for him a first-hand knowledge of the requirements of the country such as Yuan Shih-kai, or any previous ruler, could never hope to obtain.

The life-history of the new President is already well-known, but it might be briefly sketched. Born in 1864 in the province of Hupeh, which has produced many brilliant men, he eventually studied at the Naval College at Tientsin and occupied a high place as a student, graduating after six years. When the war between China and Japan broke out he went on service in a junior position on one of the Chinese cruisers, later joining the service of Viceroy Chang Chih-tung, at Nanking, where part of his duties was to supervise the erection of the modern forts near the old Capital. So struck was Chang Chih-tung with the talents of the young officer that he took him to Wuchang to assist in organizing the modern troops there in association with foreign officers. In 1897 he went to Japan to study fortifications, and after a short return to China, again proceeded to Japan and was attached to the Guards Corps as a cadet. In 1900 he returned to Wuchang and became a Major in the cavalry, shortly afterwards being raised to the rank of Colonel of the 21st Brigade. In 1902 he attended military manœuvres in Japan, and in 1905 was in charge of the manœuvres at Changteh, his rank then being Commander-in-Chief of the 8th Division. From then to the time of the Revolution in 1911 he held several posts, among them being Commander of the Liu Chu squadron, Commandant of the Ssu Hu Torpedo boat flotilla, co-Director of the Military Academy, Deputy-Director of the Hanyang Arsenal, and Superintendent of the Military Middle School. After the outbreak of revolution at Wuchang on October 10, 1911, he was elected Tutuh (or Military Governor) of Hupeh Province, and for the first time his name became known throughout the world. Indeed, before the revolution he was scarcely known in China, except in military circles, his modesty and general unobtrusiveness keeping him in the background; characteristics which also enabled his rivals to prevent him obtaining the highest military rank and duties in the province, a post to which he was fully entitled.

With the success of the Revolution General Li naturally became the head of the Central Military Government, and later Generalissimo of the Army and Navy. The establishment of the Republic found him unanimously elected Vice-President, and as Chief of Staff he rendered splendid service in the union of the armies of the North and South.

General Li refrained from taking any part in the revolt in 1913, and likewise he was steadfast in his resistance of temptation to back the monarchy movement. Yuan Shih-kai created General Li a Prince, but the Hero of the Revolution was proof against titles and their emoluments, and stoutly withstood the pressure of many influential persons to associate himself with the movement which eventually brought about the collapse of its founder.

His consistent attitude in this respect increased the regard which his old revolutionary associates entertained for him and naturally when the power of Yuan Shih-kai obviously began to fail and the retirement of the President was demanded, his name was the one foremost on the lips of all for the Presidency. The Military Commission which was formed at Canton to manage the affairs of the Independent Provinces nominated Li Yuan-hung as President, and while it was unwise at that moment to have done so, Li being virtually a prisoner in Peking, still, happily, no harm befell, though he was unable to make any public statement as to whether he favored the attitude of the Independent provinces or not. Pending developments he decided to remain quietly in Peking, and the war in Europe gave him ample scope for military study. He became extremely well-versed in the various phases of the great struggle and perhaps grasped the military situation as well as any foreigner not actually on the spot or with special information. In fact his knowledge of the armies at war and their tactics has proved strikingly accurate.

As was to be expected his succession to the Presidency was acclaimed throughout the country, and the least that can be said is that China is peculiarly fortunate in having such a man ready at hand to step into the shoes of Yuan Shih-kai, who had the reputation among certain foreigners of being the only great and capable man in the country. Li Yuan-hung has not had the administrative experience of his predecessor, but he enjoys the reputation of possessing a sterling character, and a heart loyal and patriotic to the core. With these attributes, and with his readiness to share responsibility, he should be able to make his occupation of the office of Chief Executive a happy one for China. His modesty and lack of personal ambition, combined with his love for his country, fit him to succeed one who has been prompted mostly by shortsightedness to destroy what might otherwise have been a great name in the history of China.

## THE TASK OF CHINA'S NEW GOVERNMENT

According to Chinese mythology a gentleman named Pan Ku worked for 18,000 years with a mallet and chisel shaping the earth, and his labors were said to have been completed by three

other individuals known as the celestial, terrestrial and human sovereigns, who also each toiled for 18,000 years. The result of all their work was China, and to the ancients in this land China was the world. What these energetic gentlemen began has lasted for innumerable centuries, and with the effluxion of time the Celestial denizens have made the painful discovery that China is but a fraction of the world after all, and what there is of it, great as is the fraction, has not been really finished.

In the matter of government it is recorded that a patriarchal system obtained from the earliest times until somewhere about B.C. 2356, when the immortal Yao began his reign and introduced the monarchical system. Yao passed the Throne on to Shun, and both are exhibited by Confucius and Mencius as patterns of virtue whose lives and conduct should be emulated by all Chinese.

True to teaching, all Chinese have never tired of alluding to Yao and Shun, particularly when dealing with the shortcomings of contemporary rulers, and oftentimes Yu, who succeeded Shun, and who established the first Chinese dynasty, is also coupled with the other two as the best of Chinese Emperors. It was Yu in fact who believed in allowing the people personally to air their grievances, and to facilitate this he hung outside of his palace a drum, a gong, a triangle of sounding stone, and a rattle. Each had its particular use. If some wight utilised the drum the Emperor knew he had some one at hand who intended to berate him on the question of virtue; if the gong sounded he knew that he was going to be taken to task on the manner of his life; if the stone instrument became resonant he realised that famine or rebellion was in the land and had to be spoken of, and if the rattle shook the welkin he knew that some magistrate had failed in the proper dispensation of Justice. If the rattle were available these days it would be working twenty-four hours a day.

Yu began his reign B.C. 2205 and ended it B.C. 1818—a very, very long time ago. Yet, since that period China has not made any particular advance on the methods of Yao and Shun and Yu. If it had, the names of this trio would not be so constantly on the lips of present day people, and Chinese literature would be robbed of some excellent if oft-quoted and hopeless classical allusions. But the great, and in many ways useless, gap between these beneficent ancients and the energetic moderns who are responsible for the introduction of a democratic form of government,—which after all is not so extraordinary in its modernity as to be incompatible with Chinese social and political life—is not so great that it and its rotten precedents cannot be forgotten. The good intentions of Yu with his drum, his gong, his stone triangle, and his rattle, might, however, well be remembered and perhaps be regarded as a starting point by those who now have the chance of an aeon to bring happiness and prosperity to the great Chinese people, and well might they metaphorically suspend outside the Presidential Palace or the Parliament Buildings an equipment of orchestral instruments whereon the humble eleemosynary dweller in the land as well as the bloated plutocrat might at odd times sound a warning that he had something of good to the State to communicate to the listening legislators. The voice of the people has so long been shut down with the clamp of despotism that it can now well be liberated, and that work should be of the first undertaken by the new Government if the Republic is to be what its founders have professedly fought for and what many of them truly hope it will achieve.

There are so many ills under which the Chinese have labored that it is difficult to enumerate them; really difficult to know where to say the Government should commence to work with the pruning knife. It will not go wrong, however, if it decides to strike out with all its power at the generally inefficient and corrupt official system obtaining throughout the provinces, a system which has methodically throttled the liberty of the people and held in duress the central administration. The provincial mandarin of the old days has not, speaking generally, been improved upon by the provincial official of recent times. All have been uniformly disregardful of the actual public weal; all have permitted the perpetuation of peculation of public revenues; all have with sinister contempt remained heedless of the rights of those who pay taxation; very, very few have really endeavored to earn their salary by doing a day's work, and fewer have applied revenues to the improvement or inauguration of public utilities on a proper basis. The silted canals, the decayed bridges, the absolute absence of decent roads alone cry out against the maladministration of public funds.

A thorough reform of the methods of collection of taxation in China would preserve to the national Treasury sufficient of the collectable revenues to pay off the national debt almost immediately after reorganization. All that is required is a systematization of revenue collection—a strict accounting of every cent received. With reform in this direction and the disbandment of the huge force of brigands classed as soldiers, security could be given to life and property—a boon that would earn for the government securing it the life-long gratitude of the people. Monuments that would be erected in honour of such an achievement would outlive the Great Wall.

Never have the Chinese been able to develop their resources upon a proper basis; always officialdom has stood over enterprises inaugurated by Chinese ready to bleed those who might stand a possible chance of profiting from them; taxes and surtaxes have been levied with a recklessness and abandon staggering not only to enterprise but to trade and commerce; whole districts, as we pointed out in a recent issue, have been brought to stagnation and the people have been driven to brigandage by the utter shortsightedness of crassly ignorant and greedy officials far removed from the Capital. Nor, for that matter, has the Central Government, even since the establishment of the Republic, taken the steps that ought to have been taken to relieve the situation by the introduction of proper laws to protect industry and trade.

The imposition of the inland tax known as "likin" has increased rather than diminished, though commissions have, it must be said, recently been sent out to investigate the methods of taxation with a view to reform. But this could have been done, and the whole system could have been improved years ago if officialdom had so desired. China's apparent stagnation in a miry rut while the rest of the world has leaped forward in innumerable directions, scientific and otherwise, is due solely and wholly to the official system.

The great potentialities of this country could if developed with wisdom and honesty guarantee China affluent existence as an absolutely self-contained and independent country. No power in the world has at its disposal the tremendous asset of a vast peaceful and industrious population such as exists in China. The enormous energy expended annually by the people in the titanic struggle against great odds to eke out an existence could if marshalled under proper conditions and direction build China up to a condition of wealth and greatness such as has been achieved by any other nation in the world.

What it is in the composition of the Chinese that permits them so absolutely to disregard those startling developments in foreign countries which make for the amelioration of the condition of the people, to say nothing of the advancement of national power, baffles even the most astute psychologists. Whatever failing it is, it is national, and if it is not merely sheer lethargy, or innate reluctance to accept responsibility for innovations, or just deplorable disregard of realities, and complete scorn of the commonweal, the new government will surely quickly act to eradicate the grave conditions which have for so long been strangling the nation and holding it up to the contempt of the wide world.

Industrial development, the unshackling of commerce, the opening of the country to trade, the application of the draft mining laws which the late Minister for Commerce, Agriculture and Industry had prepared, and which were referred to in an article in the last issue of this journal, should be undertaken concurrently with wholesale reform of taxation. And in conjunction with this work the army should receive the closest attention. To reduce the army and make it an agency for national good is about the most difficult task the new government will have to attempt, but it must not be shirked. At present the Chinese army is not a particle of use for the performance of what its proper function should be,—to safeguard China against outside foes. It is a standing menace to the country itself. Composed mostly of venal riff-raff, and commanded by individual

officers who maintain their independence of the Central authority whenever it suits them, it is the gravest danger to a peaceful development of the country. To separate military dominance from politics is essential if China is ever to get upon her feet, and by a gradual process the new government should be able to define the activities of the generals, and curtail the size of the army by the employment of soldiers who should be disbanded upon the construction of roads for commercial and military purposes or upon the installation of public utilities. Soldiers could be detailed in large numbers to handle picks and shovels instead of firearms. If they developed a dislike for work refusal of duty should lead to their dismissal, and disbandment automatically could thus be brought about. A large section of the army—the pick of the troops—could be transformed into a gendarmerie for the proper policing of the country, and the balance of the army could be placed upon a proper basis for national use. The question, we know, bristles with difficulties which cannot be dealt with in an off-handed manner, but failure to tackle it is to acknowledge that the army, not the government, is supreme and rules the country.

The new Government will start upon its work with a prospect of being able to cut a wide swathe through the thicket of general rottenness which has through the years sprung up in the fertile soil of ignorance, corruption, and incompetence, and it can do this if it abandons once and for all the strangling practice of acting only on precedents set by benighted ancients whose one object seemed to be to keep the people stupid and in a state of utter subjection.

Since the Chinese are so fond of taking refuge in the classics let them skip the centuries that have flown since Emperor Yu attempted to give all and sundry a chance to make their ideas known, and develop what that worthy man might have attained to in the matter of providing a popular government had he but known what was required or lived in these advanced times. Yu had in him the makings of a ruler who would have done credit to the world—and the new Government has the opportunity which no other government in China has had the good fortune to secure to transform completely what has in the past been considered adequate administration. If it does not take it there is but one end—and that is a combination among the Powers, or certain of them, to see to it that reorganization is undertaken for the good of the country as well as for the benefit of themselves and the world in general. China is too proximate to world currents to escape much longer the consequences of their force, and this should be realised by those who have fought for a chance and secured it.

## SAVING THE GOOSE THAT LAYS THE GOLDEN EGGS

Governor-General W. Cameron Forbes, when Chief Executive of the Philippine Islands, in a memorable address before the Manila Merchants Association, called attention to the deplorable tendency on the part of the Filipino to adulterate the product of his fields and groves down to the lowest limit at which the same would be accepted by the world. The fallacy of this was clearly pointed out and remedies suggested by the then Governor-General. The present administration has made a marked advance in following out this suggestion, which Mr. Forbes was unable to do because of the end of his tenure of office. On another page of this issue will be found a resume of the first year's workings of the compulsory hemp growing law, a measure which was designed for the sole purpose of saving the Filipino from the consequences of his own folly.

Manila hemp had been going down in the scale of value, until it was beginning to be looked upon with suspicion by those who had previously placed their faith in it and relied for the safety of their ships upon hawsers made from this material. The year's work has shown that the fiber law drawn up by Mr. M. M. Saleeby, Fiber Expert of the Bureau of Agriculture, is well adapted to meet conditions and that it has effected a material enhancement of the value of this greatest Philippine product as compared with competing fibers of the world.

Once upon a time Philippine indigo brought almost the highest price in the world's market. It was an excellent product and compared favorably with the best of the Indian output, but its price was so high that the Filipino thought he might sell a little added material such as sand, which cost him nothing, at the price of indigo. The result was that indigo cultivation ended in the Philippines long before the synthetic product compelled a similar cessation of cultivation in the other great indigo producing countries.

Copra is another case in point, and a vastly more important one, since it stands second to hemp in volume and value of product. In this case the cocoanut grower does not add foreign materials but if by chance he produces an extra good grade of product, he will mix with it a little of poorer grades made from immature nuts, in the expectation that it will get by the eye of the buyer's inspector. Perhaps it does for a time, but the day soon comes when the rapacity of the adulterator leads him to overstep good judgment and the product is graded lower and lower until, as is now the case, Philippine copra brings the lowest price of any copra in the world.

With the experience gained from the fiber law, and with due regard to the experience of other countries, it would seem feasible to draw a workable law for the protection of the copra market's "golden goose" and put a stop to this tendency to cheapen the products on which the prosperity of the Philippine Islands depends. Samoan copra, which was formerly worse even than the Philippine, judging from the market prices, which are the sole criterion of the relative excellence of the country's products, has vastly improved during the past ten years under legislation that forbade the picking of cocoanuts before they had reached full ripeness on the trees. Any grower who offered copra made from immature nuts was fined and the copra destroyed. The result has been greater prosperity for the natives and a rise in the estimation of the world for copra formerly almost a drug on the market.

The causes which brought Samoan copra down to such a low level prevail to-day in the Philippines. Not only does the grower persist in picking immature nuts whenever he needs the money or when copra is bringing a little higher price than usual, but he cuts short the time of drying and therefore the product is poorly prepared for the market, whether this preparation consists in sun-drying or smoking on the native grill. Copra buyers quite generally find a decrease in quality whenever the market value rises.

Now that the hemp law is working so satisfactorily, the Philippine government should extend it in principle to other industries, and evolve regulation whereby the copra grower be given the same protection from himself as is now offered the hemp planter. In the case of hemp it is not difficult to estimate the added value produced by the grading law, but in the matter of copra were the Filipino to produce an average grade equal to the poorer grades of Ceylon they would distribute among themselves upwards of Pesos 3,000,000 a year, judging from the present value of the crop. Surely to secure such a result it is worth while to incur the opposition that surely would meet such a demand on the part of the government to interfere with the liberty of the copra grower to make just as bad copra as he pleased. The final result will be the same as in the hemp industry, and the grower in the end will thank the Government for its efforts on his behalf.

## JAPAN'S SHIPPING CONQUEST

A new menace and an exceedingly serious hindrance to trade between China and foreign countries, especially concerning Great Britain and the United States, has recently developed and has created a situation in which the capture of China's entire export trade by Japan is imminent. It is imminent if it has not already come about.

Knowledge of the situation first began to break upon the British and American merchants when in response to

recent cabled requests from London for prices they submitted bids for the supply for certain Chinese commodities which, instead of being accepted as in former times, were rejected with the comment "Price too high." This happened not only in some of the smaller lines of business but in two of the great export products of China, vegetable oils and oil seeds, on which the particular merchants tendering were convinced they could quote as low prices as any one.

Refusal of first offers led some of them to quote new prices without commission, quoting the exact cost, insurance and freight on the goods in question. Again the reply came back that the prices were too high. Closer inquiry developed that Japanese houses, or British houses in London acting as agents for Japanese, were making much lower quotations. How they could do this the British and American firms failed to understand, since, in some cases they know that slightly higher prices had been paid by Japanese for Chinese exports than they themselves were willing to offer.

Then came a bombshell in the publication by the Japanese of revised schedules of freight from Kobe to the United Kingdom. By these schedules it was shown that Japanese steamers were taking groundnut cargo, for example, at 48 shillings a ton from Kobe to Hull whereas the Homeward Conference rate as published by that body was 190 shillings. Since the rate from Shanghai to Kobe is about $6 Mexican a ton, or at the then rate of exchange, about 11 shillings, it appears that Japanese shippers can purchase China products in Shanghai or other ports, ship them to Kobe and tranship to the United Kingdom for about 60 shillings a ton, plus the cost of transshipment. This gives the Japanese an immense advantage over shippers on British and other vessels charging the Homeward Conference rates of 130 shillings a ton.

It is obvious that no firm compelled to pay the Conference rates can hope to compete in any product which the Japanese care to handle, and it also follows that the Japanese buyers of Chinese products are able to pay several Mexican dollars a picul more for China products, thus stifling all present competition in buying, although the ultimate effect of this monopoly probably will be not to raise prices but to lower them, as the Japanese is a good business man and always pays as little as he can for any product he desires.

The question may be raised why the British and American shippers do not take the line of least resistance and avoid payment of the 190 shillings Conference rate by shipping through Kobe. This is impossible since the Japanese have carefully closed this outlet to other nationalities and their polite reply to merchants seeking cargo space for such shipments is that they have no room on their ships to accommodate the same. Whether this statement is actually according to fact at the time the space is requested or not, does not matter, since even with the Japanese shipping and all the ships running under the Conference rate, there is still a sufficient deficit of cargo space and the Japanese need only go out into the market in China to buy any amount of products needed to fill their holds.

Thus far, only the question of British and American trade with Great Britain has been dealt with, but it would also appear that those doing business with the United States, especially with the West Coast, are in a similar predicament as regards Japanese competition. The rate from Kobe to the West Coast is $8 gold per ton according to the last advertised rates of the Japanese subsidized lines whose maximum charges are regulated by the Japanese Government. Add to this the freight of $11 Mexican from Shanghai to Kobe, or about $5.50 gold, and it becomes evident that Japanese shippers can land Chinese products in San Francisco or Seattle for the freight charge of $13.50 gold, plus the cost of transshipment in a Japanese port, which probably runs less than 50 cents gold a ton, making a total freight and handling charge of $14. The Pacific Conference rates are $24 gold a ton, which gives the Japanese an advantage of $10 a ton, so that no American shipper or any other than Japanese, can hope to compete.

While the effect at present is evidently to restrict trade in China products to the Japanese, it must not be forgotten that when trade lines are once established in China they tend to persist, and Japan's monopoly of the field to the exclusion of all other competitors, gives her an opportunity of securing a strangle hold on the China market which may be difficult to shake off when normal conditions as regards shipping return.

The beautiful thing about this competition is that it is perfectly legitimate and has come about through the fact that Japan has been handed the dominance of the Pacific by the enforced withdrawal of the Pacific Mail lines and the general lack of American ships in Pacific waters. In fact so greatly have the Japanese been aided in their policy of "peaceful penetration" by the present shipping conditions that their entire diplomatic attitude towards China shows signs of a change. Their subconscious argument probably is "What is the necessity of force or threat of the same as displayed in the famous twenty-one demands, when the shipping situation has put us in a position simply to let economic advantages do their work and secure us that dominant place in the trade of China which we have so long contended was ours by right of proximity."

Be that as it may, other nations engaged in business in China are not viewing with complacency the advance of Japan's commercial place at their expense, especially now that efforts on their part to secure relief by lower rates on the China run have proved unavailing, and strong representations made to the British Government have failed to reduce the rates of the British owned ships in the least. When it is considered that even the 48 shilling rate from Kobe to United Kingdom ports represents a considerable increase over conditions prior to the war and that Japanese subsidized lines are making money hand over fist, declaring unprecedented dividends, it would appear that this firm combination of Japanese merchants and ship owners is being enabled to build such a wall around the trade of China that even a sweeping slash in rates will fail to demolish it. Past experience has proved that the Japanese can run their ships on lower freight rates than those of other nationalities, so that it may take sterner competition than ever has occurred in the past to make a breach in the new economic wall which Japan has constructed around China, a wall in which no diplomatic representations can force an "open door" since it is all so simple and above-board, being based on conditions over which diplomacy has no control.

## JAPAN AND FORMOSAN FORESTS

The British Consul at Tamsui reports that the exploitation of the extensive forests in the interior of Formosa is a matter which has been engaging the attention of the Government authorities for some years past. Tree-felling in the Mount Ari forests has been rapidly proceeded with and in 1915 the first trial exports of Arisan timber to foreign countries took place. The amount of timber now produced at Arisan is about 3,000,000 cubic feet per annum. The most up-to-date methods of timber extraction are employed and the logs are sent down to the yard at Kagi. This timber yard is situated on land adjoining the starting point of the Arisan Railway, which runs for a distance of 41 miles up the slopes of the mountain. Aerial wire transporters have been installed and the collecting power of the machinery now in use is from 10,800 to 14,400 cubic feet per working day of ten hours.

Two new forests have been discovered, one in Taichu Prefecture on the slopes of Mount Hassen, and the other in Giran Prefecture in the upper reaches of the River Daidakusuikei in the neighbourhood of Mount Sansei. According to present estimates, the area of the Hassen forest is about one-half the area of that at Mount Ari, while the forest in Giran Prefecture is one and a half times as large as the Arisan forest.

The enormous difficulties encountered at Arisan in extracting the timber, which necessitated the construction of the railway above referred to, will not, it is thought, be experienced at either of the new forests, as there are convenient waterways for floating the logs down to the sea coast or railway.

# RESTORATION OF REPUBLICANISM IN CHINA

## Yuan Shih-kai Dies and is Succeeded by Li Yuan-hung

We enter upon practically the last section of our record of the difficulties which have been created in China by the attempt to restore a Monarchy, with Yuan Shih-kai as Emperor. With the close of last issue of the FAR EASTERN REVIEW the retirement of Yuan Shih-kai was virtually decided upon, the final negotiations were proceeding, preliminary arrangements had been made for his departure from China, and then the great solution came in his death on Tuesday, June 6. Vice-President Li Yuan-hung immediately succeeded to the Presidency, thus fulfilling the desire of the "Independent" provinces, and meeting the approval of the majority of those in the Northern provinces.

In continuation of our record of the ill-fated Monarchy movement, which, however, has had a distinctly happy ending for China, it must be remarked that the failure of the Nanking Conference had a disturbing effect towards the end of May. The Conference faded out of existence after having cast a vote in favour of the retirement of Yuan Shih-kai, though General Feng Kuo-chang and others deny the report. That the result of the conference was not according to the desires of certain of the promotors, however, is certain. They aimed at securing a unanimous vote for the retention of Yuan Shih-kai as President with limited powers, and report has it that expectations were completely upset by the enthusiasm of the delegates for his retirement. This was practically the last public effort made to retain Yuan and even his closest supporters began to realise that the inevitable would have to be faced.

### *Szechuan Declared Independence*

As was expected Szechuan Province declared independence, thus giving convincing evidence that genuine sympathy with the South was spreading in former Northern strongholds. With the hope of persuading Szechuan to return to the fold the President issued the following Mandate on May 24:

A circular telegram of Chiang Chun Chen Yi states: "In a telegram dated the 3rd inst. I urged the Great President to retire; but in reply he attempted to procrastinate under the plea that he had to devise an effective method for future reorganisation. Consequently I sent him another telegram on the 12th, asking him officially to declare his retirement. But again he replied that he would submit the question to the discussion of the Nanking Conference. This clearly proves that it is not his sincere intention to retire. Therefore all connexion with the Great President is hereby severed, etc."

The position and office of the Great President is based on the election of the citizens of the five races of the whole country; and special provisions have been made in the Constitutional Compact as to the conditions under which the Great President must vacate office. The retirement of the Great President is not within the right of a portion of military men to demand. If such a precedent be created, all successors to the office of the Great President—no matter who they may be—will be liable to face the opposition of the military men of a few provinces, who may league together and demand by force of arms their retirement. Disturbances will then be continuous; and the disaster of internal strife which has been prevailing for many years in Mexico, will result. A step that would have this effect is therefore not to be expected of any one who has any spark of humanity and patriotism in him.

As to the idea of severing connexion with me in an individual capacity. I have to observe that I am the Great President: and it is therefore just as impossible to separate me from the Great President as it is to separate Chen Yi from the Chiang Chun of Szechuan. I am still occupying the position of the Great President and continue to represent the Chung Hua Min Kuo in accordance with the Constitutional Compact. To sever all connexion with me in my individual capacity differs in no sense from severing all connexion with the state. The real situation cannot be misrepresented by juggling with words. Nor is it possible to disregard the law.

I, the Great President, however, wish to point out that I intended to retire long before Chen Yi and others made their demand in that sense. I have on many occasions privately consulted important high officials on the question of future reorganisation; and they have all been of the view that the consequence of such a step, whether in respect of internal or diplomatic relations, would be great unless the same should be taken with great care: without such care disaster might befall the nation. In reply to the telegram of Chen Yi dated the 3rd and received on the 6th, I replied that the suggestion coincided with my heart's desire. As the situation here necessitates an adequate plan for future reorganisation, Chen Yi was asked confidentially to consult with the Government regarding the same. In a telegram of Chen Yi's dated the 6th, he stated that he proposed to secure the views of other provinces and would elect Chiang Chun Feng Kuo-chang to act as arbitrator, etc. In a later telegram, dated the 12th, Chen Yi forwarded a telegram from Tsai Ao requesting that the declaration of retirement be made at an early date. At this juncture Feng Kuo-chang and others invited the delegates of the provinces to a conference at Nanking for the purpose of discussing the Great Policy. As Chen Yi had himself proposed to elect Chiang Chun Feng Kuo-chang to strike the happy medium, it was only proper that I should refer the question to the Nanking Conference. Yet in spite of the fact that Chen Yi was ordered confidentially to consult the Government, he has refused to do so and sought to condemn me for procrastination. Chen Yi himself proposed to ask Feng Kuo-chang to act as an arbitrator and yet he now says that it is not my sincere intention to retire. His words are contradictory, showing that he has been changing his views according to his whims. It is beyond my understanding what he means by severing all connexion with me.

I, being a man of small virtue and little ability and daily embarrassed by difficulties and hardship, am eagerly longing to fulfil my long cherished intention. I can say without reserve that I have not the slightest idea of lingering at or refusing to give up my position of authority. But the punitive forces from various quarters total over 100,000; and Chinese and foreign merchants, who are collected in large numbers along the Yangtse, all need protection. And as the views of many provinces are by no means uniform but of a most extreme nature, danger now lurks in every corner. The reasons for this state of affairs are confused. If I should suddenly take my departure without having devised an adequate measure for the future welfare of the country, the country will certainly break up into pieces; and the confusion will then be more than double that of the present day. In such a vain attempt to secure a mere reputation for virtue, I would have sown the seeds of many dangers for the country. Seeing that this does not agree with my original intention to save the country, I would be ashamed to face my countrymen if I were to do so. In my view the devising of a plan for future welfare is the key to the safety of the country; and it must be attended to in an effective manner.

I shall retire into private life as soon as an adequate method is found. I shall consider it my greatest fortune if the day will come when I shall be relieved of my heavy burdens.

On the 15th. the representatives of the provinces met at Nanking to discuss the Great Policy. Orders were given to Feng Kuo-chang on that day thoroughly to discuss the question and to consult the Central Government from time to time to arrive at an adequate method so that all might share in the responsibilities and that the State might be kept intact and not thrown into a state of ruin. But up till now no reply has been received from that quarter. While the glory or otherwise of one person is an insignificant affair, the safety of the nation is paramount in importance. I, the Great President, have always placed the salvation of the country before everything else. As long as I am in office I shall shoulder the responsibility. I shall under no circumstance give free rein to any passing mood of temper or to sacrifice all for the sake of my reputation, which will cause the country to suffer dangers of extraordinary magnitude. Some day impartial criticism will triumph; and it is not my wish to regard praise or criticism just now. My wish to retire is my own and originated with myself. I have not the slightest idea of lingering with a longing heart at my post. Chen Yi is now at Chengtu, which is far away from here. He has been therefore looking at the situation in the Capital through a smoked screen, and he does not realise the importance of making the necessary preparations for future welfare. This I have noted with great regret. A mandate has been issued ordering Chen Yi to vacate his post and come up to Peking to discuss the matters of future reorganisation. Let him start on his journey without delay. This is my order.

Naturally, the order issued to the Chiangchun of Szechuan to come to Peking was disregarded, and it was obvious that Peking had completely lost control of the great province.

A further shock was administered to the Capital a few days after Szechuan seceded by a notification that the province of Hunan had also decided to cast in its lot with the "Independents," a telegram to that effect arriving in Peking on May 29. This secession was not at all unexpected, the Chiangchun being a brother of Tung Hua-lung, a leading Republican.

Shantung Province was constantly in the mouth of Dame Rumour, as a secessionist, but despite the efforts made by the Republicans in various localities, and especially at Tsinanfu, the high officials remained loyal to Peking. The disturbing feature of the movement to bring about the secession of Shantung was, of course, the active participation of Japanese. Even the Republican leaders in Shanghai became anxious lest the Japanese should succeed in compromising them to the ultimate danger of the country.

### Yuan Disclaims Responsibility

The success of the Republicans in obtaining the overt assistance of Szechuan and Hunan affected the Chief Executive seriously and on May 29 he issued the following lengthy Mandate in which he disclaimed responsibility for the Monarchy movement:

**Liu Kuan-hsiung**, Minister of Navy, who has returned from a cruise in the South, has personally informed me that since the cancellation of the monarchy, there has been a general confusion of views, and diverse rumours have been in circulation. Those bent on trouble have been creating disturbances by inventing curious versions of the cancellation. For this reason he asks that the entire story of the monarchist movement be plainly given in order to expel doubts in the mind of the people, etc.

A special mandate was issued by me, the Great President, on the 21st of the 3rd month of this year, cancelling the acceptance of the monarchy effected on the 11th of the 12th month of last year, and condemning myself by stating at the same time that my lack of virtue and ability was in truth responsible for failure to win the hearts of the people and to realize fully the actual state of affairs. I have had no wish to say too much respecting the subject. But those who are opposed to me have recently invented curious tales, calculated to misrepresent all real facts. The harm involved in damaging the reputation of one person and misrepresenting facts is comparatively small; but disturbing the peace and order of the country as a result of agitating the current opinion of the whole country, is, however, great. I am therefore compelled to give a complete and clear account of all the facts so that the whole country may know and rumour may be stopped and peace and order maintained.

Last year the ordinary people of the various provinces and special administrative areas as well as the people and nobles of the Manchu, Mongolian, Mohammedan and Tibetan races approached at various times the Tsan Cheng Yuan, which was then acting in the capacity of the Legislature, submitting their request for a change of the Kuo-ti. As Great President I could not express any view on the subject, while it was my duty to maintain the then existing form of State. I accordingly delegated Yang Shih-chi, Senior Under-Secretary of State, to the Li Fa Yuan to declare that the change of Kuo-ti was not suited to the demands of the time. As to the petition of the citizens, its purpose was to strengthen the foundation of the country and to raise the standing of the country to a higher level. As the constitution of the Min Kuo was then in the process of making, I expressed the view that a careful consideration of the conditions would result in the discovery of an excellent law. Thus it is shown that my action was to guide the petitions of the citizen within the bonds of the Constitution. Since the procedure for the promulgation of the constitution was based on the Constitutional Compact of the Min Kuo, the maintenance of the Kuo-ti was necessarily included therein. Later on the Tsan Cheng Yuan—in compliance with the petitions of the people of the various provinces and special administrative areas as well as the Manchu, Mongolian, Mohammedan and Tibetan people and nobles—made a recommendation to the Government either to convene the Citizens' Convention at an earlier date or devise other adequate means for ascertaining the will of the people in order to arrive at a fundamental solution.

In reply, I, the Great President, stated that as the Citizens' Convention was empowered to decide the constitution, the will of the people should be ascertained when the Citizens' Convention met after the completion of the final election. This action of mine was also based on the idea of the keeping within the bonds of the Constitution of the Min Kuo. The Li Fa Yuan, as a result of the second petition of the Union of Petitioners of the whole Country and the Society of the Representatives of the Public People of the whole Country, held another meeting and passed a resolution to the effect that in accordance with the provisions of Article 8 of Chapter 1 of the Constitutional Compact, which states that the sovereign rights of the Chun Hua Min Kuo are vested in the entire body of the citizens, the question of Kuo-ti should be settled by the Convention of the Representatives of the Citizens. The Li Fa Yuan also passed the organisation law for the same for promulgation. The original despatch of the Li Fa Yuan states that, while the Yuan was not prepared to discuss the decision already made by the Great President, the Yuan was of the opinion that in view of the fact that the question had been referred to the Yuan for reconsideration in obedience to the will of the people, the maintenance or change of the Kuo-ti should follow the will of the people. The Li Fa Yuan accordingly decided to settle the question by a process of voting which would enable the representatives to record their free will by writing either the word "approve" or "oppose." Thus it was seen that the Li Fa Yuan was prompted by their wish to respect the will of the people in making the said law. It then became my duty to promulgate the same.

At that time the princes and nobles of the Manchus and Mongolians as well as the civil and military officers of the various provinces and special administrative areas continued to pray for the immediate adoption of a constitutional monarchy in words at once sincere and earnest and in a sense indicating that they were not willing to wait. I, the Great President, continued to be of the view that as the change of the Kuo-ti was a matter of grave consequences, it should not be undertaken in too great a hurry. But in view of the provision of the Constitutional Compact which provides that the sovereign rights of the Chung Hua Min Kuo are vested in the entire body of the citizens, the decision of the citizens to change the form of Kuo-ti could not be interfered with. Nevertheless I merely ordered the officials under me to maintain peace and order in their respective localities and to wait quietly for the final decision of the citizens. Thus it is shown that I, the Great President, was unwilling to listen too readily to the pressing prayers and persistently sought to ascertain the real wish of the people for my guidance. My desire to respect the sovereign rights of the people can, therefore, be laid before the world without a blush.

Furthermore, repeated orders were given to the various superintendents of elections in the provinces and special administrative areas, strictly cautioning them to exercise special care and not to allow matters to be done in a hurry as that would result in corruption. Tung Kang, Chief of the Supreme Court, and Censors Tsin Pao-shan, Hsia Yin-kuan, Fu Tsen-hsiang and Mai Ti-yen were ordered to investigate the election process of the Convention of the Representatives of the Citizens and to correct or cancel any feature that was not in accordance with law. I, the Great President, have therefore done everything I could to ascertain the real will of the people by taking measures to prevent every possible corruption, the same being in pursuance of my wish to respect the will of the people.

When the Convention of the Representatives of the Citizens reported and submitted to me the number of votes, which were unanimous for the adoption of the constitutional monarchy, and when the representatives of the citizens honoured me, the Great President, with the throne, and when the Li Fa Yuan in compliance with the request and acting as the Principal Representatives, prayed that I should ascend the throne, I, the Great President—while on the one hand believing that there was no ground for me to discuss the question of Kuo-ti, already settled by the Representatives of the Citizens in accordance with the provisions of the Constitutional Compact which state that the sovereign rights of the Chung Hua Min Kuo are vested in the entire body of the citizens—was, when the question of the designation come under consideration, fully aware of the fact that there was no achievement of mine worthy of mention, while my virtue was by no means spotless.

Furthermore, as I, the Great President, had taken an oath before the Tsan Yi Yuan that I would do my best to maintain the Republic, I realised that I would be violating my oath and placing myself in an impeachable position if I were to set up an imperial system for myself. I therefore returned the designation petition to the Li Fa Yuan and advised it carefully to reconsider the matter and select and designate another person for the strengthening of the foundation of the nation, while in the mean time I, the Great President, in my original title and capacity, would maintain the situation throughout the country. In this my wish to refuse to set up an Imperial system for myself could be plainly seen.

The Convention of the Representatives of the People and the Principal Representatives, however, were not willing to accept my sincere refusal but stated that my apology about lack of achievements and virtue was merely an exaggerated form of politeness. They also expressed the view that the oath I took was based on my position as the Chief Executive of the country, and the position of the Chief Executive was based on the Kuo-ti of the Min Kuo, while the Kuo-ti was based on the will of the people. Chief Executive, therefore, acted only in accordance with the will of the people. If the will of the people should be for the Republic then the oath was valid in the existing form of Kuo-ti, but if the will of the people should be for constitutional monarchy then the validity of the oath would change with the change of the Kuo-ti. Their prayers were of such an earnest pressing nature that I, the Great President, had no other excuse to offer them. Consequently I informed them that as the building of a new great empire was a matter of great magnitude, it should not be established in a hurry. The Ministries and Boards were then ordered to make careful preparations and report to me when the preparations were complete so that the step might then be officially executed. The reason why I, the Great President, did not ascend the throne under the excuse of making the necessary preparations was that I had never changed my determination to reject the Throne.

In dealing with others, I, the Great President, have always been guided by the principle of sincerity. It was of course possible that some of the officials were not sincere in designating me for the throne and that the views of the various political parties were prejudiced or that the process of election was faulty or that the final balloting by the representatives was imperfect. But so far as I myself was concerned I only heard the earnest pleadings of unanimous voices. Just as I was never anxious to witness unexpected development, it never occurred to my mind to suspect insincerity on

the part of the petitioners [voters]. Even those who are opposed to me were mostly among the advocates. It was consequently impossible for me to dream of such a state of affairs. I do not deny that my fault lay in lack of wisdom and power of discerning things.

When war broke out in Szechuan and Kueichow it was all that I could do to blame myself. Indeed the Tsan Cheng Yuan passed a resolution to resort to armed suppression: but the national troops merely defended the territory of Szechuan and Hunan and no attempt has ever been made to carry to the extreme the military campaign. On the other hand my sympathy has gone out to the suffering people and the thought has disturbed my mind while eating or sleeping. How then could I have let my original desire to save the country and the people to be transformed into a bone of contention for power and privileges. Finally a mandate was issued forbidding presentation of petitions and telegrams praying for the ascension of the throne.

Another mandate authorised the hastening of the convocation of the Li Fa Yuan with the view that it might meet at an early date and thus enable me further to ascertain the wish of the people and thereby secure a means to turn the tide. I realised that I was responsible for all the sins of the people at every point of the compass, and I should not allow the people to suffer, or the soldiers to bear hardship, or the country to remain in a state of panic and commerce to decline. I searched my heart and a sense of remorse seized me.

I therefore took the bold step of issuing a mandate, cancelling my acceptance of the throne and stopping all the preparations connected therewith. This is a rough account of the facts of the whole movement. As the original documents are still on file it will not be difficult to examine the same. In addition to the publication of the petitions and telegrams from the people, troops and officials of the provinces and special administrative areas, praying for the change of the Kuo-ti, supporting the designation and praying for the early ascension of the throne, I hereby issue this mandate for the information of the whole country.

Yuan's effort to disclaim responsibility was unconvincing to the Republicans. They recalled the ceremony of worship which he conducted at the Temple of Heaven on December 23, 1914,* a ceremony hitherto regarded as the privilege of the Son of Heaven. Also they argued that had Yuan not desired the Throne he had the power to suppress the whole movement at the outset or at any other period of its growth.

### The Financial Crisis

The financial crisis produced by the issue of a "Moratorium" increased commercial difficulties and practically caused a cessation of trade. Efforts made by the Government to obtain money failed and by the end of May the situation became desperate. Foreign banks stoutly declined to advance any revenue from the Salt collections, and no foreign loans could be obtained. With the object of increasing public confidence in the notes of the government banks a Mandate was issued on June 1, but it had no influence upon the public. The Mandate was as follows:

Some time ago owing to the unusual financial stringency, the Kuo Wu Yuan issued an order suspending all payment of specie against notes of the Bank of China and Bank of Communications. This is obviously a temporary measure and is different from the issue of inconvertible notes. We learn, however, that arising from the suspicion of the merchants and people several forms of evil have sprung up in this connexion, calculated vitally to affect the future finance of the country. The Yuan has now been instructed to devise measures for the maintenance of the market. The notes of the two Banks are factors on which the credit of the whole country relies. They are, therefore, as good as actual silver and absolutely guaranteed by the Government. As soon as the financial market has improved, we guarantee that these notes shall be convertible into silver as per their face value. The merchants and people should, therefore, not entertain suspicion but continue to use the same so that these notes may continue to circulate and the national currency be respected. The various official organs are hereby ordered to give instructions to this effect so that all may abide by the same.

### The Republicans and Parliament

Although no communication was being held between the leaders of the Republicans and the Peking Government the Republicans were actively endeavoring to assemble the members of the disbanded Parliament at Shanghai. In this connexion the following declarations were despatched by the Military Council at Shaoching, in Kwangtung Province, to Li Yuan-hung, who was previously declared by them to be President of the Republic:

**To the Great President Li Yuan-hung:** The functions of this Military Council have already been briefly stated in Declaration No. 4 of the Military Government of the National Protection Army. In order to prevent misunderstanding we hereby take the opportunity to issue another statement on the subject. The Council has been organised for the purpose of meeting the unprecedented situation now prevailing in the country and dealing with matters of the moment which have not been provided for yb law. Since a good many provinces have declared their independence, there ought to be a united policy respecting military operation and finance. Whether in respect of diplomatic intercourse or dealings with Yuan Shih-kai, a unanimous policy of the entire South must be maintained. It is therefore an absolute necessity to form an organ for the purpose of bringing about perfect co-operation. People as well as troops of several provinces have long ago suggested the formation of a provisional Government. In our opinion, however, such a Government should only be formed by the mandate of the Great President and with the approval of Parliament. Both of these requirements, however, cannot be fulfilled under the existing circumstances and the formation of a Government is therefore impossible.

The main object of the raising of the righteous banner is to uphold the law of the country. How shall we be able to condemn Yuan if we ourselves should form a Government in violation of the law? But we cannot lose sight of the fact that, while a Government cannot be formed under the existing circumstances, the date of a permanent settlement is yet distant. The lack of an organ of unity may result in differences of opinion, thus causing confusion. Under such circumstances it will be impossible to drive away the tyrant and suppress the enemy. This Council has, therefore, been established to exercise general control over military affairs. In nature the Military Council is not a little different from that of a regular Government which exercises control over every administrative affair of the country. The regulations provide that the Council shall at once cease to exist as soon as a formal Cabinet is formed in accordance with law. This shows clearly how determined we are to avoid anything suggestive of a violation of the law.

The second point we wish to emphasise is that the Council is not limited to the provinces which have declared their independence nor is it intended to exclude the provinces which have not. It must be remembered that the general uprising against Yuan is really a movement supported by the people of the whole country. Some provinces are slow in declaring their independence, but this is simply because of their geographical difficulties or other circumstances. It is safe to say that the provinces which have not yet declared independence are just as hostile to Yuan as those that have already done so. The organisation of the Military Council has, therefore, not followed the usual line of sectional administration but merely calls for the qualification of the Military Councillors based on actual military authority. The number of Military Councillors will be raised as other provinces join the ranks of the independent provinces. The aim of the Council is to secure perfect understanding and co-operation and not to monopolise power and thus prevent individual activities. It may thus be seen under what difficulties and embarrassment we have worked in instituting this Council. In short the present time is a time for emergency measures, and it is with the strictest determination to confine our activities within the bonds of law that we have organised this Military Council to meet the demands of the actual situation.

The Parliament is one of the highest independent organs of the State, and on it the life of the nation depends. Yuan Shih-kai, ex-Great President, has long entertained wild ambitions and his first unlawful act was unlawfully to dissolve the Parliament, thereby removing the only obstruction against his treasonable act of converting the country into his own private property. It was this absence of all processes of legal solution which compelled us to resort to political revolution and by raising the righteous banner against the . . . . Heaven hath smiled on China, and the righteous cause has made rapid headway while the days of the "individual" are now numbered. Nevertheless it has been found necessary during the last few months of the military campaign to resort to measures of expediency in order to meet the demands of the extraordinary situation. This has of course been necessary; but it must be recognised that such measures cannot be retained as permanent institutions. Law is the only bond which is capable of holding the nation together unto everlasting unity. The protection of the existence of the country and the life of the people can only be assured when every one of the citizens, including troops and ordinary people, high and low, will guide their conduct by the law. The reason why the citizens are so willing to sacrifice their all to bring about the punishment of Yuan is because the latter has during the last year or two aimed at suppressing and uprooting all idea of law from the country and endeavoured to undermine the very existence of the nation. The real spirit of the present righteous movement can be expressed in a single phrase—the protection of law.

Since the Parliament is the most important organ provided for in the Provisional Constitution and from which all laws have their origin, how shall we be able to reorganise our administrative affairs if the restoration of the Parliament is further delayed. We hereby notify the members of the National Assembly and call on them speedily to formulate a programme for the convocation and a meeting place of the Parliament so that all unsettled questions may be settled without delay, and all the organs called for by law may soon be organised.

There is one more point we wish to mention in this connexion. As the restoration of Parliament will be based on the principle of upholding the law of the nation, it becomes necessary to nullify the qualifications of those members of Parliament who deliberately participated in the commission of treason or violated the law in other respects. As to the proper procedure to be adopted for scrutiny and examination, efforts will be made to secure as wide a representation of the public opinion as possible; and separate notification shall be issued as soon as a definite plan is drawn up.

Over two hundred members of the old Parliament had assembled in Shanghai, the following communication having been

*See the FAR EASTERN REVIEW for February, 1915.

issued to all who could be reached: "In consequence of Yuan's rebellion, the righteous troops have risen against him. The whole country has joined the movement like the sweeping wind; and a settlement of the general situation is at hand........Yuan continues to show defiance behind the barricades of strong arms and to make use of his bottomless cunning and capacity for intrigue. The disturbances cannot be suppressed, unless the foundation of the country be at once consolidated. We, members of parliament—albeit we have been entrusted by the people with our duties—have not been able to discharge the same during the last three years owing to the unlawful action of Yuan. At this time of extraordinary national crisis, it is our duty to meet in accordance with law. Article 20 of the Provisional Constitution provides that the Senate may have full freedom to call, hold or adjourn meetings. Article 28 provides that the Senate shall automatically dissolve when the National Assembly is inaugurated; and the functions of the Senate shall be fulfilled by the National Assembly. It is thus seen that the National Assembly is empowered to call, hold and adjourn meetings. In order to meet the demands of the necessities of the situation, we have been holding meetings in accordance with this provision; and over two hundred members have now reached Shanghai for this purpose. We have now the honour to issue this formal summons to all the members of the National Assembly, except those who are accomplices in Yuan's rebellion, to report at Shanghai not later than June 30. A suitable place and date will then be fixed for the resumption of the sessions of Parliament."

### Death of Yuan Shih-kai

In the first week of June Peking came to the decision that the retirement of Yuan Shih-kai must be effected, and to that end private negotiations began with the Republican representatives in Shanghai. Steps were also taken to prepare for the departure from Peking, and China, of the Chief Executive, and arrangements were made with the American Legation for protection should that be nece sary. Originally the Republicans demanded the punishment of the Chief Executive, as well as all others responsible for the Monarchy movement, but when it was realised that the best interests of the country would be served by the immediate retirement of Yuan Shih-kai they agreed to give him safe conduct providing that he would guarantee to order the troops under his command to accept the situation. Many Chinese and foreign Ministers believed that the retirement of Yuan Shih-kai would mean immediate mutinies of troops and consequent outrages, and this belief had more to do with the delay in arranging for retirement than anything else.

By the night of June 5 the Republicans had arranged to waive punishment of Yuan, and no doubt the following day would have seen Peking accept the situation. In fact telegrams to that effect were awaited in Shanghai, when the announcement arrived that Death had claimed the right to bring about a settlement of the issue. At ten minutes past ten o'clock on Tuesday Yuan Shih-kai died, and his death relieved China of a tremendous trial. For the previous week Yuan Shih-kai had been suffering greatly.

### Yuan Shih-kai's Last Mandate

On his death bed Yuan once again disclaimed responsibility for the Monarchy movement and after his death the following Mandate was issued as having been sanctioned by him as he was dying:

> The Min Kuo has been established for five years. Unworthily have I, the Great President, been entrusted with the great task by the citizens. Owing to my lack of virtue and ability I have not been able fully to transform into deed what I have desired to accomplish: and I blush to say that I have not realised one ten-thousandth part of my original intention to save the country and the people. I have, since my assumption of the office, worked in day and thought in the night, planning for the country. It is true that the foundation of the country is not yet consolidated, the hardships of the people not yet relieved, and innumerable reforms are still unattended to. But by the valuable services of the civil officials and military men, some semblance of peace and order has been maintained in the provinces and friendly relations with the Powers upheld till now.
>
> While on the one hand I comfort myself with such things accomplished, on the other hand I have much to blame myself for. I was just thinking how I could retire into private life and rest myself in the forest and near the springs in fulfilment of my original desire, when illness has suddenly overtaken me. As the affairs of the State are of gravest importance, the right man must be secured to take over charge of the same. In accordance with Article 29 of the Provisional Constitution which states that in case the office of the Great President should be vacated for certain reasons or when the Great President is incapacitated from doing his duties, the Vice-President shall exercise authority and power in his stead, I, the Great President, declare in accordance with the Provisional Constitution that the Vice-President shall exercise in an acting capacity, the authority and power of the Great President of Chung Hua Min Kuo.
>
> The Vice-President being a man of courtesy, good nature, benevolence and wisdom, will certainly be capable of greatly lessening the difficulties of the day and place the country on the foundation of peace, and so remedy the defects of me, the Great President, and satisfy the expectations of the people of the whole country. The civil and military officials outside of the Capital as well as the troops, police and scholars and people should doubly keep in mind the difficulties and perils of the nation, and endeavour to maintain peace and order to the best of their ability, placing before everything else the welfare of the country. The ancients once said: "It is only when the living do try to become strong that the dead are not dead." This is also the wish of me, the Great President.
>
> (Signed).
>
> Tuan Chi-jui,
> Secretary of State and Minister of War.
> Tsao Ju-lin,
> Minister of Foreign Affairs and Communications.
> Wang Yi-tang,
> Minister of Interior.
> Chow Tzu-chi,
> Minister of Finance.
> Liu Kuan-hsiung,
> Minister of Navy.
> Chang Tsung-hsiang,
> Minister of Justice and Agriculture and Commerce.
> Chang Kuo-kan,
> Minister of Education. 6th day of the 6th month of the 5th year of Chung Hua Min Kuo.

### Li Yuan-hung Becomes President

Immediately after the death of Yuan Shih-kai, the Premier, General Tuan Chi-jui, called upon the Vice-President, General Li Yuan-hung, in company with other members of the Cabinet, and welcomed him as the new President, in accordance with the provisions of the Republican Constitution.

At 10 o'clock on June 7, at the home of the new President, outside of the Palace, the Premier and the Cabinet assembled to perform the ceremony of inaugurating Li Yuan-hung as President. The ceremony was simple to a degree. The new President in a very short address said:

"Gentlemen, we are in difficult times; and it is with a sense of anxiety that I now take up the responsibilities of the State. I am a military man and unlearned in affairs of the State. I hope, therefore, that you will give me all the assistance you can in realising the original intention of the late Great President to secure the salvation of the country and the people."

"We shall do all we can to support you,'' was the short reply of the Premier.

The foreign Diplomatic Corps was notified of the demise of Yuan Shih-kai, and later they expressed condolences to the Premier, at the same time promising moral support to the new President.

On the night of June 7 the first Mandates by the new administration were printed in red. They were as follow:

> I Li Yuan-hung has assumed the office of President on this the 7th day of the 6th month. Realising his lack of virtue, he is extremely solicitous lest something may miscarry. His single aim will be to adhere strictly to law for the consolidation of the Republic and the moulding of the country into a really constitutionally administered country. May all officials and people act in sympathy with this idea and with united soul and energy fulfil the part that is lacking in him. This is his great hope.
>
> II The present general situation is exceedingly precarious. Having just shouldered the great burdens of the State I need the assistance of others in everything pertaining to administrative measures. All civil and military officials outside of Peking should, therefore, remain at their posts and assist in solving the present troubles. Let no man shirk his duties in the slightest degree.
>
> III The Min Kuo was the child of the Revolution of the year Hsin Hai. The late Great President, who supported the Republic and consolidated the whole country, worked diligently day and night planning for the country under great embarrassment. Heaven has denied him longer age and he has left this world after illness. The whole country mourns in sorrow at the thought of his exemplary merits. I am particularly afflicted by deep sorrow as I succeed him with the difficulties of our day. Respecting the funeral and interment, the Kuo Wu Yuan shall instruct the officials in charge of such matters carefully to examine the rites and regulations both of China and foreign countries relating to the subject and draft a suitable programme so that the sincere wish of the State to give full recognition to the merits of the departed may thereby be shown.

All translations in this article are from the *Peking Gazette.*

# THE ADMINISTRATION OF CHINESE GOVERNMENT RAILWAYS

[BY DR. CHING-CHUN WANG]

During the first few decades of railway history, the chief interest which the public took in the new means of transportation was its mechanical and engineering novelties. It gradually became evident, however, that the non-physical problems were even of greater importance. With the unforeseen development of railways in the different countries, and the consequent revolution in the social, economic and political life of mankind, the question of administration and control has become as important as it is complex. From the early fifties, the problem of railway administration has been under constant consideration. The different systems adopted by different countries and the different theories advanced by different schools of thought, together with the fact that no system yet evolved escapes denunciation by some, often considerable body of opinion, while its defects are, at the same time, obvious to its strongest advocates, show clearly enough that no sort of finality has been reached. This together with the fact that railways in their bearing upon political power and social and economical development are the most important industrial undertakings, the world over, and that, as it is said,[1] "the politics of China are railway politics" may perhaps afford a sufficient excuse for writing this paper on the administration of the Chinese government railways during the age when political questions occupy the attention of all classes of society.

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Railway administration in its broad sense embraces every phase of the railway problem. From the broad question of national policy down throughout location and construction of the line to the fixing of rates, running of trains or handling of traffic,—all constitute certain phases of railway administration. It involves the task not only of analysing what constitutes the work but also how the work is or should be done. The object of this paper, however, is rather to show the organization by which the administrative work is accomplished than to go into the details of the work; the few facts of the latter which we have actually covered have been those which have to be kept in mind before the nature and effect of the organization can be properly understood.

### The Development of the Government Railways

Since the introduction of railways in 1876, China's railway policy has undergone a number of changes. At first it was a general policy of opposition, as shown by the fate of the Shanghai-Woosung Railway.[2] The ignorance regarding the new scheme of transportation, the general prejudice against foreign innovations, the fear of foreign influences and the deep-rooted superstitions together with the untactful behavior and irregular methods used by some of the foreign promoters,—all these combined to prevent the introduction of the new means of transportation. Moreover, the apathy against railways was not limited to any one class but extended to all classes of the nation. The railway policy of China then, if any policy existed, was that of exclusion.

Beginning about 1879 a number of the enlightened officials began to realize the usefulness of railways. Efforts were made even at considerable personal risks to introduce railways into the country; but the Court above and the people below were as obstinate as before. In spite of apparently insurmountable difficulties, however, the ingenious and persistent efforts of these enlightened officials gradually removed the barriers. After the Boxer uprising, the Court became too busily occupied with other questions to maintain its opposition against railways. So for about eight years, the Government adopted what may be called a *laisser faire* policy.

By 1907, the Peking-Mukden, the Peking-Hankow, the Peking-Kalgan, the Tientsin-Pukow, the Shanghai-Nanking, the Kirin-Changchun and the Chengtai Lines had been opened to traffic. The enormous returns made by a number of these lines at once made a deep impression upon the people. They began to realize the possibilities of railways as investments. So superstition, formidable as it was, gradually gave way in the face of the increasing usefulness and earning power of railways, and in its place a railway fever set in. The "localization" movement was started, with the slogan that each Province should race against all the rest in building all the railways within its boundaries. Many railway companies were organized. Several Provincial Governments also jumped into the whirlpool. Numerous schemes were embarked upon. Liberal rights were obtained from the Government. A considerable amount of money was raised, and a number of lines put under construction. From all appearances, there was a general enthusiasm for railway building. But the lack of practical experience in this new enterprise more than counter-balanced the force of enthusiasm, in the midst and in spite of which, actual railroading did not go very far. In order to prevent these schemes from becoming complete failures and to extend the then favorite policy of centralization, which had been adopted by the young Manchu princes a few years before, the program of railway nationalization was embarked upon. This measure met with immediate and wide-spread opposition, which led to the Revolution of 1911 and resulted in the overthrow of the Manchu Dynasty. As if heavenly sent for the special purpose of overthrowing the Manchus, the "localization"

1. Reinsch, World Politics, p. 114.

2. After overcoming all sorts of obstacles, the first rail of this narrow gauge line was laid in 1876, exactly 50 years after the 'rocket" made its debut in England. But later opposition became so strong that it had to be repurchased by the Government and the rails, etc., torn up and conveyed from the mainland to Formosa to rust.

movement immediately subsided with the dissolution of the Dynasty.

The spark which started the conflagration, the nationalization policy, however, outlived all the turmoils. This policy has since been quietly carried out until now practically all the provincial concessions are taken back. Side by side with the nationalization program, the policy of making a system of State railways has been definitely adopted. A system of trunk lines which should be constructed and operated by the Government has been carefully mapped out. Thus the policy of creating a system of national railways began with the downfall of the Manchu Dynasty and consolidated itself during the Republic.

### Some Statistical Features

By the end of 1915, there were in all 8,342 kilometres of railway under operation in the country. This kilometrage, from the point of view of administration and control, may be divided into three general classes. Of these the most important is the system of government railways, which comprises fifteen different lines with a total of 5,702 kilometres, thus equalling to 68.4% of the total kilometrage in the country. With the single exception of the Chengtai Line, which has 324 kilometres of narrow gauge, all the rest are standard gauge railways. The second class embraces 2,399 kilometres of "concessioned" lines, such as the Chinese Eastern, the South-Manchuria and the Chiaochou-Tsinan Lines; while the last class consists of 242 kilometres of private lines which are owned and operated by private Chinese companies.

This system of government railways has cost the Chinese Government $398,221,176.00, being about $73,783 per kilometre of line. If the Chinese people are considered as the owners, it would mean that it has cost every Chinese about a dollar to build the railways now in operation.

There are 627 locomotives of all classes which were bought from more than five different countries. A total of 823 passenger cars and 10,418 goods wagons were used in carrying the 26,036,152 passengers and 14,580,264 tons of freight in 1915. A gross revenue of 56.1 million dollars was earned, while 48 millions was spent for doing the business and paying interest on the capital, leaving $8,100,000 to the Government as a net profit during the same period. In addition to the lines under operation, there are now about ten thousand kilometres of line which are either under construction or definitely projected. These trunk lines constitute the system of government railways. The operation of this kilometrage of completed lines, the financing and building of the large trunk lines already projected, the plans for furnishing the country with numerous other lines that are yet not definitely mapped out as well as the supervision of private lines,—all these important tasks are entrusted in the central railway administration of the Government, the consideration of which naturally falls under three heads:—

I. The Central Administration.
II. The system of local Directorates.
III. Other administrative organizations.

This paper will be devoted to the discussion of the Central Administration.

### The Central Administration

Broadly speaking there are two kinds of government railway administration. One has been described as voluntary, as a result of direct policy, the other, as involuntary, assumed because it seems the best way out of an existing difficulty. The Prussian State railways furnish a good example of successful voluntary government administration, while the systems of India and Italy stand as good instances of reluctant state control. Railway administration in China, however, furnishes a third kind of administration, which not only combines certain features of both the voluntary and the reluctant forms of organization, as has been shown briefly, but also contains a third feature, namely, the part which has to do with the foreign loan syndicate.

Different from most other countries, railway administration in China, at first, was considered as a diplomatic affair instead of being taken as a question of industrial development. Thus during the first thirty-five years of China's railway history not only questions of general policy but also matters of finance, construction, management as well as all other details of administration were entrusted to the Tsungli Yamen, the then office of foreign affairs. In the early days, when railways were regarded as a purely foreign institution, which involved more international politics than actual railroading, and when those officials in charge of foreign affairs undoubtedly had the first chance to acquire knowledge about railways before others, it is easy to understand why the administration of railways was put in charge of the Foreign Office. But since railways began to extend, the questions which arose in connection with their administration became of a very technical and complicated nature, it became impracticable to require such questions to be submitted to, and decided by diplomatic officers, very able men though most of the diplomatic officers were, who were principally concerned with politics and who could not consequently be expected to understand, or to have the time to examine into, intricate technical and administrative questions which, to the experts themselves, are full of difficulty. Here perhaps may be found one reason why railways have had such a "diplomatic" career in China and why some of the old railway agreements are difficult to understand and hardly workable according to business principles.

The inadequacy of managing railways in such a way became more and more apparent as railways grew. So in 1903 the administration of railways was transferred from the Tsungli Yamen to the Board of Commerce. This undoubtedly was a forward step, indicating the realization of the fact that railways are more of a commercial rather than a diplomatic nature. But as time went on and railway lines multiplied, this organization was again found inadequate. So in 1906 the Yu-Chuan Pu, or Board of Communication and Posts, was created to assume administrative control over all the railway, postal, telegraph and navigation affairs of the country.

As there was little precedent to follow for the establishment of such a new Board to deal with industrial affairs, considerable time was taken in finding out the best form of organization that would suit the situation. The diagram on the next page gives a sketch of the organization finally adopted. One Minister and two Vice-Ministers were placed at the head of the Board. Five departments were entrusted with the executive work, of which one had to do with railways. In addition to these departments, there were three independent directorate-generals in charge of the administrative work of the telegraphs, posts and railways separately.

It may be seen that two separate organizations were provided for the administration of railways, the Railway Department and the Directorate-General of Railways. The former, being a regular part of the ministerial organization, had charge of the affairs pertaining to the administration of lines built with Government funds and the supervision of private lines, besides performing purely administrative functions of the Ministry concerning railways; while the Directorate-General constituted the administrative head office of all the railways built with foreign loans. It may be seen that the diplomatic features of railway administration were still present, as shown by the existence of the Foreign Affairs Section of the Directorate-General of Railways. As the line between the functions of the Directorate-General and the Railway Department was not clearly drawn, considerable friction seems to have existed at times.

In the first year of the Republic, in conjunction with the wholesale reorganization of the entire administrative system of the Government, the Board of Communication and Posts was also reorganized and its name was changed into the Ministry of Communications. Since then several important alterations have been made; the last one took place in August, 1914, by Presidential Mandate. According to the system as adopted in 1912 and modified in 1914, the Minister is the executive head of the Chinese Government Railway Administration and is alone responsible to the Chief Executive. General administrative control over the management of all the Government railways, the supervisory oversight of private lines, the projection, finance and construction of new lines and the transactions with the loan syndicates,—these and a multitude of other matters constitute the duty of the Minister. All special tariffs and through rates

- **The Ministers**
  - Directorate General of Railways
    - Traffic Section
    - Construction Section
    - Accounts Section
    - Foreign Affairs Section
  - Department of Navigation
  - Railway Department
    - Section in charge of General Affairs
    - Section in charge of Government Railways
    - Section in charge of Private Railways
  - Councillors
    - Telegraph Department
    - Postal Department
    - Department of General Affairs
    - Directorate General of Posts
    - Directorate General of Telegraphs

- **Minister of Communications**
  - Vice-Ministers
    - Councillors' Office
    - Department of General Railway Administration
      - General Affairs Section
      - Transportation Section
      - Supervision Section
      - Compilation Section
      - Foreign Affairs Section
    - Railway Works Department
      - General Affairs Section
      - Civil EngineeringSection
      - Mech. Engineering Section
      - Stores Section
    - Department of Railway Accounts and Finance
      - General Affairs Section
      - Auditing Section
      - Book-keeping Section
      - Statistical Section
    - Comptroller's Department
      - General Affairs Section
      - Book-keeping Section
      - Loans Section
      - Cashiers Section
    - Department of Accounts and Finance pertaining to Posts & Telegraphs
    - Department of Posts & Telegraphs
    - Secretariat
      - Archives & Record Office
      - Registration Office
      - Store-keeper and Miscellaneous Affairs Office

are subject to his assent. All new works and additions and betterments to the properties must be approved by him before starting, and subject to his inspection after completion. While keeping integrity and autonomy of the finances of the different lines, all the financial transactions, accounting records and statistical reports are subject to a careful examination and control. In addition, the Ministry also acts as the transportation agent of the Ministry of War. So whenever troops are to be moved or military stores to be transported, the Ministry of Communications will become busier than ever in keeping one ear to the telephone leading to the War Office and the other ear to that leading to the head offices of the different railways, and this continuous performance goes on very often twenty-four hours in a day. These are some of the important works of the Ministry of Communications. Thus the authority exercised by the Ministry is both regulative and administrative.

For the purpose of carrying on the work as outlined above, the organization as shown in the chart on page 76 was adopted in 1914. At the head of the system stands the Minister of Communications,[1] with two Vice-Ministers as immediate assistants and a staff divided into six departments and five independent offices. According to this organization, the work which was done by the Railway Department and Directorate General of Railways during the Manchu Dynasty are taken up by the three departments which are in charge respectively of general administration, engineering works, finance and accounts. At the head of each department there is a director or chief, who is directly appointed by the Chief Executive and is responsible to the Ministers for the work of his department. Then the departments are again divided into sections, at the head of each of which is a sectional chief who is usually an official of the recommended class and is immediately responsible to his department director.

The principal idea underlying this organization is to divide the administrative work in such a way as to get the benefit of the division of labor and, at the same time, to encourage the management of railways on a business basis. It is evident that an expert in rate making can hardly be expected to be versed in accounts, and that a good accountant may often know little about engineering and *vice versa*. Another idea is to establish a system of mutual checking. From the chart, it may be seen that the functions of spending money, keeping money and accounting for the money are put in the hands of separated departments. Experience seems to show that this system is very wholesome.

To insure smooth working, detailed regulations are adopted, defining the functions of each department as well as the duties of each section. The principal duties of the Department of General Administration consist of the control of the promotion and punishment of the railway staff, the settlement of all questions pertaining to rates and tariffs, the movement of trains, traffic problems and other works of a general administrative character. It looks after the operating and business side of the railways.

The supervision of private lines is also done by this department. Private railways in China at the present time are few and of minor importance, the longest being that of the Canton Railway Company with 210 kilometres. But there are bound to be more private lines in the future, for the proper development and control of which measures have already been taken.

The names of the sections of the Engineering Department illustrate fairly well the functions of the department. All engineering and mechanical questions which need the approval of the Minister are examined and settled by this department. Through this department the Ministry is informed of the engineering progress of all new lines under construction and that of the new works and extensions undertaken by the operating roads. Plans for all engineering and mechanical works, which require the sanction of the Minister, are examined here from an engineering point of view. Parties of engineers are sent out during most parts of the year to survey the projected lines or to conduct reconnoissance for the selection of better routes or the location of new lines. When a railroad or any section of it is finished, it must be inspected by deputies of this department before opening to traffic.

The Department of Railway Finance and Accounts, as its name indicates, has charge of all the financial and accounting questions, such as the control of the railway budget, the management of the loan services, the settlement of all questions pertaining to railway loan agreements, the transfer of funds both among the railways and the Ministry, the compilation of statistics, the accounting for all the moneys earned and spent by the railways both for capital and operating purposes, as well as all other questions pertaining to what is known as the financial administration of railways. The most important work, which has great possibilities, perhaps is the system of financial control which is gradually being exercised through the railway budget, the series of monthly and annual reports which show the progress and results of the administration of the budget and the recently instituted system of examiners of accounts who examine not only the reports and returns that are sent in but go to the railways to test, on the spot, the figures that are reported. This department has close relation with the Comptroller's Department, as it is through the latter that money is actually handled and in conjunction with the latter the finances are managed, while the former keeps the accounts.

1. The following have served as Ministers since the creation of the Board: Their Excellencies Chang Po-hsi, Tsen Chun-hsuan, Hsu Shih-chang, Chen Pi, Tang Shao-yi, Sheng Hsuan-hsai, Alfred S. K. Sze, Chu Chi-chien, Chow Tsz-chi, and Liang Tun-yen.

This is a new department, and is perhaps one of the most busy departments of the Ministry. It may be asked why should the work which required only a section before now keep a whole department with four sections busy? The answer is quite simple; it is that accounts and statistics, whose effects are less spectacular than engineering and whose results less apparent than operation, have received little attention until recently. Very few Chinese knew anything about these matters and consequently very little was done. In fact, the railways were left entirely to thems.lves in the matter of accounts and statistics. As to finance, it seems what was then known by it was largely a question of cash. Each railway kept its own accounts and statistics in its own way and changed its methods as it saw fit. What the Board wanted, the railways could not supply; what the railways supplied, the Board could not use. In short there was a great lack of sympathy and proper understanding between the central and local administrative offices. Under such circumstances, effective control over the finance and management of the various railways was out of question. It was the appointment of the Commission on the Unification of Railway Accounts and Statistics by Minister Chu Chi-chien and the creation of a special department to take charge of the administration of railway finance and accounts by Minister Liang Tun-yen that began to give importance to this phase of railway administration. These actions of the two Ministers mark a formal recognition of the fact that scientific accounting and a system of standardized records is essential for the success of the policy of administrative control over industrial enterprises which the Government has adopted. Without a clear understanding of accounting principles and a strict adherence to accounting laws, no Government can carry on great industrial enterprises with success. It marks the most significant step, as remarked by several authorities, taken in recent years towards the attainment of efficiency and economy in Government industrial enterprises.

While the functions of the different departments are clearly divided, yet it must be evident that there must be many questions which overlap the dividing lines. In fact, a considerable amount of the work involves all the questions of general administration, engineering and finance. In such cases the departments concerned are held jointly responsible, while one is designated to be in charge. After a thorough examination is made by each department separately, conferences are held for the decision and settlement of such joint cases, over which the Vice-Ministers sometimes preside. Similar meetings are held for the transaction of the business of each department, which the sectional chiefs are required to attend. Such meetings have proved of great value in facilitating matters.

To effect this administrative work between the Ministry and the local directorates, the administration of which will be discussed in another paper, a large amount of correspondence is necessary, besides conferences, frequent inspections, and examinations by special delegates. Thus in 1915 a total number of 12,900 despatches and telegrams were received and 14,348 were se..t by the three departments in charge of railway affairs.

The Minister is of the "Specially Appointed" class, and is alone responsible to the highest authority, while the two Vice-Ministers are of the "Directly Appointed" class and are the immediate assistants to the Minister. The departmental chiefs and the councillors are also directly appointed by the Chief Executive, but of a lower grade. Practically all the administration work of the Ministry is done in the departments, while the Councillors Office is in charge of legal and other matters that are of a miscellaneous and isolated nature. While the departments have ample power in the transaction of the every day business, all questions of policy or of importance must be decided by the Ministers. Practically all the despatches are sent out either in the name of the Minister or in that of the Ministry. Those which are sent out in the names of the departments or departmental chiefs are, as a rule, submitted to the Ministers' perusal first. The departments, however, must examine into each case, and furnish all the data and particulars which may be required by the Ministers for deciding each case. Thus the Minister, standing at the head of the whole organization, with the two Vice-Ministers as his eyes and ears and the departmental chiefs as his hands and feet, can always have a general view of the whole situation and is always supplied with the necessary amount of detailed information for deciding questions of policy or importance.

In addition to these regular organizations, there are a number of committees and commissions which are created for the conduct of special works or for the investigation of special questions. Chief among them may be mentioned the Committee supervising the purchase of stores. On account of the supervision which this Committee has exercised, considerable economy in the purchase of stores has been effected. Next may be mentioned the Committee on the Unification of Railway Terms, whose duty it is to standardize all the railway terms which are so widely different with the different railways. This work is more important perhaps, than it appears, in that with the development of through traffic such a standardization of railway nomenclature is a first requirement not only to efficiency but also to safety. Then there is the Standing Committee on the Unification of Railway Accounts and Statistics, which grew out of the Commission bearing the same name. This committee is closely connected with the Department of Railway Accounts and Finance, and is helpful in the proper execution of the uniform system of accounts and statistics which was adopted a year ago. All questions involving the interpretation of the accounting rules or accounting principles are solved through the committee, of which the ministerial officials in charge of accounts and the chief accountants of the important railways are members. This committee helps to make the uniform system of accounts a living institution. In addition there are also a number of other committees on various questions.

A library of literature pertaining to questions of communications is kept for the benefit of the staff. A training school is operated throughout the year for training young men for special services on the railways. The Ministry also maintains a Museum of Communications, which contains about 5,000 models of different engineering and mechanical apparatus and structures of railways and telegraphs. This Museum is open to the public.

### Some Improvements

There is no room in this paper to go into the details of the work done or the improvements which have been made during recent years. Suffice it to say that, besides overcoming unprecedented difficulties caused by the abnormal circumstances of recent years and gradually tightening up the strings of control which got rather loose during the latter years of the Tsing Dynasty, persistent efforts have been made in the direction of making a number of fundamental reforms. The consolidation of the system of national railways, the nationalization of the provincial and private lines, the arrangement of through traffic, the improvement of the train service, the betterment of passenger accommodations, the battling against financial and commercial depressions, the standardization of railway materials, the unification of railway accounts and statistics,—these are some of the reforms which have either been accomplished or got under way. Some of these measures are of such a fundamental character that the benefits derived will be cumulative as the railway system spreads from year to year. Another distinct improvement is in the choice of practical men to take the place of "a number of the old literati whose knowledge of railways was confined to writing poetry about them." We lay emphasis on this point, for in any system of organization the most important unit is the individual. Take the departmental chiefs, for instance, every one of them has spent more than ten years in the study and working of railways, while formerly the posts would have been filled by some expectant taotais who might never have had a ride on a railway. The same thing is largely true regarding the other classes of the staff. Take the Department of Railway Accounts and Finance as an instance, fourteen out of a total of fifty odd men are graduates of universities of foreign countries, eight men have had the experience of actual work on railways, while practically all the rest have had a modern education of a fairly good sort. This forms quite a contrast to the fact that a few years ago only three men with a university education were found in the whole Board, and these three were employed only as interpreters. The result of this change is that the Ministry is gradually proving more useful and more effective in exercising a wholesome control over, as well as in working more smoothly into the system of the whole railway organization. The Ministry knows more thoroughly about the Railway Managements, and the latter also understand more about the Ministry.

# DEMOCRACY IN CHINA IN THE LIGHT OF TRADITION

## The Influence of Classical Literature upon Present-day Developments.

By Rodney Gilbert

The political economist who comes to China with missionary intent, inevitably finds that he may teach the Chinese a great deal, he may reform many things and find countless phases of public life that need reformation, but he will seldom surprise the scholars of the land. He himself will be amazed to find that there is scarcely a principle of government or a theory for reform, which was not expressed ages ago by some Oriental sage or reformer.

China outgrew feudalism a thousand years before it was conceived in Europe, and the elemental principles of democracy were laid down by Confucius five hundred years before the Christian era. The divine right of kings to misrule, if the classics are genuine, was denied in China five thousand years ago, the right of a church to meddle in secular affairs was never admitted, and the civil service system, by which office holders are selected through open examinations, was anticipated by nearly twenty centuries in China.

The Occident has no doubt become weary of the chorus of sinologues who would have us believe that everything under the welkin that is worth while was invented in China, but now that China has a republican form of government and all the West is agape at what it believes to be the most radical and sudden change of economic forms in history, it is worth while demonstrating that while the change in form of government is radical, there has been no change in principles or ideas necessary and that the venerated classical literature of China, upon which public life has been modelled for ages, is the strongest champion of the new democracy.

Jefferson could have taught Confucius nothing about the right of the masses to "life, liberty and the pursuit of happiness," and Confucius confessed that his doctrines were not original but were borrowed from the benevolent teaching and example of China's earliest rulers. Lincoln, who never allowed himself to lose faith in the common people, "whom God must have loved because he made so many of them," had no greater persistence in his belief than Confucius who, after fifty years of rebuffs, insults, and disappointments, still believed that the common people are born good, that rightly guided the efforts of the masses will work for justice, benevolence and a respect for all good things, and that it is the fault of autocratic rulers if the policy of a state is wicked and destructive.

In the "Shu Ching"—the Book of History—a Duke of Chow is quoted as saying that monarchs have fallen because of their sins against the public good, a betrayal of their trust, and, moralizing upon this, Confucius says with emphasis that a ruler's right to control over his people lasts only so long as his virtue. He is responsible to Heaven and the people for the right management of affairs, and when he forgets this responsibility and either oppresses the people or wins the state an evil reputation among its neighbors, it is the duty of the common people to remove him and set up one who has a better understanding of his obligations to humanity. This principle has been stamped indelibly upon the Chinese mind for more than two millenniums, and the right to get rid of an evil ruler is as clearly recognized as the right to eat, sleep, and bring forth children, while there are still potentates in the west who would impress upon the world their divine right to rule as they please, on the mediæval ground that "a king can do no wrong."

Feudalism in China began with the Chow dynasty and ended with it, two centuries before the Christian era. Confucius and other great sages and political theorists were born in the thick of it and grew up with the din of feudal turmoil in their ears. The nation was split up among a host of petty princes and barons, jealous, spiteful rulers, who misgoverned their little fiefs and made continual war upon one another. To an ordinary mind the simplest remedy would have been a strong imperial government, big enough to crush all the little rulers and whip their subjects into a uniformity of allegiance and interests. But this Confucius never suggested. He did not plead for a powerful autocrat, but for the supremacy of the will of the common people, in whose fair-mindedness he had implicit faith. He was afraid of strong rulers, because centralized power would eventually mean tyranny and, as he said, "oppressive government is fiercer than a tiger." Pinned down to what he believed were the immediate requisites of reform in the petty principalities, he said "Sufficiency of food, sufficiency of military equipment and the confidence of the people in their rulers." It would be impossible in the succession of crises which are arising in the modern Chinese democracy to give a better answer to a similar question.

Under the influence of the sages and their disciples the scholars of China have continued to voice the spirit of democracy through ages and have been fearlessly frank in reminding would-be autocrats of their limitations and the right of the people to consideration in all public matters. The well known institution of the censorship, which persisted to the fall of the late Manchu dynasty, was the embodiment of the voice and thought of the people. The Emperor came little in contact with the masses, but since it was in their interests and not in his own that he held his seat, it was fitting that there should be persons near him to remind him of his faults or virtues, to encourage him in an undertaking when the populace approved and to censure anything of which they disapproved. Chinese history simply sparkles with instances of the honesty and fearlessness of the censors, who regarded their position as a sacred trust and never hesitated to reprove a wilful tyrant and tell him exactly what the people thought of him.

From the earliest times the Emperor of China has been known as the "Son of Heaven," but only in the sense that he was used by Heaven as a medium for the expression of its kindly interest in the Chinese people. When the Son of Heaven failed to act as a faithful medium, his sonship was at an end and he was liable to the reproaches of ministers and the rebellion of his people.

Professor Giles, in a recently published series of lectures says: "So long as the ruler was accepted by God and the people, he may be said to have occupied the throne by divine right. But if the ruler failed in his duties, the obligation of the people was at an end, and his divine right disappeared simultaneously."

He then quotes a conversation between a prince and his minister, said to have been held in the year 558 B.C.

"Have not the people of the Wei state done very wrong in expelling their ruler?" the prince asks.

"Perhaps," replied the official, "the ruler himself may have done very wrong. A good ruler will reward the virtuous and punish the vicious; he will nourish his people as his children, covering them as the sky and supporting them as the earth. Then the people will honor the ruler, love him as a parent, look up to him as the Sun and Moon, revere him as they do spiritual beings, and stand in awe of him as of thunder. But if the life of the people is impoverished and if the spirits are deprived of their sacrifices, of what use is the ruler and what can the people do but get rid of him?"

The downfall of the feudal Chow dynasty was followed by the absolute autocracy of Chin Shih Huang, the emperor who built the Great Wall, centralized the government, destroyed the classics and executed the Confucian scholars. He believed in the divinity of kings: his subjects and all they possessed were his personal property, to be disposed of according to his whims. The scholars, full of the traditions of the ancients and the theory that the ruler was a public servant, responsible to the people, who should rule with the thoughtful care of a father, were his open opponents and they perished openly or were hunted into the hills.

In the succeeding dynasty—the Han—scholarship, ancient traditions and democratic ideals again came into their own and the system of public examinations was established, by virtue of which the sons of the common people have held all public offices, from that of prime minister to the clerkship in a country magistrate's office, for two thousand years. It guarantees to the Chinese people that those who control the policies of the emperor as well as the country judges who decide their disputes, shall be men who, irrespective of birth, wealth, or influence, have sufficient mental capacity, cultural training and good taste to recognize their responsibilities as officials and rule according to the wel known traditions of benevolence and justice. While the Chinese conception of efficiency does not appeal to the practical minds of those who set civil service requirements in the Occident, the principle of the system is essentially democratic and fair. The idea of preparing a man for any specialized branch of public life, other than the military, never seems to have occurred to the Chinese until they came in contact with the west. The common standard was one of intellectual capacity and cultural training, a standard which is still vigorously defended by the advocates of classical education in our Western universities.

That this system is not perfect in its workings everyone, in or out of China, is ready enough to admit. The bribery of mandarins, the sale of offices, and the corruption of examiners, have been widely advertised as incidental to the executive system in China by every writer on Chinese affairs. Chinese ideals and traditions do not seem to harmonize with the actual administration of Chinese affairs as they come under observation. Chinese cynics, satirists and reformers have written libraries on the subject. Confucius was as busy in his day searching for an honest and capable ruler, or a just magistrate, as sympathizers with the Chinese are to-day. Expectant officials have had to bribe their way into office, were forced to keep up a display of wealth and pomp for which their salaries were inadequate, and were consequently tempted to resort to extortion and misappropriation to make ends meet. This state of affairs seems to have prevailed in so many epochs of Chinese history, that official corruption is accepted as a matter of fact by government and people. The honest, though brilliant, scholar dresses in a greasy ragged gown and is forced to tell fortunes for a living while the quick-witted, but poorly educated rascal, bribes his way into office and imposes upon the people to the limit of their patience. Under the Mongols in China, corrupt ministers sold the highest offices in the state to brigands and outlaws for a share in their loot, taxes were farmed and protesting officials assassinated. Under the Manchus the sale of public sinecures was the principle source of income for many of the Princes of the blood. Outrage as well as altruism and democracy, has become a part of Chinese tradition, and in novels, fairy tales and other popular literature, political rottenness is taken for granted. This, however, does not mean that it has the support of the people, nor that it wins any support or favor from the common people. The most sympathetic and often the best informed students of Chinese affairs insist that even within the Mandarinate a majority are public spirited and just men, who work very hard in the interest of the people. Chinese history moreover yields the general impression, that honesty of administration and the frequent expression of the public will in public matters has made China the longest lived and the most homogeneous nation in the world.

Slow to wrath and still slower to action the Chinese people have been very deliberate in their reform measures, but throughout their long history they have shaken down a score of dynasties and dethroned a hundred "Sons of Heaven" who took liberties with their rights or over-stepped the bounds of their patience. The divinity of the emperor, it would seem, has been little more than a pleasant fiction. Just as Chinese villagers delight in a gilded god in their rustic temple, so the people at large have delighted in a gilded and glorious head of the nation; but with the spirit in which villagers will knock to pieces one god to replace him with another, the Chinese people have never hesitated when once aroused to unseat a ruler and set up a man of their choice.

The various imperial families of China have begun their careers by a just and faithful administration and have passed out of history in debauchery and shame. The periods of license and turmoil however have been shorter than the periods of good government, a far greater number of honest and faithful officials have found their way into the public records than of rascals and sycophants, and Chinese history is the most faithfully written series of human documents which has come down to us. Emperors have been weak and vicious and officials have been notoriously unjust, but the people have never abandoned their right to participate in their government according to their merits, nor have they deviated a hair's breadth from their standards of economic right and wrong.

The Mongols, Kin Tartars, and Manchus, though conquerors of China, were forced by the pressure of public opinion to adopt the examination system in the appointment of officials. The Mongols conquered all Asia, their arms were irresistible, and the descendants of Jenghis Khan continued to rule many Asiatic peoples for centuries in degeneracy and corruption. In China they lasted a hundred years and then went back to their native grass lands to live in tents and herd sheep, while the Chinese people rose fresh and strong out of the muck of oppression and corruption to enter upon a new period of honest government according to their best historic traditions.

The Manchus, also conquerors, who planted garrisons throughout China to insure absolutism, found, after a generation or so, that their garrisons were not so much instruments of government as hostages, whose safety depended upon their good behavior. The sacrifice of these unfortunates, against whom the Chinese vented their great indignation when the Manchus fell, was one of the most deplorable features of the revolution of 1911.

What has been true of the relations between Emperors and people, has been to an even greater extent true of the relations between the officials and the people. The Emperor was the Son of Heaven, and when he sinned he was removed by the gods, technically at least. But the mandarin was a son of the people, and when he went far astray he was called to order by the people, and in this there were no embarrassing technicalities. The tradition of the dishonesty and greed of officials has made the people look with suspicion upon all who wear the insignia of office. They believe in their system and that it makes for justice, but they have been taught to look for exceptions, so the movements of the official are naturally cautious and circumspect. His claim to office is one of intellectual superiority and culture, as evidenced by his scholastic degrees, and if these are honestly come by his right to govern is never questioned; but still his right to misrule is never admitted. In every town and village there are the watchful gentry and literati, the perennial prophets of the altruism of the ancients, who watch the magistrate's movements with hawk-like intensity. An official salary in China seldom pays more than the mandarin's tea and tobacco bills. The intensely practical mind of the Chinese people grants that a man who has spent his life in arduous preparation for his duties, who is forced to keep up offices and retinues which devour many times his salary, and who works 16 hours a day if he attends conscientiously to his duties, is entitled to some reward; so minor misappropriations, minor extortions and the acceptance of bribes where nothing of any great matter is involved, are winked at. This is not in accord with Western ethics, nor does it harmonize with Eastern doctrines, but it is the practical Oriental way of making the best of a bad job. Public opinion nevertheless serves to keep the majority of office holders within bounds, for a single false step, a single display of avarice, may precipitate them from their lofty pedestals. Thousands of officials die intestate, because they have been unwilling as faithful public servants to "squeeze" any more than was needed for their actual support and the pomp and glamour of

office expected of them. These men are accounted honest and are fairly worshipped by the common people. When a magistrate is convicted in the public mind of gross corruption, the people clamour, the guilds, the gentry, and the literati put their heads together and a petition is sent in to higher authorities, which almost invariably results in the downfall and disgrace of the offender.

Under the Emperors the person of the ruler was surrounded so carefully with the aura of sanctity that the people were as invisible to him as he was to the people and his power to bless or offend depended very largely upon the character of the ministers about him, whose offices were open to the same public competition as those of minor mandarins. Under a purely Chinese dynasty there were few princes or hereditary potentates to crowd the sons of the common people out of the highest offices, and even under the Manchus, with hordes of greedy Tartar princes squabbling for wealth and power, Chinese of ability contrived to rise to the office of premier and sway the policy of the Manchu clique. For some reason while there was a dynastic head to the state, these men of the people worked wisely and honestly in the interest of the people. The country was fairly free from internal dissention and such government as there was ran in a smooth course. It has now become an interesting economic problem to determine why, with the removal of the head of the Imperial state whose power was usually nominal and whose godship was mere fiction, China should be split up among a half dozen warring factions, each led by men who, the people are convinced, are working for themselves and themselves alone, inspired by nothing better than a lust for power and the public revenue.

Those who are familiar with the democratic idealism of the Chinese people and with the just and orderly conduct of their microcosmic communities throughout the land, are convinced that they are temperamentally as well prepared for a republican form of government as any people in the world ever have been. But the ignorance and apparent apathy which the people have displayed to the world since the fall of the Manchu dynasty, in permitting national affairs to conform to their great evil tradition of official corruption, have discouraged many of their warmest sympathizers. Occidentals of all nationalities have been enthusiastic supporters of the republicans in China because they believed from the beginning that the Chinese had sufficient common sense to mould a rational government and to educate themselves up to the mechanical routine of running the affairs of the state along republican lines. The form was new and entailed new activities for citizens and officials, but the spirit, it was believed, was ingrained and had been nursed by tradition for centuries.

Instead of doing what was expected to reform official evils and shape a government, the whole interest of the people converged upon an imitation of purely superficial western manners, modes of dress, titles and vices. Queue cutting was more important than a constitution in the popular mind and the demand for foreign attire, foreign furniture, foreign etiquette, and for instructors to lead the way in all these novel innovations, was far greater than the demand for a rational government or for officials honest and intelligent enough to bring it into being. It took months to decide what offices a man could enter without a morning coat and the number of bows that each high functionary was entitled to. The question of hair cut absorbed more time and attention than the convening of a provincial assembly in street gossip. It was more important for a time to see that all the rag-tag soldiery of the land got into uniforms of foreign cut, than to equip them with rifles. Officials on the Tibetan border went calling in top hats and celluloid collars, while tens of thousands in their districts did not know that the Manchus had abdicated or that Min Kuo meant anything more than the infliction of hardship upon the queue barber.

In short the Chinese, with all their democratic and patriotic tradition behind them, responded to the call for sane participation in their own government in the spirit of Solomon Islanders who have been presented with a keg of beads and a bale of printed calico. The people who have elicited all manner of praise from their sympathizers for several centuries for their honesty and common sense, displayed very little of the former and none at all of the latter. There are three traits of the Chinese character which are patent to all observers, their love of peace, their devotion to commerce, and their horror of foreign intervention, which should, by all the rules, act as a stimuli to a rational settlement of affairs, and which should have made impossible the petty squabbling, the division of an essentially homogeneous people into jealous, backbiting cliques, and the rise of unscrupulous militarists. The Chinese have always detested and despised soldiers. The children never played soldier, and the elders never expressed their patriotism in flag waving, martial parades and blood-and-iron speeches. Statesmen were always their national leaders and scholars their heroes. Their revolutions have nearly always been achieved by the quiet but irresistible pressure of public common sense.

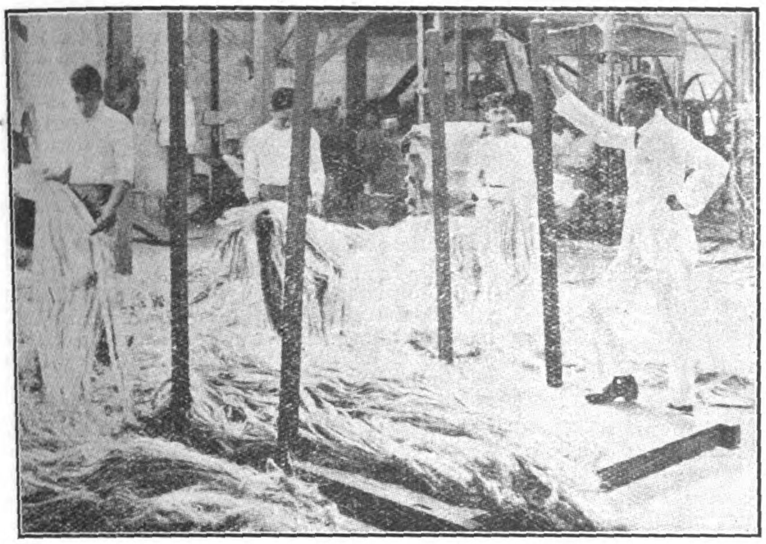
For the very reason that the Chinese are so ignorant of the principles of this new republicanism, because they take so long to find out what they want to know and make up their minds upon it, it is rather unjust to accuse them of apathy during the recent series of national crises. They are undemonstrative as a mass but their leaders are as sensitive as barometers to the slightest variations in popular sentiment, while the Occidental who hears and sees nothing out of the ordinary, has no prescience of fair or foul political weather. For this reason prophesies of the immediate future from Europeans are almost futile. The average European in China is happy if he understands what has come to pass when it is all over. Therefore the only trustworthy guide to prophesy is tradition. One must judge China not by the omens of the times but by a study of the past, for it is a nation which makes a virtue of living and thinking in the past, and which has always conformed at the climax of each political cycle to the sacred traditions of the ancients. The Chinese as a nation have revelled in folly before this, but they have always emerged from their lapses from sanity, through displays of the soundest good sense, the most devoted patriotism, and through the leadership of strong and honest men of the people.

The late Mr. Rockhill, ex-United States Minister to China, and confidential adviser to President Yuan Shih-kai, was a man who knew the Chinese and their language well enough to sense something of the unexpressed opinions of the people and to sympathize with their aspirations. He was a firm believer in the future of the Republic, an optimist in his attitude towards the new order of things in China. In his last speech he said:

> "Mistakes will be made, experiments will fail, criticism, not only of the men but of the methods they employ, will be frequent and violent in China and out of China, but with it all the modernizing of Chinese life, social, political and economic, will go on, and will, it is believed, ultimately create a stronger, richer, and, let us hope, freer and happier country than in the past.
>
> "In the meanwhile I agree with President Eliot in thinking that 'the Western world ought to stand by China with patience, forbearance, and hope, while she struggles with her tremendous social, industrial, and political problem.'"

Many of the staunch believers in Yuan Shih-kai, who believed that his elevation to the Imperial throne was assured and that it was for the general good of China that he should establish a dynasty, were amazed that so strong a man, with the best equipped forces in the country under his hand, yielded so readily to the demands of apparently a handful of southern rebels in remote and isolated provinces. Those who know a little of China are aware that Yuan Shih-kai did not renounce the apotheosis that was within his grasp, and towards which he had been working for five years, because of the armed rebels, but because of that mysterious pressure of unexpressed opinion which emanates from the seemingly apathetic Chinese people, to which none but a Chinese official would be fully sensitive and obedient.

There may be more and grosser mistakes made before China is fully awake to the critical need of a settlement of her internal tumult and disorder, and before varied opinions of the people crystalize into a movement toward unity and toward loyalty and support to the government which they establish, but there is every reason to believe that the China of its own best traditions will rise out of the present political mire and shape a democracy which will do credit to the doctrines of the ancients.



Grading Abaca at one of the chief Grading Establishments in Manila

Government Fiber Inspector Inspecting Fiber by Sample Bales

# HEMP IMPROVEMENT IN PHILIPPINES

The condition of the Philippine abacá industry two years ago was one which fully justified the gravest apprehension. For a period of nearly a century abacá has been an export product of the Philippine Islands. Starting in 1818 with the shipment of about three hundred bales of fiber, the production has steadily increased until, at the present time, more than one million bales of abacá are exported from the Islands each year.

The value of abacá exports represented, for a number of years, approximately two-thirds of the total value of all Philippine exports. With the increasing production of other staple crops, the relative importance of abacá has decreased, but it still remains the leading export product of the Islands. In many sections of the Philippines abacá is the one crop of importance, and thousands of families are entirely dependent on this crop for a livelihood. Under these circumstances the importance of maintaining the abacá industry in a prosperous condition, and of providing for the continued development of this industry, can be readily understood.

For more than a decade there had been an increasing amount of dissatisfaction on the part of the manufacturers, both in the United States and Great Britain, with abacá fiber. This dissatisfaction was largely due to the fact that no uniform system of grading abacá was in existence. Each exporter had his own system of grading and his own system of house marks. As a result of this situation

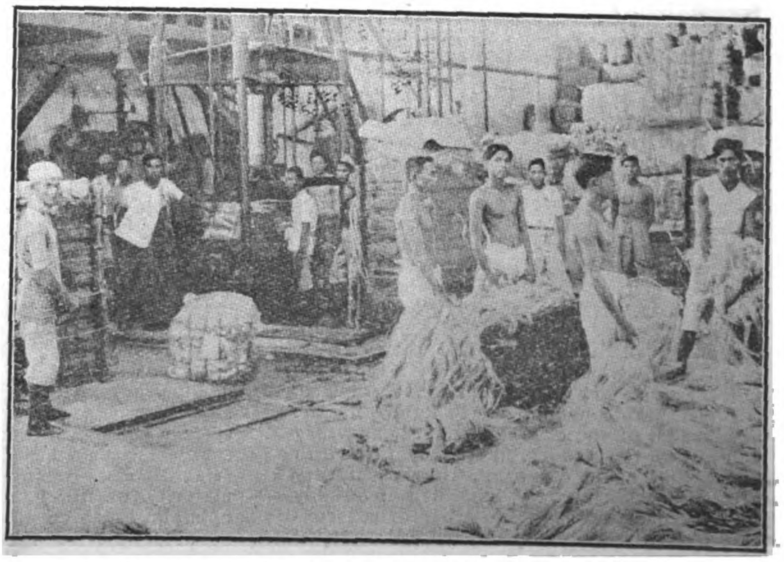
Sorting Abaca and Tying in Hands of Proper Size

there was a great deal of confusion and misunderstanding in the foreign markets, and manufacturers were frequently unable to obtain at a reasonable price the quality and quantity of fiber desired. The alternative was to purchase and use other fibers.

With a view of remedying this situation the Third Philippine Legislature, on February 28, 1914, passed an act providing for a Government system for the inspection, grading, and baling of abacá, maguey, sisal, and other fibers. This law became operative on January 1, 1915 and has been in operation one year, and it may be of interest to know what effect it has had on the fiber industry in general. Obviously, this law was intended to provide certain necessary reforms in some of the methods followed in the fiber industry, methods which were considered prejudicial to its development and welfare. The benefits of the law and its effect in correcting the defects of methods formerly in use are discussed by Mr. M. M. Saleeby, Chief of the Fiber Division of the Bureau of Agriculture in the monthly Review published by the Bureau.

The defects in the methods employed prior to the enactment and enforcement of the fiber-grading law, were directly traceable to the following causes: (1) The lack of fixed and accepted standard grades; (2) the inadequacy of the prevailing methods of grading the fiber and of designating the grades; (3) the lack of any authoritative control over the operation of the grading establishments; and

Government Fiber Inspector Describing the Fiber in each Grade



Method of Baling Abaca, after Sorting and Grading

(4) the more or less general ignorance of the producers as to the quality of their product.

To remedy the above state of affairs the fiber-grading law and the regulations authorized by it embody the following provisions: (1) The establishment of fixed standard grades for each of the chief commercial fibers exported from the Philippine Islands; (2) the requirement that every grading establishment shall grade and prepare fiber for export in accordance with the established standard and with the regulations; (3) the institution of a system of inspection of all graded fiber, and supervision over all grading and baling operations to enforce compliance with the regulations; and (4) the institution of an educational campaign among the producers for the purpose of improving the methods of production and preliminary preparation of the fiber.

## Standardization of Grades

The establishment of systems of standards has recently been a very important factor in the development of industry and commerce. The use of standards for designating the quality of commodities is just as essential as the use of standards for measuring their weight and dimensions, particularly in those instances in which the value of commodities depends in a large measure on their quality. In the case of commercial Philippine fibers, especially abacá (manila hemp), it may be safely stated that no fixed and generally accepted standards of quality existed prior to the enactment of the fiber-grading law.

Abacá varies considerably in quality and in value, and the old methods employed in designating its quality, either in local or foreign transactions, could hardly be called standards in the true sense of the word. The fiber was purchased, graded, and sold almost exclusively under house marks. In theory each house mark represented a specific grade, but in practice such was not the case. Even granting that these house marks did represent specific grades, there were in existence from 80 to 90 grading establishments, each of which used from 10 to 40 or more separate house marks, aggregating a total of approximately 2,500 to 3,000 marks. Other than a house mark there was nothing on the bale to designate the quality of the fiber it contained.

Obviously, such a method was too complicated and too indefinite to be worthy of the name of a standard. The fiber producers, of course, had absolutely no knowledge of what these marks represented, and the manufacturers were forced to know and keep a record of several hundred marks in order to be able to purchase fiber intelligently. Arbitrations were frequently required in order to interpret the correct grade as represented by a certain house mark. If to this is added the inconstancy and unreliability of a large number of the marks then existing, an idea may be gained of the unnecessary friction and confusion which often occurred in these business transactions.

The provisions of the fiber-grading law and the subsequent regulations authorized by it were adequately enforced during the year. Standards of quality were designated and defined, and every bale exported from the Philippine Islands since the date on which the law and regulations went into effect, bears the name of the grade of the fiber contained therein, the name of the grader, the name of the district or province where the fiber was produced, and other marks and data of identification. It is true that house marks are still being used, but their use has become limited to a small number of grading establishments. In such cases the marks are secondary in importance and their use is allowed only when they constantly refer to the corresponding grades of the official standard.

Buyers are now obliged to know only the few grades of the official standard, and they can order the grade required by them with every reasonable assurance that when they receive the fiber every bale will invariably bear the name of the grade ordered and contain fiber of the quality desired. With equal assurance they are also enabled to obtain any type of the fiber for which they may have a preference. The producers, on the other hand, are now offered for the first time the oportunity of lerrning the exact, or at least the approximate, quality and value of their product. This should be of considerable value to all producers who may avail themselves of the opportunity.

## Proper Grading of Fiber

The grading of fiber is based chiefly on its apparent qualities. Variations in quality are either natural or else caused by the manner of extraction and the subsequent handling. The extent of variation allowed between one grade and another is determined by the character of the fiber and the nature of the uses thereof. As a rule, in textile fibers from which fine fabrics are made, the grading is closer and the range of variation in quality is rather small. In cordage fibers, however, such a fine distinction is not called for, and the range in quality is consequently much larger.

To grade cordage fibers as closely and as minutely as silk or cotton, for instance, would not only entail an expense and trouble out of proportion to the value of the fiber, but would be considered by the manufacturers an unwarranted waste of energy and time, and for which they would not be willing to pay the proportionately higher prices. The grading of cordage fiber is, therefore, generally considered to be an easy process. This is true of most fibers of this class, such as sisal, maguey, hemp, tenax, and others in which differences in quality are caused chiefly by the method and the extent of cleaning.

The grades of such fibers are limited, however, rarely exceeding four in number. In the case of abacá the grading is more difficult, perhaps more so than in any other cordage fiber, not because of any finer distinction between the grades but because of the greater variation in the quality. The formation of the abacá stalk is in itself responsible for four distinct grades, to which must be added other grades caused by variations in the extent of cleaning and in the handling of the fiber prior to its arrival at the grading establishment. Natural variations affect the color and length of abacá, but not necessarily its character, while variations caused by improper cleaning and handling affect both color and character.

To grade fiber properly the standard followed must embrace a number of grades sufficient to provide for any variation in color and cleaning which may be encountered in the marketable product. The number of grades in the standard, therefore, depends upon the extent of variation which is considered sufficient to constitute a grade. It is believed that the grades as established by the Bureau of Agriculture are sufficient to include, with a reasonable allowance for variation in color and cleaning, any of the fiber coming under the standard, and in any condition in which it may be in. Such variations as may be encountered in any one grade are not considered incompatible with the uses made of the fiber therein. The name of the district where the fiber is produced in most cases designates the degree of variation, and in this sense may serve as a subgrade or type.

In this connection, critics of the system insist that it is not the Government's duty to determine the number of grades of the standard, but that the manufacturers of the fiber should do so. To this it may be said that the Government consulted the principal manufacturers and buyers, and that the standard as now established has the approval of the majority of the firms. As a matter of fact, the few criticisms directed against the present system are based on directly conflicting arguments, one faction claiming that the insufficiency in the number of grades of the standard jeopardizes the efficiency of the system, while the other faction claims that the same efficiency has been affected by the establishment of too many grades. The majority of those who are of the latter opinion, it may be stated, are brokers and not the actual users of the fiber.

Under the old method of grading abacá fiber, there existed at least ten grades more than are now recognized under the Government standard, and the tendency was to increase them still further by a process of sub-division. This sub-division of the grades had progressed so far that the original basic grades had become almost mere vague and imaginary standards. When a fiber was a trace higher or lower in color or cleaning than a certain grade, it was graded as 12½ or 25 per cent above or below the grade.

To find a fiber exactly of the required narrow limits of color, cleaning, and condition, to which the basic grades were reduced, therefore, became extremely difficult Had the grading of fiber been uniform both in the bale and in the several bales constituting the lot, it might not have been so bad, but the grading of the majority of the establishments was not regular nor uniform, hence unjustifiable mixtures were often encountered, and these became the prevalent basis for the determination of the intermediate grades. This procedure was obviously inadequate and unwarranted, and the large number of grades which were constantly appearing on the market afforded opportunities for so much speculation and arbitration that the smoothness and regularity of transactions, which are essential to all kinds of business, were seriously disturbed.

By the operation of the new system of fiber grading the old tendency to create intermediate grades has been effectively checked, and the fixed grades of the new standard have replaced the old ones. The fiber inspectors have also accomplished good results during the year by supervising the grading at the press, bringing the gradings of the various establishments into closer uniformity, and also eliminating, or at least reducing to a minimum, the mixing of damaged or otherwise undesirable fiber with that of normal strength and condition.

## Proper Preparation of Fiber

The difficulties encountered in the proper grading of abacá are not due to the natural variation in its quality, but to those variations caused by improper cleaning and handling. A lot of fiber which is properly cleaned and sorted at the knife, and subsequently carefully dried and handled, is not any more difficult to grade than either sisal or maguey, nor will it be found to contain more than four or five grades which are easily distinguished and sorted out.

Such fiber, as a rule, is produced by progressive and intelligent men who manage their plantations by up-to-date methods, maintain the necessary supervision over the labor, and sell their fiber by grade directly to exporters or large buyers. These planters invariably find it to their interest to sort their product so as to facilitate its grading. Unfortunately, however, the bulk of fiber producers in the Philippine Islands do not belong to this class. They are either small land owners who produce fiber with their own limited means, or else owners of large plantations who leave the entire management to employees of little or no responsibility.

As a result, a very large quantity of fiber is produced which is neither cleaned in a uniform manner, sorted, nor properly dried and packed. The grading of such fiber is often a very trying process, and in spite of any reasonable attempts to sort and clean the fiber, it never presents the clean and orderly appearance of well-prepared fiber of similar grades. Apparently, such producers are directly to blame for the production of fiber in this condition; in reality, however, the local town buyers should have a large portion of the blame. They make no discrimination, in the matter of prices, between well or poorly prepared fiber, thus discouraging the production of the better grades.

At the outset it was realized by the fiber division that an improvement in the above situation was necessary if the new system was to be perfected. As soon as circumstances permitted a force of assistant fiber inspectors

was organized, trained, and detailed to the principal fiber-producing provinces, for the purpose of educating the producers in the proper methods of cleaning and handling their fiber. The lack of proper machinery for the uniform cleaning of abacá considerably hampered the success of this work, but the attempt proved justifiable and it was continued. This work was supplemented by the publication and distribution of weekly market quotations for the different grades of abacá and maguey, of literature regarding some necessary improvements in methods of cultivation, and by the distribution of samples of the standard grades to the producers.

The success of this campaign was more pronounced and rapid in the maguey-producing provinces, especially in Northern Luzon, and there the quality of the fiber now produced is considered fully equal to that of the Cebú product. In abacá provinces, the campaign met with considerable success in some districts but with little in others. The net results, however, were so valuable that the same work will be continued indefinitely. This work will have to be given increasing attention by the Government, with a view of studying the economic status of the producers and of providing such means as will make them independent of the local town buyers. This, more than anything else, will assist in remedying the economic situation of a large class of producers and will facilitate the work of this division in bringing about the desired improvement in the preparation of fiber for the export trade.

### Statistics Now Accurate

One important result is that for the first time in the history of the fiber industry of the Philippine Islands it is now possible to give accurate data relative to fiber production by provinces and by grades. This information will enable all those who have control over the industry to gauge its progress from time to time, and to take such steps as may be deemed advisable and practicable in order that production may be adjusted to meet the best interest of the producers, as well as the actual requirements of the consuming market. These data are also believed to be of considerable value and interest to both local foreign buyers and manufacturers, for they are thus adequately advised of the available supply of fiber of each grade on the market.

The Government fiber inspectors, during the year 1915, inspected, stamped, and approved 1,011,366 bales of abacá and 59,940 bales of retted maguey. In addition to the above, 224 bales of retted sisal and 483 bales of pacol were also inspected and approved, making a grand total of 1,071,983 bales.

The inspectors rejected 35,000 bales of abacá, or about 3 per cent of the total production, on account of improper grading, packing of damp fiber, or because of the presence of weak or damaged fiber. The most of these rejected bales were regraded and rebaled, however, and the balance was disposed of on the local market, on the ground that it was considered undesirable for export.

Since the drought of 1912-13, the production of abacá has been below normal. During 1915 it was slightly in excess of 1914; and, until the final quarter of the year, all indications pointed to a complete recovery of the plantations from the effects of the last drought, and to a production of between 1,100,000 and 1,200,000 bales for 1916. These hopes were not realized, however, as a series of destructive typhoons passed over the provinces of Albay and Camarines between October 23 and December 10, injuring the plantations there to the extent of an estimated shortage of about 75,000 bales. The last typhoon, of December 6, damaged Sorsogon Province rather severely, and as a result of this, the production for this province during 1916 is estimated to be about 10 to 12 per cent less than during 1915, or a loss of about 12,000 to 15,000 bales. This makes an estimated total loss for the three Southern Luzon provinces during 1916 of about 90,000 bales.

Fortunately, Leyte, Samar, and Mindanao have escaped any damage from typhoons during the year and the plantations there have continued to recover from the effects of the drought of three years ago. In these provinces an increase of production during 1916 is therefore expected, and it is hoped that this gain will nearly offset the estimated loss in the three provinces of southern Luzon. To these bright prospects must be added the extraordinarily high prices paid for fiber since the latter part of 1915, which will undoubtedly induce the producers all over the Islands to harvest the maximum quantity of fiber which their plantations are capable of producing. In many cases, this tendency is unfortunately too marked, with the result that the plants are often injured by excessive harvesting.

Taking all the above factors into consideration, it is believed that production during 1916 will be about the same as that of the previous year. During the first six months of 1916, production is expected to be considerably lower than it would be under normal conditions, but during the latter half of the year it is hoped that it will rapidly increase as the damage caused by a typhoon rarely lasts longer than seven to nine months.

## THE RAILWAY IN CHINESE DEVELOPMENT

By J. Selwin Tait

Railways and banks are the twin handmaids of Commerce: railroads bring business to the market, and banks provide the financial machinery to handle it. Of the two the railroad is more important than the bank. Without the latter, it is possible for business to go on, even if limpingly, but without railways and with the consequent lack of accessibility to market, business dies still-born. A country's business grows in proportion to the development of its railroad mileage. Without railways it took hundreds of years to develop Europe's wealth; with the introduction of railways soon after its birth as a nation the United States developed great wealth with astonishing rapidity—and the colossal individual fortunes realized were the wonder of the world.

The unsealing of China, that is its opening up by railways, will revolutionize the commerce of the world. If China possessed railroad mileage in proportion to its land area, and on the same scale as in the United States, it would own 325,000 miles of railroad. If, however, its mileage was pro-rated according to its population, on the same basis as in the United States, then it would have over one million miles of railroad. In round numbers, the United States has to-day a quarter of a million miles of railroad—while China has 6,000 miles and should have a million. It seems a far cry from 6,000 to a million, but the latter will come in time, and, in the process of coming, it seems to me, wealth will be made which will make American affluence look like poverty, so ripe is the opportunity.

If China's population consisted of untrained, half-savage peoples any great railroad extension would have to be postponed until the people were educated up to a certain degree of productiveness or efficiency—a matter of generations. In such circumstances, any attempt to forecast the rate at which Chinese railroad development would proceed, or its effect when developed, would be futile in the extreme. Such, however, is very far indeed from being the case in China. Its people—even in the remotest provinces—are trained and capable workers—skilled handicraftsmen and agriculturists with the inherited lore of three thousand years of civilization, and the skill in handloom, in metals and agriculture handed down in an unbroken line through a hundred generations—more, indeed, for we know that in the time of Confucius, 25 centuries ago, China was a highly civilized country, and there has been no break in her civilization.

It is not, perhaps, too far-fetched a parallel to compare China's opportunities with a hypothetical home condition. Suppose, therefore, our North and South Atlantic States had always been cut off from our North Central and South Central and Western states by insurmountable barriers; and suppose that they were for the first time opened up to interstate and international commerce, would it not be reasonable to prophesy a vast traffic for the new railroads from the commerce springing full fledged from such a connection? That would not be linking up civilization with savagery, but with equal civilization. So will it be with China, and even more so. China's figures are indeed too large for our comprehension. For instance! Conjointly with other countries, United States capital is interested in the Hankow-Szechuen Railway. The building of that railway has been stopped for lack of capital due to the European war. When that railroad enters the vast plains of Szechuen it will tap a population of 78 millions of frugal, skilful, industrial, law-abiding people—a number exceeding our entire population at the beginning of this century, and greater to-day than the entire population of any other country in the world, excepting India, Russia and the United States—the population of one single Chinese province.

The natives of what may be termed China's hinterland work for a mere fraction of our wages. They have been trained through long generations to live simply and almost entirely from the products of the soil, raised at their doors, by a process of intensive agriculture such as neither Europe nor America has ever seen. These people are inured to lives of toil. Adding to these conditions the high quality of their skill, it is not far-fetched to say that the wise introduction of such a potentiality into the channels of modern commerce, and the coupling it up to modern conditions will work a revolution in which a huge international commerce may be built up—for China copies our wares because she likes them and will one day be a purchaser of colossal dimensions.

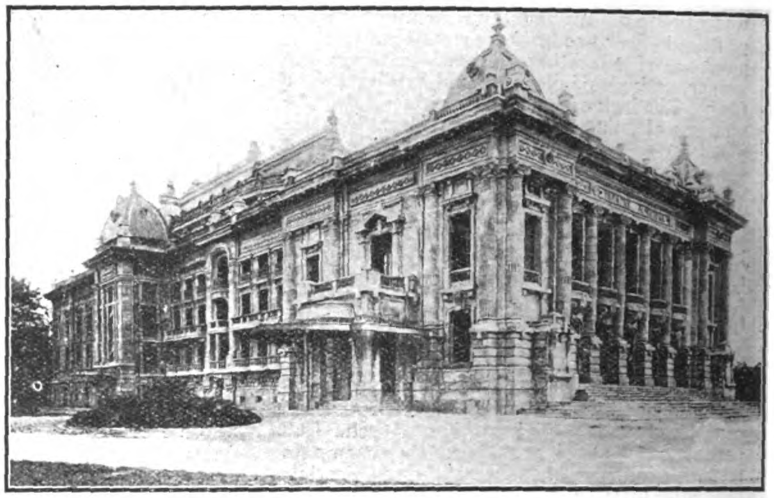
The question to-day is—are we going to take a commanding share in this the greatest business opportunity the world has ever seen—bar none, or shall we leave it to be explained to an indignant posterity how it was that our eyes were so holden that we failed to see it when it was presented to us?

American wealth has grown more rapidly than Europe's because her opportunity came concurrently with the introduction of railways. China's wealth will be greater than either because it has been dammed up so long; and when the sluice-gates are opened with every modern appliance to aid, it will be irresistible.

## CHINA BUYS JAPANESE COTTON YARN

The record shipment of cotton yarn to China was made in March despite the internal trouble in the Republic. In the last ten days of March alone there were shipments of 24,000 bales and total for March amounted to 61,242 bales, the biggest shipments in the annals of Japan's cotton yarn trade with China. The yarn trade has made remarkable progress in recent years, and monthly shipments to China averaged 47,500 bales. The record in the past was 60,200 bales in December last year. Therefore, the internal trouble in China is no more a cause for worry. It is expected that if tranquility is restored in China there will be greater prosperity in this business.

Saigon—Municipal Theatre



Hanoi—Municipal Theatre

# FRENCH INDO-CHINA

[By U. S. Consul Lawrence P. Briggs, Saigon, Cochin China]

The Union of French Indo-China consists of the colony of Cochin China, the protectorates of Cambodia, Laos, Anam, and Tonkin, and the leased territory of Kwang-Chou. Physically and commercially it is divided into three districts:

(1) The Mekong-Vaico-Sagon-Donnai delta and basin include Cochin China, Cambodia Laos, and part of southern Anam. Except the wild, interior, forest and mountain protectorate of Loas, which has few civilized inhabitants and practically no commerce, that is largely an agricultural district. The only other important industry is the fisheries on the coast and in the interior lakes of Cambodia. Rice is by far the principal product and constitutes about 70 per cent of the total value of exports. Other exports, in order of importance, are fish and fish products, hides, leather and cattle, maize, pepper, cotton, and copra. Saigon is the chief port, and ranks second to Rangoon among the rice ports of the world.

Lawrence P. Briggs, American Consul, Saigon

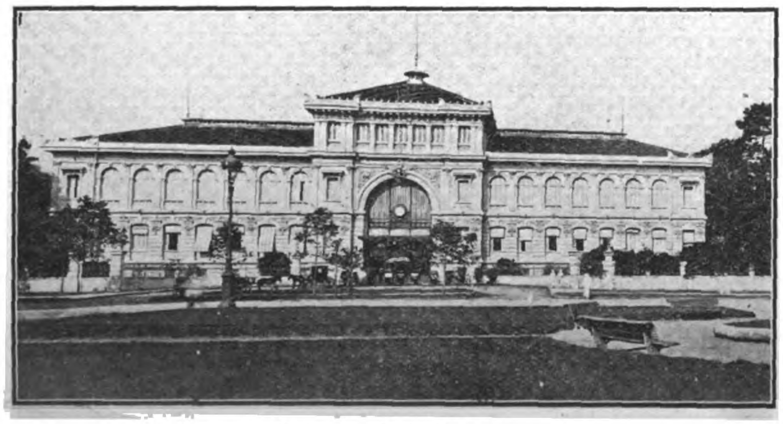
### Delta of Tonkin and Coastal Plain of Anam

(2) The delta and basin of the Rouge (Red) and smaller rivers of Tonkin include Tonkin and northern Anam and furnish the only outlet for the Chinese Province of Yunnan. The delta, flood plains, and coastal plains are agricultural. Rice, maize, anise seed, benzoin, sugar, and cunao are the leading vegetable products. Mining is an important industry in the hills and along the coast. Coal, zinc, and cement-bearing stone are the leading mineral products of Tonkin, while tin is the only product of importance which comes over the Haifong-Yunnan Railway from Yunnan. In recent years Tonkin has become an important manufacturing district. Cotton cloth and thread, silk goods, matches, cement, beer, rice, alcohol, soap, paper, and paper pulp are the principal articles of manufacture. Practically all the commerce of this region, amounting to about 20 per cent of that of all French Indo-China, passes through the port of Haifong.

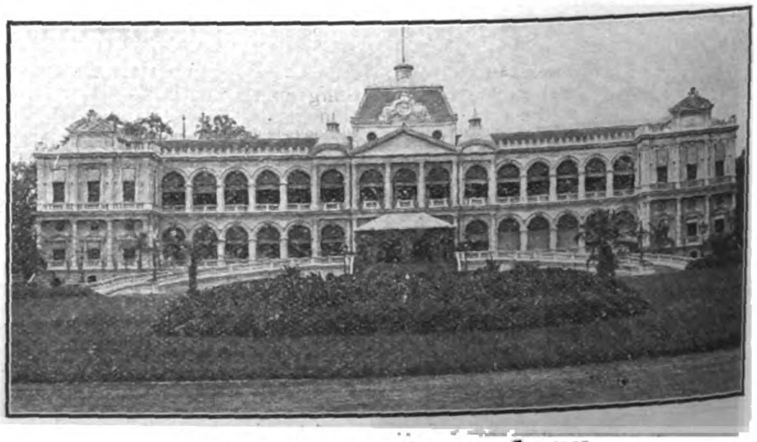
(3) The coastal plain of Anam has its outlet through the chief port, Tourane. The coast fisheries constitute the leading industry, while the interior valleys are regions of diversified agriculture. Cinnamon, sugar cane, rice, maize, hides, tea, and arica nuts are the chief agricultural and forest products. The manufactures include lumber, matches, silk goods, and albumen.

### Transportation Facilities—Tramp Steamers

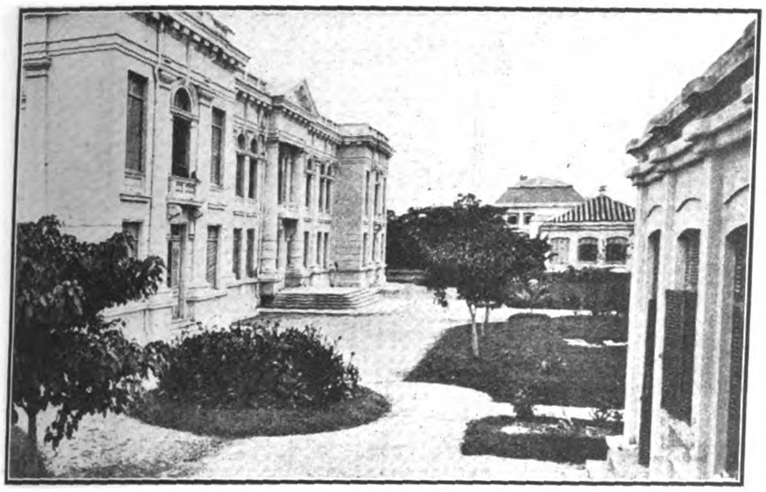
French Indo-China lies along the slight indentation of the coast caused by the Sea of China, and Saigon, its only safe port for large ocean vessels, lies about 50 miles up the river. Consequently these ports are not visited by regular through steamers except those of the two French companies—the Messageries Maritimes and the Chargeurs Reunis. The former company runs bi-weekly passenger, mail, and freight service between Marseilles and Yokohama, calling at Saigon. Intermediate boats of this company connect on alternate weeks with the English mail at Singapore, thus insuring regular weekly mail service with Europe. Intermediate boats also connect Saigon with Tourane, Haifong, and a few other points on the coast of Indo-China and sometimes run to Hongkong.



Saigon—Post Office



Saigon—Palace of Governor General



ANNAM—RESIDENCY AT HUE

TONKING, HANOI—RUE PAUL BERT

The Chargeurs Reunis, running between Dunkirk and Haifong, is mainly a freight line, although its vessels carry passengers and sometimes bring the mail from Singapore and the China coast. The Compagnie de Messageries Fluviales de la Cochin China has regular freight and mail service to Bangkok. Other lines have a more or less regular service between the ports of Indo-China, Singapore, Batavia, Manila, Hongkong, and the ports of China and Japan, although most of the trade of these ports is carried on by tramp steamers.

Tramp steamers sometimes carry rice and other products to Europe, but most of the European trade is carried on by the through steamers of the two French companies or is transshipped at Singapore. Similarly the trade with America and much of that with China and Japan is transshipped at Hongkong.

## No Transportation Between Divisions—Principal Cities

Indo-China has parcel-post connections with nearly all the world's important commercial centers. The commerce between these three natural divisions of French Indo-China is carried on entirely along the coast by the vessels of the Messageries Maritimes Co., by tramp steamers, and by Chinese and native junks. There are railways in each of these divisions, but there are neither railways, wagon roads, nor water routes connecting the divisions with each other. In the interior goods are transshipped mainly by rivers and canals, but also by railways and wagon roads.

The delta regions of Cochin China and Tonkin have extensive systems of natural and artificial waterways. In the Saigon district there are 1,500 miles of natural waterways navigable to ocean steamers and about 4,000 miles more of natural and artificial waterways navigable to river steamers, launches, and

CAMBODIA—TEMPLE OF ANGKOR WAT

junks. Anam has about 1,900 miles of interior waterways, and Tonkin has about 2,500 miles. In addition, all through the delta regions sampans everywhere penetrate arroyos and rivulets up to the fields and doors of the rice grower.

The railways of Indo-China are used mainly for transporting mails, passengers, timber, and produce of the local markets, such as vegetables, poultry, pigs, etc.

The chief cities are: Saigon, capital of Cochin China (population 100,000), and its Chinese suburb, Cholon (population 150,000); Hanoi, capital of Tonkin and chief seat of government of Indo-China (population 150,000), and its port, Haifong (population 30,000); Hue, capital of Anam (population 80,000), and its port, Tourane (population 20,000); and Pnompenh, capital of Cambodia (population 60,000).

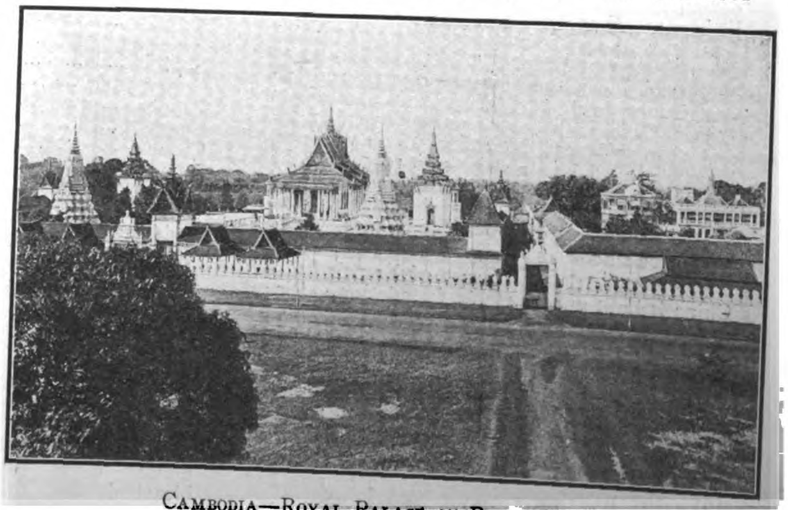
## Chambers of Commerce—Banking Facilities

In the leading industrial centers of Indo-China there exist chambers of commerce and agriculture, which have a semi-official character and publish information on the resources and conditions of the country.

The Chambers of Agriculture of Saigon and Hanoi issue regular publications concerning general agricultural and crop conditions. The Mixed Chambers of Commerce and Agriculture of Anam and Cambodia at Tourane and Pnompenh combine in a minor degree the functions of the two. There is also a local chamber of commerce at Hanoi.

There are three large banking institutions represented in Indo-China, each of which does a general banking business throughout the Far East. The Banque de l'Indochine has branches in Saigon, Hanoi, and Haifong and agencies at Tourane and Pnompenh. The Hongkong-Shanghai Banking Corporation has branches at Saigon and Hanoi and agencies at Haifong and Pnompenh. The Chartered

TONKING—MUSEUM AT HANOI



CAMBODIA—ROYAL PALACE AT PNOM PENH

ANNAM—TIGER HUNTERS AND THEIR QUARRY

CAMBODIA—DANCERS BEFORE THE KING

Bank of India, Australia, and China has a branch at Saigon and an agency at Haifong.

### Commerce of Indo-China for 1914

At the close of the second quarter of 1914 the year gave every promise of being a banner one in the commerce of French Indo-China. Crop conditions were excellent: mines and manufacturing plants were producing above their previous records. Markets were abundant, prices high. This local prosperity promised an excellent market for imported goods. In both imports and exports practically every part of French Indo-China was running ahead of all previous years.

The outbreak of the war during the third quarter temporarily paralyzed the import business and greatly restricted some kinds of exports, particularly the products of the mines and factories. Naturally, Tonkin was the first to feel its effects. Here mines and factories closed and orders for raw material ceased or were canceled. The commerce of this protectorate declined nearly 50 per cent during the third quarter. Cochin China and Cambodia, dependent mainly on rice culture, were able to keep the value of exports nearly up to normal.

The import trade of this region was not seriously affected during the third quarter, because most of the goods entering at Saigon during July and August had been ordered before the war and were on the way from Europe. This is especially true of the goods of the two large German firms which were doing a good share of the import and export business of Saigon.

In spite of the effects of the war, the year closed with the total value of exports amounting to $55,550,498, nearly $500,000 greater than any previous year; and although imports fell nearly $5,000,000 below those of 1913, the total of imports and exports reached $96,225,141, a little more than $4,000,000 below the record figures of the preceding year. Freight rates from Saigon to Europe, quoted on July 17 at 24.5 francs per ton (franc=$0.193), rose to 32.5 francs July 31, 38 francs August 28, 42 francs October 23, 45 francs November 20, and 48 to 53 francs December 31. It was not, however, until late in February, 1915, that the demand for tonnage in Europe so denuded this coast of vessels that freight rates reached the remarkable figure of 100 francs, where they have since remained.

Fortunately the commerce of French Indo-China is built upon a stable foundation. Rice constitutes about 70 per cent of the export of these possessions and can always find a good market in the Orient. This industry furnished a living for the majority of the eighteen or twenty milion inhabitants of French Indo-China and is financed almost entirely by the Chinese. So, with a good market, a record crop in 1914, and a banner crop expected in 1915, the native population should be able to supply their normal wants.

Other food products constitute nearly 20 per cent, while at least 5 per cent consists of articles useful in warfare. At the close of the year, trade was beginning to adjust itself to the new conditions, and the character of the resources of Indo-China insured it against any serious financial collapse.

### Value of Principal Articles of Import and Export

Complete statistics of the commerce of French Indo-China are not yet available, but partial statistics from the different ports show the following comparisons for 1913 and 1914:

| Articles. | 1913 | 1914 |
|---|---|---|
| IMPORTS. | | |
| Cotton goods... ... ... | $7,038,238 | $5,350,000 |
| Jute gunny bags ... ... | 2,140,384 | 3,200,000 |
| Silk goods ... ... ... | 2,485,206 | 2,250,000 |
| Paper and its applications ... ... ... ... | 1,709,251 | 1,700,000 |
| Hardware ... ... ... | 1,724,156 | 1,630,000 |
| Gold leaf... ... ... ... | 1,637,477 | 1,360,000 |
| Opium ... ... ... ... | 250,000 | 1,320,000 |
| Porcelain and pottery... | 1,577,000 | 1,200,000 |
| Arms and ammunition.. | 1,096,968 | 1,160,000 |
| Petroleum and its products ... ... ... ... | 1,205,154 | 1,100,000 |
| Wines and liquors ... | 1,163,752 | 1,000,000 |
| Tobacco and cigars ... | 802,166 | 1,000,000 |
| Machinery ... ... ... | 888,851 | 930,000 |
| Cotton thread and yarn | 589,667 | 900,000 |
| Sugar, candy, and sirup | 1,218,785 | 850,000 |
| Cotton ... ... ... ... | 894,638 | 735,000 |
| Flour... ... ... ... ... | 1,007,546 | 675,000 |
| Arica nuts ... ... ... | 876,394 | 640,000 |
| Tea ... ... ... ... ... | 1,227,348 | 600,000 |
| Woolen goods ... ... | 520,420 | 480,000 |

| Articles. | 1913 | 1914 |
|---|---|---|
| EXPORTS. | | |
| Rice and its derivatives | $34,038,883 | $37,000,000 |
| Fish and fish products | 3,213,039 | 3,225,000 |
| Maize ... ... ... ... | 3,086,603 | 2,400,000 |
| Hides and leather ... | 2,628,953 | 2,100,000 |
| Coal ... ... ... ... | 1,285,035 | 1,340,000 |
| Cotton yarn ... ... ... | 660,854 | 830,000 |
| Pepper ... ... ... ... | 726,146 | 550,000 |
| Copra ... ... ... ... | 323,965 | 490,000 |
| Cement ... ... ... ... | 596,216 | 475,000 |
| Zinc... ... ... ... ... | 657,449 | 465,000 |
| Cotton ... ... ... ... | 862,896 | 400,000 |
| Cinnamon ... ... ... | 288,659 | 390,000 |
| Fodder ... ... ... ... | 100,889 | 340,000 |
| Silk and silk goods ... | 454,766 | 330,000 |
| Live stock ... ... ... | 309,785 | 300,000 |
| Tonkin mats... ... ... | 290,559 | 230,000 |
| Tortoise shell ... ... | 219,765 | 190,000 |
| Caoutchouc ... ... ... | 185,803 | 170,000 |
| Native tea (Anam and Tonkin) ... ... ... | 125,727 | 165,000 |
| Cunao ... ... ... ... | 129,457 | 155,000 |
| Sugar ... ... ... ... | 149,174 | 155,000 |

The imported cotton goods are made up in almost equal proportions of unbleached, bleached, and colored goods. The colored goods are generally black. The Cambodians wear gaudy colors, but the Anamites and Tonkinese cling to pure white or somber black. Over 90 per cent of these goods are French. The falling off in this trade is due to credit restrictions. Silk goods are worn extensively by Chinese and Anamites. About 90 per cent of this class of goods is imported from China by Chinese merchants, consequently this trade has been little affected by the war. Woolen goods are worn mainly by Europeans in Tonkin, but woolen blankets are used in all parts of Indo-China. They have been imported from France.

The importation of gunny bags, gold leaf, and opium vary greatly with conditions. The remarkable increase of jute gunny bags is due to the banner rice crops of 1913 and 1914. These bags come from Calcutta. Gold leaf comes through Hongkong. Opium comes mainly from India.

The trade in paper, porcelain and pottery, and petroleum is usually fairly stable. Most of the imported paper comes from China. It consists of writing paper and envelopes for the use of Chinese and natives, and paper used in the worship of Buddha. The better class of stationery and nearly all paper goods come from France. The bulk of the porcelain and pottery consists of decorated Chinese and Japanese porcelains. The United States and the Dutch East Indies divide the petroleum trade on fairly equal terms.

The gradual development of the resources of Indo-China makes it a promising field for hardware and machinery. In spite of the war the value of the trade fell only slightly below the figures of the previous year, partly due to the fact that the war has not had a serious effect on construction work and partly to the growing market for certain kinds of machinery, particularly agricultural implements.

A high tariff, advantages in freight rates, language, business connections, and methods have hitherto confined most of this trade to France, although during the past year Germany got over 30 per cent of the trade in agricultural implements and general machinery. England furnished about 50 per cent of the wire netting, and more than 50 per cent of the copper goods came through Hongkong. The war has cut off the usual sources of supply of these goods and the market is open. Obvious advantages are giving most of this trade to Japan and the British branch houses at Hongkong and Singapore.

The production of native sugar and tea is being extended in Indo-China to such a degree that those products are supplanting the foreign articles, especially with the natives and the Chinese. The decline in the consumption of those goods is partly due to the fact that the European population diminished nearly 50 per cent during the second half of 1914 and, in the case of sugar, because a great deal of the importation has been in reality a return of the native product from the Hongkong refineries.

# ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

## RAILWAYS

**Ssupingkai - Chengchiatun Railway.**—Japanese journals state that the Chinese authorities have finally consented to construct the Ssupingkai-Chengchiatun Railway in project on exactly the same pattern as the South Manchuria Railway. As a practical warning the Japanese side cited the Kirin-Changchun Railway, which, being radically dissimilar from the S. M. Railway, stands in need of an extravagant outlay for its proposed improvement. Next, the necessity of establishing interlineal connecting service has laid additional stress upon the wisdom of the Japanese contention.

The term of engagement of Mr. Fujine, of the S. M. R. Co., as Chief Engineer of the Ssupingkai-Chengchiatun Railway will be fixed at three years. Out of Y5,000,000 to be advanced by the Yokohama Specie Bank as construction funds, some Y100,000 has already been delivered to the Chinese side. The Chief Accountant of the new Railway is to be recommended by the Yokohama Specie Bank. His appointment will be announced on Mr. Fujine's prospective return from Peking. The construction work will be started soon afterwards.

**Shantung Railway Estimates.**—The estimates of the Shantung Railway for the next fiscal year amount to about Y7,000,000.

The traffic returns of the Shantung Railway for May were unsatisfactory, showing a decrease of S. Y150,000 from the preceding month. The returns for April were exceptionally good and established a new record. The falling-off in the business was sharp. There were days on which the passengers numbered only 2,000 and the goods tonnage 470, bringing in only S. Y5,000 or so. The total receipts for May were S. Y331,347.55 as against S. Y486,275.83 for April. This decrease was due to revolutionary disturbances. On the Shantung Railway the busiest stations are Seitou and Tsinan, the termini of the Line. Weihsien comes next and is followed by Choutsun. Both Weihsien and Choutsun became engulfed in the eddies of the revolutionary activity. At Weihsien, in particular, the goods traffic practically came to a stop. The visitors to that place are, in the major cases, in quest of some individual gain in connection with the revolutionary agitation.

**Japan Discusses Changchun Line.**—The price and some matters in connection with the purchase of a section of the Chinese Eastern Railway, which Japan expects to buy from Russia, were discussed at a recent meeting of the Japanese Cabinet held at the Premier's official residence. It is reported that the disposal to Japan of this section from Changchun to Harbin has been under negotiations between delegates of the two Governments. Japan wants to acquire the line, because Harbin is better suited for the junction of the two railway lines, the South Manchuria and the Chinese Eastern Railways, it is said. After the Cabinet meeting General Oshima, Minister of War, Admiral Kato, Minister of Marine, and Baron Ishii, Minister for Foreign Affairs, remained in conference with the Premier on the China question.

According to a later report negotiations have been concluded for the sale of a section of the Railway and the contract has already been signed between the Japanese Ambassador to Petrograd and the representative of the Russian Government. That part of the railway which Japan gets is from Changchun station up to the Second Sungari Station, a little more than 75 miles, altogether, and the price is put at about 14,000,000 yen. After the transfer to Japan the South Manchuria Railway will manage it, the Nichi-Nichi reports.

The same paper reports that the negotiations between the two Governments over the conclusion of a new agreement are proceeding rapidly and are approaching a successful conclusion. After it has been signed the new agreement will be submitted to the consideration of the members of the Privy Council, but its nature is such that it will not be made public.

**South Manchuria Ry. Accounts.**—At the regular general meeting of the S. M. R. Co. shareholders held on June 17, Baron Y. Nakamura, the Chairman, stated that the property of the Railway Company, as handed over to the Company by the Government, was of an immense value, but was appraised at Y100,000,000. The Chairman further observed that, since the Government did not care to assume the management of the Railway Area, it had devolved upon the Railway Company to take upon itself the task.

The private shareholders made the following suggestions: That the valuation of the Government's shares in the Company be reduced; that the tax on the incomes of the shareholders be reduced; that the restrictions on dividend be abolished; that the Bank of Japan be permitted to accept the shares as security for loans. These suggestions were not acted upon.

The report, which was accepted, showed that the profits for 1915 were 8,080,498 997 yen; the balance from the previous year, 2,560,999.085 yen; making a total of 10,641,498.082 yen.

This was disbursed as follows:

Deposited with the Government as required by law, 404,024.95 yen; dividend for the Government, 2,500,000 yen; dividend for private shareholdes (6 per cent.) 1,560,000 yen; second dividend for private shareholders (2 per cent.), 520,000 yen; special deposits, 2,500,000; rewards to the officials of the Company and social expenses, 300,000 yen; balance left over to next year, 2,857,473.132 yen.

President Nakamura announced that 10 yen on each share of the capital will be raised on October 1 and 10 yen more next spring, making a total of 8,000,000 yen, which will be devoted to meeting a part of the expense of 12,000,000 yen for various improvements this year.

The statement of accounts for the last fiscal year ending March 31, 1916 compared with the preceding year follows:

Profit and Loss Account.

Cr.

| | Fiscal Year 1915 1000 Yen | 1916 1000 Yen |
|---|---|---|
| By Railway Receipts ... | 23,894 | 23,216 |
| „ Steamer „ ... | 1,266 | 1,051 |
| „ Coal „ ... | 12,648 | 14,075 |
| „ Harbour „ ... | 2,292 | 2,290 |
| „ Land „ ... | 1,517 | 1,778 |
| „ Hotel „ ... | 235 | 253 |
| „ Electricity „ ... | 1,160 | 1,101 |
| „ Gas „ ... | 244 | 203 |
| „ Sundry „ ... | 145 | 75 |
| „ Interest Account ... | 380 | 624 |
| Total ... ... ... ... | 43,786 | 44,670 |

Dr.

| | | |
|---|---|---|
| To Railway Expenditure. | 8,174 | 8,345 |
| „ Steamer „ | 1,220 | 1,220 |
| „ Mining „ | 10,640 | 11,858 |
| „ Harbour „ | 1,021 | 1,063 |
| „ Land „ | 2,401 | 2,864 |
| „ Hotel „ | 283 | 309 |
| „ Electricity „ | 723 | 694 |
| „ Gas „ | 134 | 114 |
| „ Sundry Losses ... ... | 695 | 424 |
| „ General Management Expenditure ... ... | 5,174 | 3,088 |
| „ Interest on Debentures | 5,564 | 5,564 |
| „ Writing off Discount on Debentures issue. | 680 | 680 |
| „ Balance for the Term. | 8,080 | 7,541 |
| | 43,786 | 44,670 |
| By Balance brought forward from the preceding Term ... ... | 2,560 | 2,625 |
| „ Balance for the Term | 8,080 | 7,541 |
| | 10,641 | 10,166 |
| Disposed as follows:— | | |
| To Reserve prescribed by Law ... ... ... ... | 404 | 377 |
| „ Dividend on Government shares ... ... | 2,500 | 2,500 |
| „ Dividend to Shareholders, other than the Government, at the rate of 6% per annum... ... ... ... | 1,560 | 1,420 |
| To Supplementary Dividend to Shareholders other than the Government, at the rate of 2% per annum ... ... ... ... | 520 | 473 |
| „ Special Reserve ... | 2,500 | 2,500 |
| „ Bonus to Officers ... | 300 | 300 |
| „ Honorariums for Retired Officers ... ... | | 35 |
| „ Balance carried forward to the next Term | 2,857 | 2,560 |
| | 10,641 | 10,166 |

**Chinese Eastern Railway.**—Japanese press reports are circulated to the effect that the Russian Government will transfer to the Japanese Government the Harbin-Kwanchengtzu section of the Chinese Eastern Railway in payment of the prices of munitions. The intrinsic value of this section cannot be computed on the basis of the actual disbursements for construction alone. Such questions as how the railway connections are to be effected at the interlineal terminus and what will be the bearings of this section on the political and diplomatic relations of both countries must be taken into consideration. This section, about 160 miles in length, is appraised by some experts in the neighbourhood of Y25,000,000, which price, it is reported, will prove satisfactory to both parties. In the event of the transfer materializing, the Government will, in all probability, place this section under the management of the South Manchuria Railway Co.

**Railways in Hokkaido.**—The total length of the railways in Hokkaido will reach 100 miles within this fiscal year, and this remarkable extension of the railway lines is regarded as indicative of the marked developments of commerce and industry achieved in this part of the country. The Hokkaido authorities have decided to celebrate the completion of the

1,000 miles of railways simultaneously with the general meeting of the Imperial Railway Association to be held at Sapporo.

The laying of railway lines eighty miles in length between Mishima on the Tokaido and Atami, noted for its thermal springs, will be commenced this summer. The work will take twelve years to complete and will cost over Y.34,000,000. The chief feature of this line, when completed, will be a tunnel five miles in length—the longest in Japan. The piercing of the mountains for the tunnel is expected to cost Y.800,000 per mile.

**Elevated Road for Tokyo.**—The rough, uneven stretch of track of the electric trains between Yokohama and Tokyo will be converted by March, 1917, into a double-tracked, elevated line which the railway bureau's engineers say will be the best piece of track in Japan. By the side of this track will run a broad sort of boulevard, parked and paved with asphalt. This road, which will be constructed by the Kanagawa Prefectural Government, is expected to be a model roadway, after which roads all over the Empire will be patterned.

This line is being turned into an elevated track because of the danger of running a surface line through a thickly populated district such as lies between Yokohama and Sakuragi-cho. The present line is considered a menace to pedestrians who must cross the tracks and it makes fast time between the two stations impossible. The new track will lessen the time between Tokyo and Yokohama by about five minutes. The construction of the elevated line, with tracks laid and new platforms, will cost about 500,000 yen. This does not include the building of the roadway, which is to be undertaken by the prefectural government, and not the railway authorities.

**New Railway in Chosen.**—The Chosen Light Railway Company, which plans to assist the industrial development of the Chosen provinces on the Sea of Japan by connecting the important towns in those parts with the sea ports, at its first general meeting of shareholders in the Railway Association building, Tokyo, planned to lay a line, 42 miles in length, between Kyongchyu and Taikyu, the first of all the lines included in the company's program, and on the completion of the section, the construction of the main line down to Tonglai, 121 miles in length. In future the main line is to be extended as far north as Antung.

**Hun River Bridge.**—The double-track bridge over the Hun River, the construction of which was taken in hand in 1914, is to be completed in about three years more. The construction of embankments is to be begun in the present fiscal year at the cost of about Y 1,000,000. The appropriation for the current fiscal year is about Y100,000. Tenders are being invited.

**Miyazaki Railway.**—The Miyazaki section of the Kyushu Railway will be open to through traffic in the autumn, probably on October 20, with fitting ceremony, says the Nagasaki Press. Miyazaki is an important town in southeastern Kyushu but the development of the district has been slow compared with that of other parts of Kyushu. The railway is expected to accelerate the progress of the district.

**Shanghai Tramways.**—The following is the traffic return of the Shanghai Tramways (Foreign Settlement) for the six months ended 30th June, 1916, with figures for the corresponding periods last year:—

| | 6 months ended June 30th, 1916 $ | 6 months ended June 30th, 1915 $ |
|---|---|---|
| Gross Receipts | 725,824.17 | 633,328.21 |
| Loss by currency depreciation | 191,019.29 | 168,997.67 |
| Effective Receipts | 534,803 88 | 464,330.54 |
| Percentage of loss by currency depreciation | 27.97 | 28.47 |
| Car Miles run | 1,786,601 | 1,616,469 |
| Passengers carried | 32,131,480 | 27,672,480 |

## SHIPPING

**Naval Dockyard at Woosung.**—Telegrams from Peking state that the scheme for the construction of a naval dockyard at Woosung has been approved. The dockyard at Nanking will be removed and amalgamated with the new one.

**Taikoo Dock Launching.**—The steamer Kamunting, built for the Straits Steamship Co., has been successfully launched from the Taikoo Dockyard. The Kamunting measures 286 feet over all, 41 feet beam, and 21 feet 9 inches moulded depth, and is constructed of Siemens-Martin steel to the owners' scantlings. A double bottom is fitted amidships, and the machinery consists of one set of triple expansion engines, having cylinders of 18"-29"-48" in diameter, with 33 inch stroke. Steam is supplied by two multitubular boilers. The Kamunting is a sister ship to the same company's Kajang launched at Hongkong a month ago. Another vessel for the company will shortly be launched under the name of the s.s. Kapong.

**New Yangtze Steamers.**—The second of two steamers which will navigate the rapids of the upper Yangtze was launched on June 20, from the Sing Fah Yuen Shipbuilding Works, Arsenal Road, Shanghai. The new vessel is the Chi Chuen and a sister ship, the Chu Chuen was launched on March 21. Both vessels are for the Szechuen Railway and Steam Navigation Co., for service on the upper Yangtsze between Ichang and Chungking. The work of constructing the two steamers was in the hands of Messrs. Parker, Reilly & Co., consulting engineers and surveyors.

The full particulars of the steamers are as follows:—Length over all 165 ft., breadth moulded 26 ft., depth 8 ft., draft 5 ft., estimated speed 14 knots per hour. Each steamer has two sets of triple expansion engines, the estimated horse power of each being 780. Steam is supplied by two Roberts water-tube boilers at a pressure of 275 lb. per sq. inch. Forced draft is produced by a Sturtevant fan directly connected to a small steam turbine on the same bed plate. Both ships carry a set of Duplex vertical Worthington feed pumps, one set of Blake and Knowles' air-pumps, a centrifugal pump for circulating water to the condenser, and two Blake and Knowles vertical duplex pumps for service. All pumps are worked independently of the main engines. Accommodation is provided for 40 first class, 120 second class, and 280 third class passengers.

**New M. B. K. Steamer.**—The Mitsui Bussan Kaisha Miikesan Maru, 5,000 tons, was launched from the Moshima branch of the Osaka Iron Works on June 3. She will be used exclusively by the Company as cargo-boat.

**Kiangnan Dock Extended.**—The Kiangnan Dock & Engineering Works now has the largest dock in Shanghai. The old dock has been extended by more than 150ft. so that the new dock's dimensions are: 544ft. length on blocks, 74ft. at entrance, with 19ft. on blocks. Work on the new dock was begun in the middle of February and was finished a few days ago.

**Cunard Liners for Pacific.**—A Japanese steamship company has received information that the Cunard Company has decided to start a new service between Vancouver and Hongkong with the two steamers Royal Edward and Royal George, each of 11,000 tons, which are now engaged in the Atlantic service of the company.

**T. K. K. Buys P. M. Liners.**—The steamers Korea and Siberia, formerly owned by the Pacific Mail Steamship company, have been sold to the Toyo Kisen Kaisha for use in the trans-Pacific service, according to a report in circulation in San Francisco. The Siberia and Korea were owned by the Atlantic Transport Co. and it is reported that the price paid by the Japanese line was Y8,000,000.

**T. K. K. to Increase Capital.**—In connection with the proposed increase of the capital of the T. K. K. there is a difference of opinion between the shareholders and the directors. Mr. Asano, president of the company, who foresees a great prosperity for shipping trade for several years more, earnestly desires to increase the capital by 13,000,000 yen. But some of the shareholders hold more conservative views and favor a smaller increase. They will not object to an increase of half the amount originally proposed by Mr. Asano. An extraordinary meeting of the shareholders of the company will be called.

**Japan's Shipbuilding Subsidies.**—The Japanese Government's shipbuilding subsidies for the current fiscal year total Y3,120,000, of which sum Y47,000 was granted for the s.s. *Uraga Maru*, of the Russo-Japanese Fishery Union, and Y86,000 and Y247,000 were allotted for the Nippon Yusen Kaisha's steamer *Akita Maru* and the s.s. *Manji Maru* of the Hokkaido Colliery Co. respectively. The Government has estimated its shipbuilding subsidies for the next fiscal year at Y4,000,000 for about 180,000 tons.

**Japanese Submarine Arrives.**—The new Japanese submarine No. 14, 600 tons, which had been ordered from the Schneider Dockyard, France, was brought in to Kure on June 12, by Lieut.-Commander Shigeoka.

**Japan's Naval Increase.**—Following the Navy Club memorial service in honor of Admiral Togo's decisive naval victory in the Russo-Japanese War, Lieutenant-Commander Edahara of the Japanese Navy, in an interview, compared the naval strength of Japan to-day with its position at the time of the Russian war.

"At the time of the Russian war the Japanese Navy had six battleships, 86,000 tons in all, eight armored cruisers, 73,000 tons, 12 cruisers, 43,000 tons, four coast defense ships, 20,000 tons, eight other small warships, 14,000 tons, 19 destroyers, 5,800 tons, eight first-class torpedo-boats, and 18 smaller torpedo-boats. Against these, we have to-day two super-dreadnoughts, 72,000 tons, four battle-cruisers, 11,800 tons, eight old battleships, 128,000 tons, 13 armored cruisers, 138,000 tons, 39 other warships, 154,000 tons, 69 destroyers, 37,000 tons, 26 torpedo-boats, 3,300 tons, 18 submarine boats, 5,100 tons. Thus the number of war-vessels has increased in ten years from 83 to 190, that is more than twice as many in number and three times more in tonnage. That is rapid progress indeed. But the strength of a navy is not measured so much by tonnage as by the condition of the ships which may be placed in the line of battle. The Mikasa, 15,000 tons, which was our flag-ship at the time of the Russian war, is now an old ship which cannot 'lie in line.' As for other battleships, of the time of the Russian war, from the Nisshin and Kasuga down there is not one ship which would now be of any

practical use in war. Of all the warships now under commission in the Japanese Navy there are only three super-dreadnoughts and four battle-cruisers, in all seven, which can stand in the line of battle in war. To compare them with the navies of other countries, England has 41 ships which can stand in the first line, Germany 23, France nine, Russia six, Italy five, and Austria four. Japan is therefore behind England, Germany, France and also America (America's strength was not given). While Japan is building three more capital ships, the four nations are building twice or three times as many as Japan. When these facts are known, we cannot but feel uncomfortable if we think of the present and of the future."

**Kawasaki Dockyard Dividend.**—A profit of more than 1,300,000 yen has been made by the Kawasaki Dockyard in Kobe during the last six months. It has been decided informally to declare a dividend of 13 per cent.

**Foreign Shareholders Hamper Dockyard.**—Call for a general meeting of the Yokohama Dock Company has a proposal regarding foreign shareholders. It is planned to pass a revision of the by-laws of the company to prohibit the registration of foreign shareholders. The object of the revision is to eliminate the 62 foreign shareholders of the company which then will extend its business and undertake the work of shipbuilding. At present the company cannot obtain any subsidy from the Government since some shares of the company are in the hands of foreigners. It is the intention, therefore, of the company to prohibit the registration of foreign shares after September 9 and to build ships by receiving a subsidy from the Government. Since the matter is closely connected to the interests of foreign shareholders it is doubtful whether or not they will easily agree to this new proposal. The business of the company was very successful for the first half of this year and a dividend of 13 per cent. will be declared.

This anti-foreign step is the result of the enterprise started by Mr. Asano, president of the Toyo Kisen Kaisha, who proposes to build a dock and shipbuilding yard in Yokohama. The next step will probably be to make some arrangement with the foreign shareholders, whereby the stocks now held by foreigners may be transferred or be held in the names of Japanese acting for foreigners.

**Japanese Ships Increase.**—According to an announcement of the Department of Communications, the total number of Japanese vessels running outside of the regular liners at the end of May was 285 with a total tonnage of 745,280, an increase of six vessels with a tonnage of 14,000 over the previous month. They are divided as follows:

| Lines. | Vessels. | Tonnage. |
|---|---|---|
| Coasting line ... ... ... | 195 | 410,158 |
| European... ... ... ... | 16 | 53,172 |
| American... ... ... ... | 43 | 102,871 |
| South American ... ... | 2 | 7,303 |
| Australian ... ... ... | 5 | 13,575 |
| Indian ... ... ... ... | 13 | 36,592 |
| South Sea ... ... ... | 11 | 30,909 |

**N. Y. K. Starts Line to New York.**—Without any subsidy from the Japanese Government, the Nippon Yusen Kaisha has inaugurated a steamship service between the Orient and New York, by way of the Panama Canal. This service, which is distinct from the N. Y. K.'s round the world service, was opened with the departure of the Tsushima Maru from Kobe June 17. The new service will be a four-weekly service, with six steamers, the Tsushima Maru, the Toyooka Maru, the Wakasa Maru, the Tokiwa Maru, the Tokuyama Maru and the Toba Maru. With the exception of the Wakasa Maru, which is of 6,000 tons, all the rest are of the "T" class, of 7,300 tons each. They are all cargoboats of the latest type, of fifteen knots speed and a total cargo capacity of 75,000 tons. These steamers will call at Hongkong, Manila, Shanghai, Moji or Nagasaki, Kobe, Yokkaichi, Yokohama, San Francisco, Panama, Colon and New York. In the tea season they will touch at Keelung, in Formosa, and Shimidzu. They will touch San Francisco both ways, mainly for coal.

The Yamamoto Cabinet, which preceded the Okuma Ministry, in preparing a new list of subsidies for shipping services, planned to have one of the shipping companies to start a new service via the Panama Canal to New York, with a subsidy of 1,500,000 yen a year, with six steamers of 8,000 tons each, leaving here every four weeks. This Bill of the Yamamoto Cabinet together with the General Budget of that Cabinet failed to pass the Diet. The Okuma Ministry has also endeavored to pass the same subsidy but has not succeeded. The war in Europe has given the Nippon Yusen Kaisha, like all other shipping companies, a rare opportunity to make profits, and the company has now decided to start this service on its own initiative.

**Japan Line May Cut Rates.**—Since the New York Shipping Union raised freights to the almost prohibitive figure of 160 shillings, and at the same time decreased the number of their steamers running to Far Eastern Ports, shipments from Japan to New York have almost ceased. The N.Y.K. is now reported to be planning to lower their rates to 100 shillings. It is reported that the New York Shipping Union has invited the Nippon Yusen Kaisha to join in a firm compact to maintain conference rates but that the Japanese company has refused to join the union unless the company's interests as to tonnage allotments are fully assured.

**Nippon Yusen Kaisha Statement.**—The gross receipts of the N. Y. K. during the half-year ended March 31st was Y29,186,000 and the expenditure Y17,188,000, the balance being Y11,998,000. This balance is to be reduced by reserves of varying amounts, leaving a net profit of Y9,614,231. To this to be added Y946,618, brought forward from the preceding half year, the total sum to be disposed of as undermentioned, being Y10,560,849:—

| | |
|---|---|
| Reserves ... ... ... ... | Y480,710 |
| Bonuses for Directors ... ... | 165,000 |
| Dividend (8 per cent.) ... ... | 1,054,240 |
| Special Div. (2 per cent.) ... | 263,560 |
| Extra Div. (10 per cent.) ... | 1,317,800 |
| Bonuses for officers ... ... | 250,000 |
| Carried forward to next term... | 7,029,537 |

It has been explained that the greater part of the profit was due to the War and it was thought expedient to carry over a large amount to future accounts. Still, the dividends total 20 per cent. per annum.

The N. Y. K. has now 92 vessels with a total tonnage of 430,000, although the Yasaka Maru, 11,900 tons, and the Takata Maru, 7,500 tons, have been lost. The fleet will be increased shortly by the addition of nine new vessels with a total tonnage of 54,800, which will be launched or placed in service this year. The company has now under construction three ships of 7,500 tons each, three of 7,300 tons each, two of 7,400 tons each and one of 30,000 tons. At the end of this year the company will have 101 vessels with a total tonnage of 484,800.

**Suez Tonnage Decreases.**—The annual report of the Suez Canal Company states that the receipts for 1915 decreased by £1,075,725 as compared with 1914. The total net tonnage through the canal decreased by 4,143,340 tons. In 1914 it totalled 19,409,495 net tons.

**Huge Shipping Profits.**—The profits of neutral shipowners may be indicated in the case of the "record" freight of 172s. 6d. a ton which has just been paid for the voyage from the River Plate to French Atlantic ports. It may be assumed that the vessel would carry about 4,000 tons of grain, which at 172s. 6d. a ton would yield a freight of £39,675. The same steamer is understood to have loaded outwards from Great Britain a cargo of coal at 72s. 6d. per ton. Assuming that she carried 4,200 tons of coal, the outward freight would amount to £15,225, giving a total freight for the round voyage of three or four months of £54,900, or perhaps nearly double what the steamer cost to build a few years ago. Since neutral vessels are, as a rule, subject to no excess profits taxation, neutral shipping which is being remunerated on such a scale as this is obviously being put into a much stronger position than British shipping, which, in the first place, earns lower freights, and then is very heavily taxed.

**World's Available Ships.**—The total tonnage of the sea going ships of the world is 33,531,503, but of this amount only 20,797,054 tons, or approximately 62 per cent., are available to-day for the ocean trade of all the nations. Ocean freight rates, now at the highest level in the history of navigation, have withstood the efforts of individuals, organizations and of nations to force them downward. These efforts failed, says the Wall Street Journal, because 88 per cent. of the people of the wealthiest and most densely populated continent of the world are at war and their imperative needs continue to overtax a short supply of ocean tonnage.

## FINANCE

**Only Two American Loans to China.**—In view of the many irresponsible and untrue statements which have appeared in the press concerning supposed American loans, the United States Minister has made public announcement that, with the exception of the following, no such loans have been negotiated by Americans: First: The Lee, Higginson loan of G.$5,000,000 against Treasury notes, at 6 per cent, at 97 and no other specific security, of which G.$2,000,000 has been paid over. Lee, Higginson are the fiscal agents of the Chinese Government in the United States. Second: A loan of G.$6,000,000 for the improvement of the Grand Canal, as a first step in the Huai River Conservancy, which was agreed upon in January, 1914. The proceeds of the loan are to be applied directly and exclusively to engineering work on the Grand Canal, under the supervision of an American corporation, which is now considering the ratification of the loan agreement.

**Mukden Government Loan.**—The loan negotiations between the Board of Finance, Mukden, and the Bank of Chosen which had been broken off for some reason while Gen. Tuanchihkuei was still at Mukden, and which were resumed by Acting Mil.-Commissioner Chang, were brought to a successful conclusion on June 9 on the following terms:—

Loan amount; S Y1,000,000. Net price: S.Y.95. Interest rate: 6.5 per cent. Term of Loan: 2 years. Use: for relief of money market. Securities: management of Electric Light Office and Telephone Office and lease of International Settlement.

It also was agreed that the Bank should be consulted and its counsels should be sought re the smoothing of the Sino-Japanese financial relation and also the readjustment of the specie conversion service of the Chinese Banks. The Electric Light Office and the Telephone Office are appraised at Taels 500,000 and

S.Y150,000 respectively. The International Settlement includes Shihchienfang and the district between Outer West Gate and West Gate, which forms the busiest locality outside the walls, and comprises an area of about 3,000,000 tsubo. A noteworthy item is included in the Loan agreement, by which Japanese gold notes have been made legal tender in which taxes and other payments to the Chinese Government are payable.

**Japan's Bond Redemption.**—The Internal Railway Bond issue of Y38,000,000 has already been paid up to the amount of Y22,000,000 and the remainder was to be paid on the 15th. With the funds thus obtained, the Franc Bonds have been redeemed to an approximate amount of Y.15,000,000 and the remainder amounting to Y23,000,000 will be redeemed in due course.

**Plan Russo-Japanese Bank.**—The Chugai Shogyo reports that in view of the inconveniences arising from the lack of banking facilities between Japan and Russia, and because they cause a delay in the execution of war orders, the Russian Government and bankers have deemed it necessary to organize a Russo-Japanese monetary medium. Views have been exchanged with the Japanese bankers. Now it is reported that a Mr. Junker, a prominent Russian banker, has informally made proposals to the Japanese bankers, through the Russian Ambassador, Mr. Krupensky. Nothing definite is known, but the Chugai says it has reasons to believe that it means the establishment of a Russo-Japanese bank for which both Russians and Japanese may invest capital in equal amounts, that the proposed bank may mainly engage in exchange between Russia and Japan and that the bank may act as an organ for floating of Russian bonds in Japan. Most Tokyo bankers appear to be of opinion that in view of the Russo-Japanese rapprochement, both commercially and financially, some such measure would be quite necessary, though they have not yet decided anything definitely.

**Japan to Release Funds.**—The Japanese Government, with a view to consolidating the financial resources of the Peking Government in support of President Li, according to Japanese reports, has decided to deliver Japan's share of the salt gabelle surplus amounting to Y6,000,000 to the Peking Government in accordance with its request. The Japanese Government is also expected to advise the Peking Government to withdraw the suspension of specie redemption in view of its disastrous effects upon economical circles.

**Philippine Agriculture Loans.**—At a meeting of the directors of the new Philippine National Bank, the agricultural loan question was discussed at length. The attorney general was asked some time ago to render an opinion as to whether the new bank would be required to give precedence to loan applications filed with the old agricultural bank prior to the date upon which its assets and liabilities were formally taken over, and that official has informed the board that such precedence may be accorded in instances where the applicants can show that they have already made contracts for applying such loans to the improvement of their farms or agricultural methods. The bank is determined to push the agricultural loan work as rapidly as possible, and at the close of the directors' meeting President H. Parker Willis announced that Assessor Kalaw of Tayabas had already gone over certain properties in that province and rendered his report on the same. He has left for the field again, and another assessor will begin work along the same lines in Occidental Negros in the course of the next few days. These provinces are not to be specially favored, however, as the work is to be extended to the others just as soon as arrangements can be made to do so.

The first large subscription of stock in the new Philippine National Bank to be announced by its directorate, aside from the subscription of the government, which is provided for by the bank's organic act, is that of the Filipinas Insurance company of this city, which has already purchased shares in the institution amounting to P20,000 par, and has expressed its intention of gradually increasing its subscription to P100,000 in all.

**Japanese City Taxes.**—There has been much grumbling about the taxes imposed in Yokohama of late so the city authorities yesterday issued a comparative statement giving the amounts of taxes paid in several of the larger cities in the Empire. Incidentally, the authorities took occasion to state that the people of Yokohama are far better tax payers than those in most of the other cities. The comparisons show the following average tax rates:

| | Per family. | Per person. |
|---|---|---|
| Kyoto | 18.20 | 3.16 |
| Nagoya | 17.91 | 4.19 |
| Yokohama | 15.04 | 3.12 |
| Kobe | 13.29 | 3.04 |

The amounts of taxes collected in the four leading cities are as follows:

| | Yen. |
|---|---|
| Kyoto | 1,700,018 |
| Nagoya | 1,634,628 |
| Kobe | 1,517,350 |
| Yokohama | 1,339,197 |

The above amounts are collected from additional taxes on land, business, income, exchange, patent medicine, house, buichi and miscellaneous. As to the house tax, Yokohama is the lowest of the four cities with 465,261 yen, 330,000 yen less than Kyoto and 130,000 less than Kobe.

**Philippine Customs Revenue.**—A falling off of P81,410 in the customs collections made at all ports of entry during May, is shown by the statement issued by the insular collector of customs, this being the difference between the decrease in the collections in the ports of Manila and Zamboanga, totalling P88,804, and the increases registered in the ports of Iloilo, Cebu, and Jolo in the amount of P7,394.

Manila alone is responsible for a decrease in the collections amounting to P88,802, the collections last month at this port being P724,350 as compared with P812,852 during the corresponding period in 1915.

**Philippine Internal Revenue.**—Internal revenue collections from all sources during the fiscal year of 1915 were P4,838,284.68 more than during the previous 12 months, according to the annual report of the collector of internal revenue. Of this amount, P4,459,535.52 was collected under the provisions of the emergency internal revenue tax measure passed by the Philippine legislature at the close of 1914.

The total internal revenue collections throughout the islands during 1915, according to the report just issued, were P27,388,395.05, as compared with P22,550,109.37 during the year previous, while the cost of collection fell from P.018 in 1914 to P.015 for each peso turned in to the treasury.

**Philippine Coin Sales.**—Insular Treasurer J. L. Manning has arranged with the British Indian authorities the sale of P7,500,000 in silver coin, at a profit of P915,000, delivery to be made locally in the near future.

The coin which is to be turned over to the British Indian officials is about one-third of the sum which is kept at Corregidor in the form of silver pesos as reserve and to redeem the silver certificates issued by the Philippine government. These coins cost the Philippine government 65 centavos each, but, owing to the present high price of silver bullion, it has now been possible to dispose of them at 77.2 centavos each, a profit of P.122 on each peso, or P915,000 on the entire transaction.

In making arrangements for the sale it was necessary to take precautions to prevent the return to the islands of any of the coins so sold, as it would be a serious matter if the pesos disposed of for 77.2 centavos should again find their way into the country and be circulated at their face value of 100 centavos, and redeemable in gold on that basis. British authorities agreed to guarantee the reduction of the coin to bullion immediately upon its arrival in India, and the melting of the silver will take place in the presence of an authorized representative of the Philippine government.

Another point which has been the subject of considerable comment since the announcement of a contemplated sale of Philippine coin was first made is in connection with the existence of a provision of law to the effect that the exportation of Philippine currency is prohibited. This, it is pointed out, does not extend to the government's own action in the matter, for if it did it would be impossible to export coin to the United States for recoinage, as has always been done in the past.

## PUBLIC WORKS

**Australian Improvement Bill.**—The South Australian Public Purposes Loan Bill, 1915, which provides for a total expenditure of £9,266,500; authorises the following expenditures.

| | |
|---|---|
| Railway rolling stock, locomotives, machinery and appliances for locomotive workshops, accommodation, line alterations ... ... | £1,584,700 |
| Railway construction... ... ... ... | 1,962,000 |
| Deepening and improvement of harbours at Port Adelaide, Port Pirie, and at outports ... ... ... | 272,000 |
| Murray River improvements ... ... | 500,000 |
| Water supply works in districts of Adelaide, Baroota, Country, Beetaloo, Bundaleer, Barossa, Millbrook, Warren, and Pekina Creek | 1,465,007 |
| Drainage works in South-Eastern District ... ... ... ... ... ... | 300,000 |
| Adelaide sewers ... ... ... ... ... | 200,000 |
| Jetties and lighthouses ... ... ... | 42,000 |
| Erection of schoolhouses... ... ... | 140,000 |
| Police barracks ... ... ... ... ... | 22,000 |
| Explosives magazines ... ... ... | 2,000 |
| Produce stores ... ... ... ... ... | 20,000 |
| The Magill Home ... ... ... ... | 62,009 |
| Roads ... ... ... ... ... ... ... | 172,000 |
| Irrigation and reclamation of swamp land ... ... ... ... ... | 300,000 |
| Advances to settlers' and homes' funds ... ... ... ... ... ... | 600,000 |
| Sheds and tanks for settlers ... ... | 25,000 |

## MINES AND METALS

**Japan Gets Anhwei Mine.**—Baron Shibusawa, Baron Okura and several other leading business men of Tokyo met recently to confer upon the establishment of a big iron foundry to work the iron mines at Taochung, in Anhwei, China. These mines are one of the richest sources of iron in the Yangtsze valley, contain more than 60,000,000 tons of ores which are said to contain 65 per cent. of pure iron against the 60 per cent. usually contained in Tayeh ores. The only drawback is the comparative smallness of the deposits, but this is partly set off by the excellence of quality. The Japan-China Industrial Company, of which Mr. Tetsukichi Kurachi is president, recently acquired the rights to work the deposits from the Chinese government. The Japanese business men are to establish a company with a capital of about 50,000,000 yen for the working of the mines. At the first meeting nothing definite was decided upon, but it was agreed that the Japan-China Industrial Company be entrusted to draw up a plan for the establishment of the proposed company.

**Penchihu Colliery Progress.**—Some interesting items regarding the Penchihu Colliery and Mines were given in an address read by Mr. R. Shimaoka, Director-General, on the Company's sixth anniversary:—The agreement to operate the Company under joint Sino-Japanese management was signed May 22nd, 1910. Mining work began on New Year's Day, 1911. In July, 1911, a committee for the investigation of steel manufacture was formed with Dr. Oshina and Mr. Hattori of the Government Steel Works, Edamitsu, on the Japanese side, and Mr. Wu Hsiang-tsao, of the Kailan Mining Administration, and Mr. Yen En-yu, a graduate of the Imperial University, Kyoto, on the Chinese side. The committee reported favourably on the new venture and as a result the first blast furnace was blown in on New Year's Day, 1915. The daily output of the smeltery passed 150 tons in April last and was increased later to 180 tons. Among the direct influences of the great European War, the imperative necessity of placing the steel manufacturing industry on a self-supplying basis has been brought home to the Japanese most forcibly. The outputs of the Penchihu Company compare favourably with Bengal and other best Indian products. They are peers of pig iron imported from Sweden, etc., and are available as being of a specially fine quality for the manufacture of munitions. A new smeltery is in course of construction which will entail the operation of sundry chemical industries auxiliary to the manufacture of steel.

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**Mining in Korea.**—It is evident that the mining industry in Korea is attracting a great deal of attention by capitalists and business-men, says the "Seoul Press." This may be inferred from the fact that a great many applications for permission to work new mines continue to be received by the Government-General. According to an official report the total number of such applications received during April was 774. During the preceding month as many as 843 applications were received. This was a record. It is accounted for by the enforcement of the new mining regulations, by virtue of which many applied for working tungsten mines. It is stated that the total amount of minerals gathered in Korea during last year is roughly Y.10,500,000, showing an increase of about Y.2,000,000 as against the preceding year. The figures are subject to slight alteration as some reports still remain to be received by the Government. As usual gold contributed the greatest amount, being valued at Y.7,501,458. Besides this, gold ore to the value of Y.699,294 was obtained.

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**Japan's Arsenal Metal Purchase.**—On May 25 the Osaka Military Arsenal invited tenders for the supply of 5,000,000 kilos of lead and 1,000,000 kilos of electrolytic copper. The order for 2,500,000 kilos of lead was secured by the Naigai Bussan Gomei Kaisha at sen 36.67 per kilo and that for the remaining 2,500,000 kilos by the Mitsu Bussan Kaisha at sen 36.89 per kilo. Mr. Amano Risaburo, of Osaka, booked the order for 1,000,000 kilos of electrolytic copper at Y.12,938. All these prices were two or three yen lower than market quotations.

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**Japanese Expand Arsenals.**—The capital of the military arsenals both in Tokyo and Osaka has been increased this year from 3,500,000 yen to 4,000,000 yen each, but this total is still believed to be too small because of the enlarged scope of work at each arsenal. The army authorities are contemplating to increase each arsenal to 7,000,000 yen in the next three years. It is expected that the Cabinet will approve the plan.

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**Japan's Sulphur Output.**—The output of sulphur in Japan has recently made a remarkable increase. According to the latest report of the Department of Agriculture and Commerce, the output in April reached 2,667,031 kin, (kin 1.33 lbs) showing an increase of 50.8 per cent. compared with the output in the corresponding month last year. The output for the first four months of this year showed an increase of 45.3 per cent, compared with the corresponding period of last year. The participation in the war of Italy must have curtailed the output of sulphur. Moreover, there has arisen a new demand for Japanese sulphur for war use in Russia, and this has caused the increase in the exports. The exports of sulphur last year and the year before, classified according to destinations were:

| | 1914 kin | 1915 kin |
|---|---|---|
| To U. S. | 31,455,964 | 45,854,682 |
| „ Australia | 49,466,055 | 47,896,478 |
| „ Canada | 3,005,548 | 8,759,196 |
| „ Russia | 555,511 | 8,935,771 |
| „ India | 1,595,930 | 7,956,670 |

Thus it will be seen that the figures show a remarkable increase in all directions. It is natural that the price should have risen considerably. The highest mark reached early in the spring was 150 yen.

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**Japan and Chinese Cash.**—The purchase by Japanese of Chinese cash has caused considerable friction between the Japanese in Shantung and the Chinese officials who have tried in every way to stop this rather strange line of business. According to the Japanese, from May, 1915, up to last March, altogether 18,652 tons of copper cash arrived at Tsingtau from the interior of Shantung. During April the arrivals amounted to about 5,000 tons, and for the first half of May something like 2,000 tons is recorded, making the grand total about 25,600 tons. Figuring the price at the rate of Y400 per ton, the whole of the business was worth more than Y10,000,000. The profit derived by buyers in the interior is estimated at between Y2 and Y2.50 per 100 kin (kin = 1.33 lbs), that for the middlemen along the Shantung Railway 50 sen to Y1 per 100 kin, for those who melt down the copper cash, a profit f 30 sen per 100 kin, and for the exporters from Y1 to Y2 per 100 kin. The average profit for all the people engaged in this business may be put at Y5 per 100 kin. The aggregate profit on the 25,600 tons exported is figured at about Y2,167,000. The profit cleared by the refiners of the cash at Osaka, Kobe, Okayama, etc., is about Y6 per 100 kin. According to the Osaka market quotation, they give about Y33 per 100 kin for the import metal and obtain therefrom 56 kin of crude copper, 25 kin of zinc, and a quantity of lead, etc. Thus the Japanese refiners realized about Y2,000,000 on the above-mentioned imports from May, 1915, till the middle of last May. The crude copper then passes into the hands of the large copper plants like the Sumitomos, Furukawas, Mitsubishis, Mitsuis, and Kuharas, which maintain equipments for refining copper by electrical appliances. Out of the crude copper is obtained pure copper worth Y90 per 100 kin.

It will thus be seen that, on the copper cash exported to Japan to the amount of about Y10,000,000 in the year above referred to, about the same amount of profit was netted by the dealers, exporters, refiners, etc., all combined. The above gives only the export statistics for the port of Seitou. Adding thereto what was exported from the Yangtsekiang Valley, Tientsin, etc., to Japan since last Summer, the grand total is thought to reach 45,000 tons, worth about Y18,000,000. A rough calculation of the stocks of copper cash in Shantung alone may be made on the basis of per capital holding of 5 tiaos or strings of 1,000 (about Y1.80). There being supposedly a population of 60,000,000 in the whole of the Province, the total holdings are estimated at 300,000,000 tiaos weighing 840,000,000 kin or nearly 500,000 tons. With a chance of 100 per cent profit, the anxiety of the Japanese melters can be estimated.

**Japan's Copper Production.**—The yield of copper in Japan is increasing under the influences of the war trade, but no accurate estimate of the increase this year is yet forthcoming. Even those in the trade are totally in the dark in this respect, though they state that there has been a strikingly large advance in production. A comparatively trustworthy report says that the total yield, including remelted goods, might have risen to 50,000 tons at the end of June. This is an increase by 7,000 tons, even in comparison with the latter half of last year when the yield was reported to have been enormously increased. Therefore, the comparison with the first half of last year further swells the advance to over 10,000 tons or 25 per cent.

During the first half of this year the consumption at home has been heavily increased. Since the beginning of the year the metal has been consumed at the rate of 5,000 tons a month, thus threatening to bring up the total of consumption to over 30,000 tons by July 1. This is an advance of 15,000 tons over the preceding half year.

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**Liaotung Clay for Japan.**—A good grade of fire clay which occurs in abundance in the Kwantung Leased Territory forms an indispensable material required at the steel works of Japan. It is exported to Japan to the amount of about 10,000 tons a year. The s.s. *Yegesan Maru*, recently put into Dairen to ship a full load of clay from Pulantien for the Government Steel Works, Edamitsu.

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## POPULATION AND IMMIGRATION

**Japan Fifth in Population.**—The Statistical Bureau has just announced the population of Japan at the end of 1913, the figures for Japan proper being 52,356,295, and 15,169,923 additional for Chosen, 3,266,169 for Formosa and 1,691 for Saghalien. This makes the entire population of Japan 71,793,078. On the rough estimate of the world's population at 1,440,000,000, Japan has a little over 4.0 per cent. In population, Japan proper ranks fifth among the great countries of the world, China coming first, Russia, the United States of America and Germany next in order.

The increase of population in Japan proper is very rapid, the average in the five years previous to 1913 being 1.5 per cent. a year. This is a more rapid increase than in any of the European Powers. The density of population is great, coming next to Belgium, the Netherlands and England. The population in Japan is 2,334 per square *ri* (2½ miles.) As to the proportion of sexes there are 102.14 males for every 100 females. Quite recently there has been a tendency for the male population to increase more rapidly than that of the females, due to the greater death-rate of young females. Only 43 per cent are married and the percentage unmarried is growing. This is because of poverty and late marriages.

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**Japanese Emigrate to Brazil.**—Japan sent about 150 Japanese emigrants to Brazil to engage in agricultural pursuits three years ago. Most of these emigrants have settled in that country and are now prospering to a certain extent. Three Japanese emigration companies, the Morioka Emigration Company, the Oriental Emigration Company and the South American Emigration Company, are co-operating to take 150 more Japanese families to Brazil. They will start from Japan by the Nippon Yusen Kaisha steamer Wakasa Maru early in August. If the plan is carried out satisfactorily, another large contingent of Japanese emigrants will be sent to Brazil again this year.

**Japan's Emigrant Toll.**—According to the investigation of the Department of Communications, the number of Japanese laborers in foreign lands is 227,241. Their classification is as follows:

| | |
|---|---|
| Asiatic countries .. .. .. .. | 12,611 |
| Australia and Philippines .. .. .. | 111,038 |
| American continents .. .. .. | 102,385 |
| European countries .. .. .. | 1,217 |
| Total .. .. .. .. .. .. .. .. | 227,241 |

These laborers have contributed to the economy of the country in many ways, but the Department of Communications is concerned in only one respect, that is, how much money these laborers have sent home. The following is the list showing the number of money orders received and their amounts in the last few years:

| | No of orders | Amount |
|---|---|---|
| 1912 .. .. .. | 226,000 | Y 16,840,000 |
| 1913 .. .. .. | 219,000 | 17,030,000 |
| 1914 .. .. .. | 206,000 | 15,730,000 |
| 1915 .. .. .. | 216,000 | 14,500,000 |

In 1914 and 1915 there was a decreasing tendancy, and this was probably due to the fact that their position was affected, owing to the war. The average remittance was 64.26 yen in 1915, and the remittances were made mainly by means of postal money orders, or through the Yokohama Specie Bank.

## RIVERS, HARBOURS AND IRRIGATION

**Whangpoo Dredging Plant.**—The plans of the Whangpoo Conservancy Board for the operation of its own dredging plant on the Whangpoo are now nearing realization. The board's new stationary bucket-dredger Hai Lung, built at the Osaka Iron Works, has been received and the floating pumping installation for the pumping ashore of dredged material from barges, is now nearing completion in Japan and will arrive in the middle of July.

The first part of the transport fleet consisting of two tow-boats, the Li Hua, of 100 foot length and 400 I.H.P., and the Li Mao, of 84 foot length and 250 I.H.P., have been built by the Kiangnan Dock and Engineering Works to Lloyds' highest class, 100 A. 1. These two vessels had their first official trials at the Seven Mile Reach in the presence of Mr. H. von Heidenstam, the Board's Engineer-in-Chief and Mr. H. L. Fletcher, Lloyds' Surveyor, and both vessels were found to exceed the contracted speed and power. Three hopper-barges, each of 320 cubic yards capacity, now being built at the Kiangnan Dock, soon will also be ready for delivery. By the beginning of August, the entire dredging plant is expected to be in operation.

**Yokohama Pier Work.**—The work of reconstructing the old pier in Yokohama harbor has made rapid progress and it will be in service from November. The first shed, a two story building, 60 feet by 300 feet, was completed in June and a second one started. The entire work on the reconstruction of the pier will be completed at the end of March next. The upper storys of these sheds are for the accommodation of passengers, and the lower floors for the storage of baggage and cargo. The sheds will also be provided with buffets where refreshments will be served. The work was begun in 1912 with an appropriation of 1,200,000 yen. The old pier designed by Major Palmer, was 1,500 feet long and 62½ feet wide. The new dimensions will be 1,800 feet long and 138 feet wide. The depth alongside was 26 feet at low tide and this has been dredged to 35 feet, sufficient to float any steamer now engaged in the Pacific passenger trade. From November two steamers, one at either side, will be able to berth at the pier and after March four steamers of the largest tonnage can be moored alongside the pier, two on either side at the same time.

The Yokohama harbor covers an area of 1,500,000 tsubo and in the shallowest place is 20 feet deep. Along the sides of the new pier will be the deepest places in the harbor, here it will be 35 feet deep in ebb tide and 40 feet in flood tide. The Department of Finance has been dredging the harbor since 1891, appropriating a sum of 170,000 yen annually. Two dredgers have been used and the preliminary dredging work was completed in 1914. The piles of the old pier were of iron, but those of the new one are reinforced concrete cylinders and steel piles, although wood is to be retained for the original width of 62½ feet. Hereafter motor-cars, carriages and jinrikshas can drive freely over the surface.

**Japan Opposes Liao River Works.**—During the past two or three months the affairs of the Liao River Conservancy have been the cause of much heart-burning to those immediately concerned. The friction has arisen through the strong objection by the interested Japanese to the scheme of the engineer-in-charge, Mr. Hughes. The circumstances are as follows:—

The Liao River Conservancy has its offices at Newchwang and the Board consists of the Commissioner of Customs, the engineer-in-charge, one Chinese and one Japanese. The general committee consists of the foregoing and the resident Consuls, including the French and American Consuls at Mukden. The works on the upper river are estimated to cost about Tls. 3,000,000, the money for which has to be provided by the Chinese Government. The funds for the lower river works, where the foreign interests are centred, are provided for by a special tax on shipping, which is collected by the Customs.

Sir John Wolfe Barry, the eminent English authority on hydraulic engineering, recommended extensive straightening, bunding and training works preparatory to dredging and, as the effect of this scheme will be to reduce the areas to be dredged to about one mile, the engineer-in-chief, Mr. Hughes, has adopted it. This did not suit the Japanese. They wish to have the dredging of the lower river gone on with first, and what is more, they want the South Manchurian Railway Company to have the contract without opposition. This scheme would permit of larger steamers coming into port, but as the cargo to be carried by such steamers would have to be hauled mainly over Japanese railways, it will be seen that considerable advantage would accrue from rail freights. British, American and European interests are more concerned in having the upper river scheme pushed on with, so as to permit the revival of the old junk trade, which would allow cargo to come to Newchwang independently of the Japanese railway. As this is diametrically opposed to Japanese interests, they are leaving no stone unturned to prevent the upper works from being gone on with.

It is openly stated that the Consuls received some hints from their respective Ministers regarding the advisability of not standing too much in the way of Japan's wishes in this matter, which has given rise to the statement freely made that Japan's share in the war has been used as an argument why her nationals should have a preferential right to consideration at the hands of those with whom the decision rested.

Matters stood much in the above position in the early part of March, when finding that Mr. Hughes was not disposed to recede from his resolution to go on with the bunding and training, certain means of a very questionable nature are said to have been used to persuade him, but still in vain. Subsequently a notice was issued calling a meeting of the Liao River Conservancy Board to sanction the engineer's plans and go on with the training and bunding work. All of the foreign Consuls as Consuls are members of the board representing the interests of their nationals.

To counteract this and prevent sanction being given to the engineer's plans, the Japanese Consul called a meeting of the Consular Body, being the Consuls in quite a different capacity. The argument upon which he made his points at this meeting was based upon the fact that the word "dredging" stood first in the agreement. Therefore no other work than dredging should be undertaken. Notwithstanding the obliquity of this view the Consuls, bearing in mind the hints from Peking above alluded to, adopted it. But on leaving the meeting the British Consul received despatches from his Minister which permitted him to take an entirely different view of the situation. What really happened I have not been able to ascertain, but it is evident that sufficient had been said to the British Consul to warrant him in the steps taken subsequently. For upon receipt of this letter he at once wrote withdrawing the vote he had given at the meeting of the Consular Body and further commenting on the whole situation. This letter is on file at all the Consulates, and copies are in the possession of people connected with the board. Upon receipt of this letter, the Japanese Consul was much perturbed and protested that a vote could not be cancelled.

After this came the formal calling of a meeting of the Conservancy Board, of which the Consuls in another capacity are members. The Consuls are said not to have attended on the grounds that this meeting was being called for the purpose of giving effect to a plan to which their Consular Body Meeting had recorded opposition.

Those attending were the representative of the Chinese Government, the representative of the commercial interests, the Commissioner of Customs, the British and the Japanese Consuls. The meeting voted for the sanction of the engineer's plans and the starting of the work in accordance therewith, and in the absence of any provision for a regular quorum the vote was duly carried. The Japanese and British Consuls then left for Peking to report to their Ministers.

Nothing definite appears to be known as to the result of that meeting. But it may be taken as an augury favourable to international shipping interests to learn that the preliminary work for closing the West Channel, which is one of the main features of the plans of the engineer-in-Chief, is now in operation.

A great deal of water escapes to the sea by the West Channel at a point some distance above the bar. This channel is very wide and a dam will be built across it to force the water into the main channel and so exert a scouring influence on the bar. The rock for the dam is being brought from Haiping.

**Pasig River Quay.**—The Secretary of Commerce and Police of the Philippines has authorized the Bureau of Public Works to undertake the construction of the Pasig river quay. The P75,000 allotted for this project was originally intended to construct 220 meters of quay extending from the Roxas bridge to Calle Soda. The bureau now estimates that an additional 60 meters of quay may be constructed with the funds available and that it can be prolonged from Calle Soda in the direction of the Bridge of Spain, should the abutting property owners cede the required right-of-way. The quay will give a total street width of 40 feet between harbor and building lines. Of this width 14 feet will be a reinforced concrete deck of the slab and girder type carrying traffic over a 1½ riprapped slope. This deck is carried over concrete piers approximately 8 feet on center with open facia arches on the harbor line and a concrete retaining slab along the interior face with a 1½ to 1 riprap slope extending to the intersection of the river bed. This will enable river craft with a 10-foot draft to anchor alongside the quay at mean low water. It is estimated that 180 days will be required for the work.

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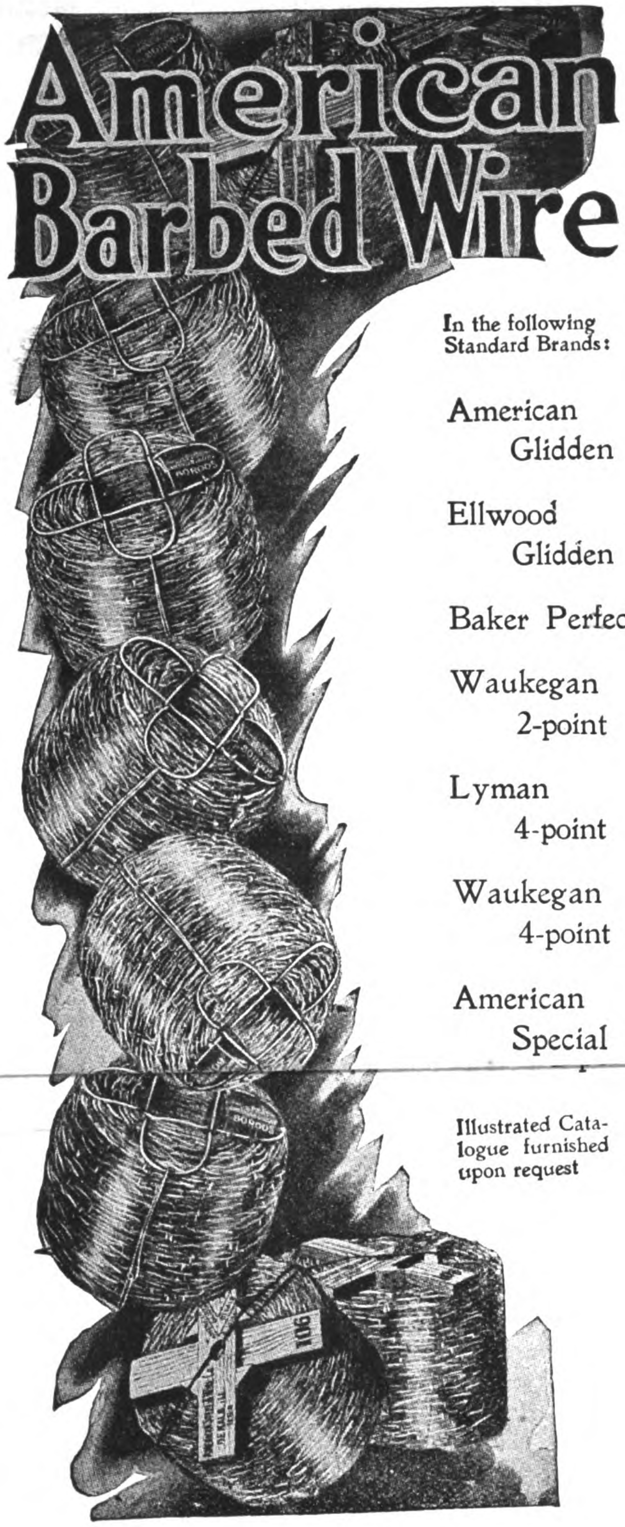


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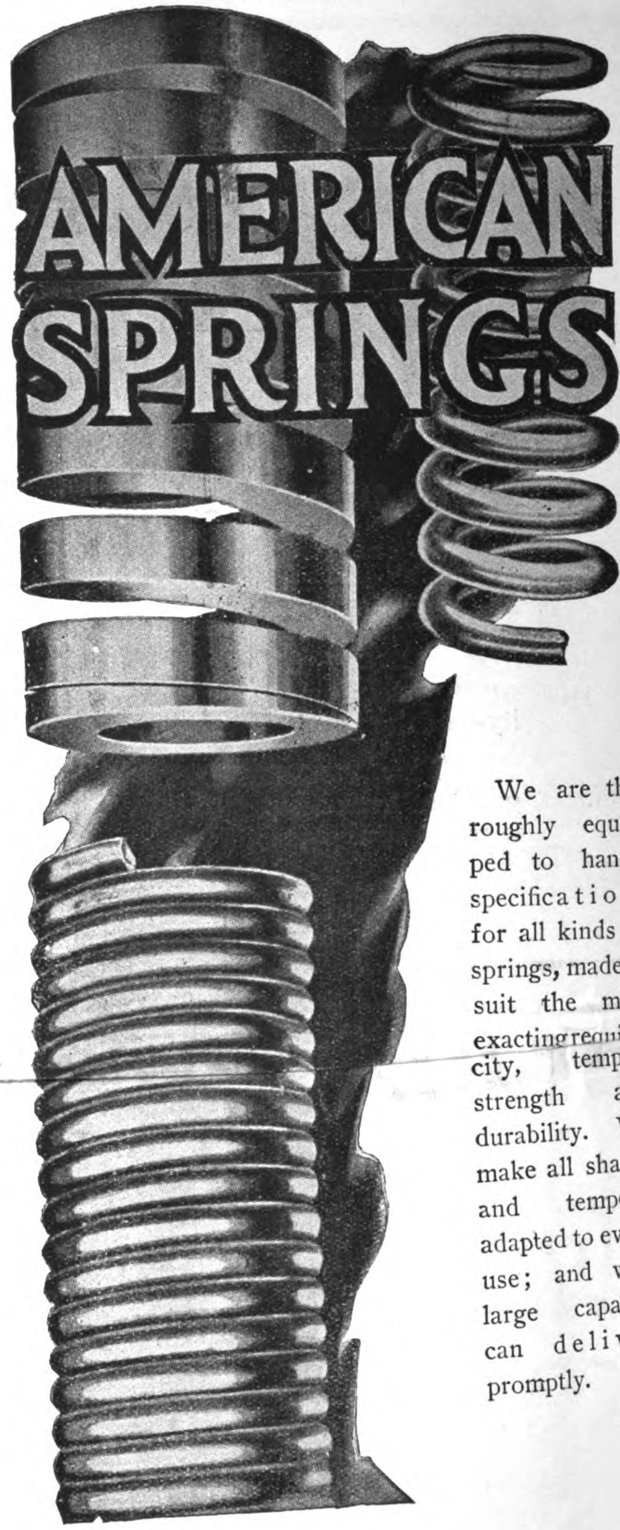


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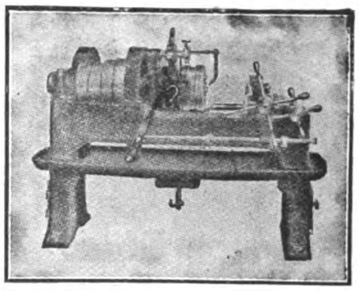
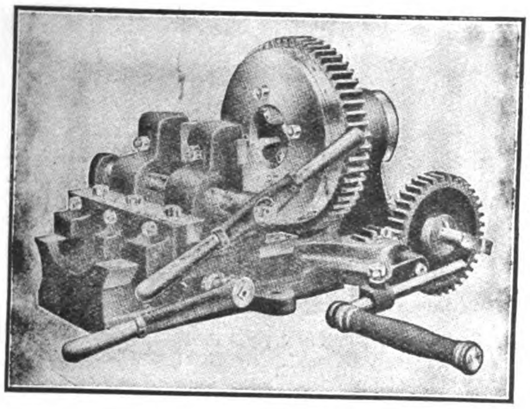
# United States Steel Products Co.

**4 THE BUND, SHANGHAI** **Telegraphic Address: "STEELYARD" SHANGHAI**

# Modern Screwing Machines



The illustration opposite shows our 2 in. size Single Head Patent Automatic Screwing Machine, which is one of a complete line of Single and Multiple Head Bolt Screwing Machines embodying the very latest labour-saving features and devices. It has Hand and Automatic Releasing Motion to the Die Head, Automatic Closing Device, Die Adjustment whilst in motion, etc. We claim that the Patent Steel Die Head these machines are fitted with is the most solid, simplest and best Releasing Die Head on the market. The Dies are operated mechanically. Springs with their attendant troubles, or other delicate mechanisms, do not enter into the construction in any way.



The illustration below shows our improved Universal Screwing Machine, which will screw Pipes, Bends and Short pieces up to 2 in. diameter, and Bolts when required up to 1½ in. diameter. This type of machine is also made for working by Power as well as by Hand, and in several larger sizes for dealing with Pipes up to 8 in. diameter. Of the 2 in. size illustrated we have during the last few years supplied over 2,500 machines, amongst which are many repeat orders.

*We will mail you a copy of our illustrated and descriptive Catalogue on request.*

**Joshua Heap & Co., Ltd.,**

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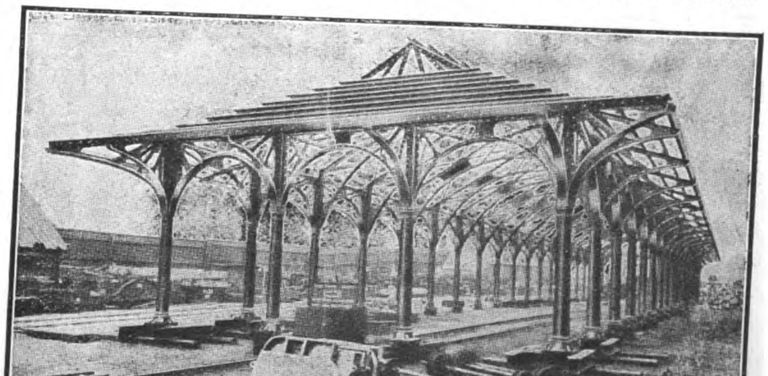

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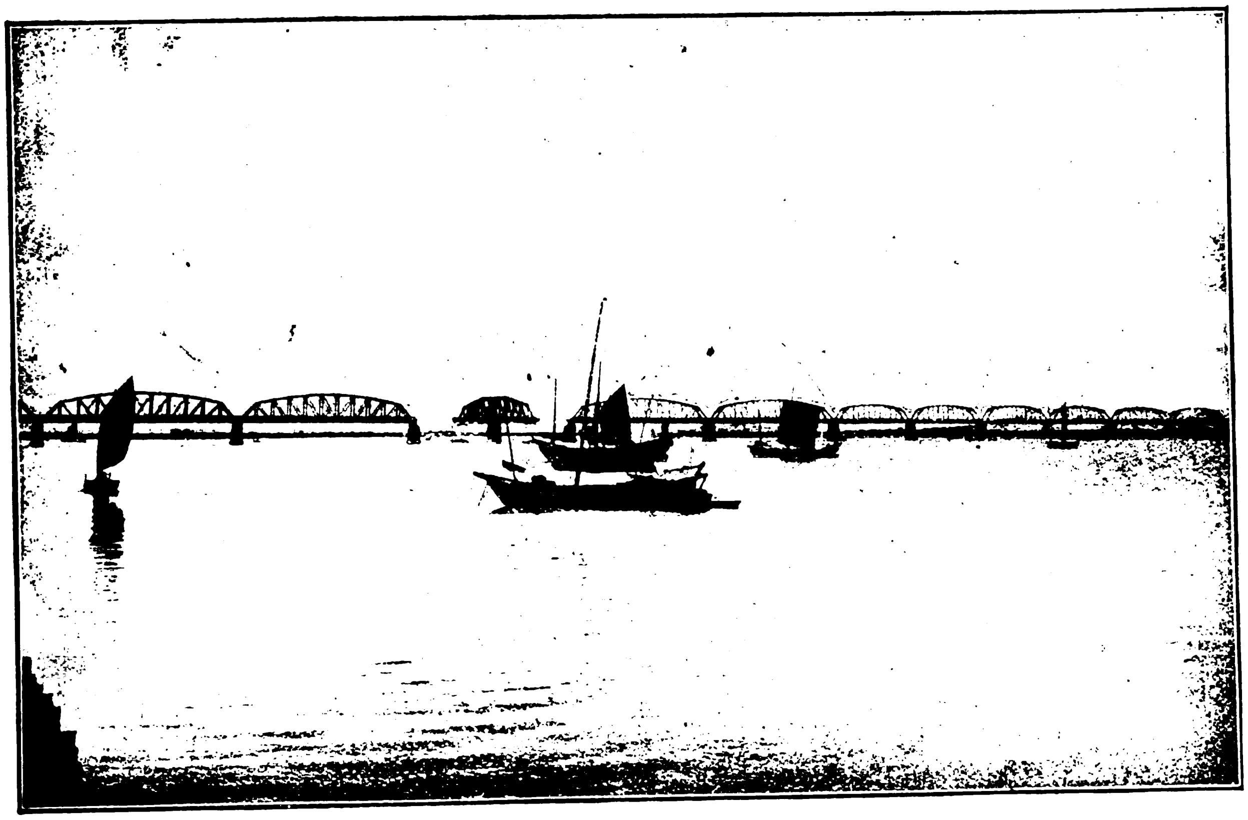

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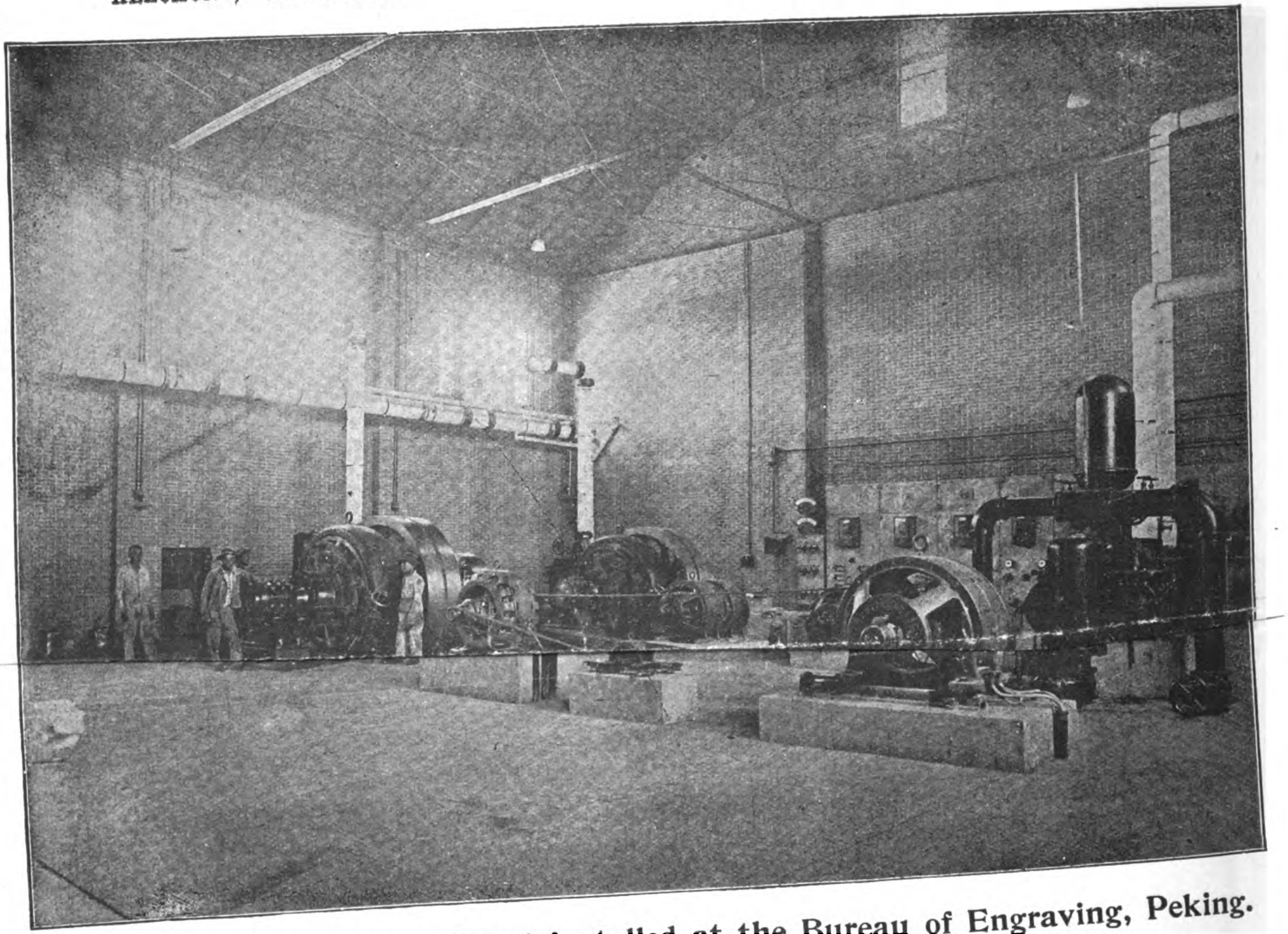

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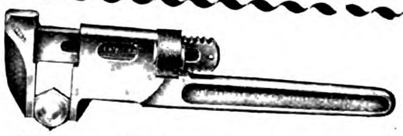

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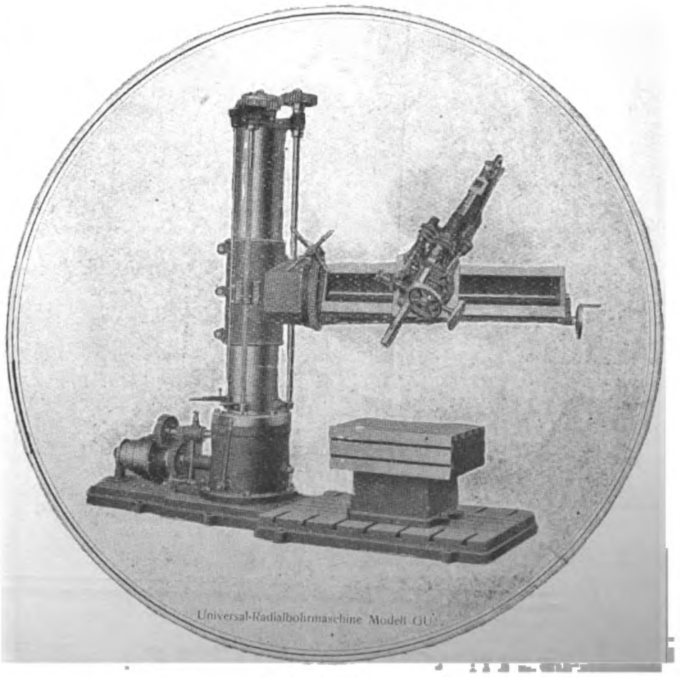

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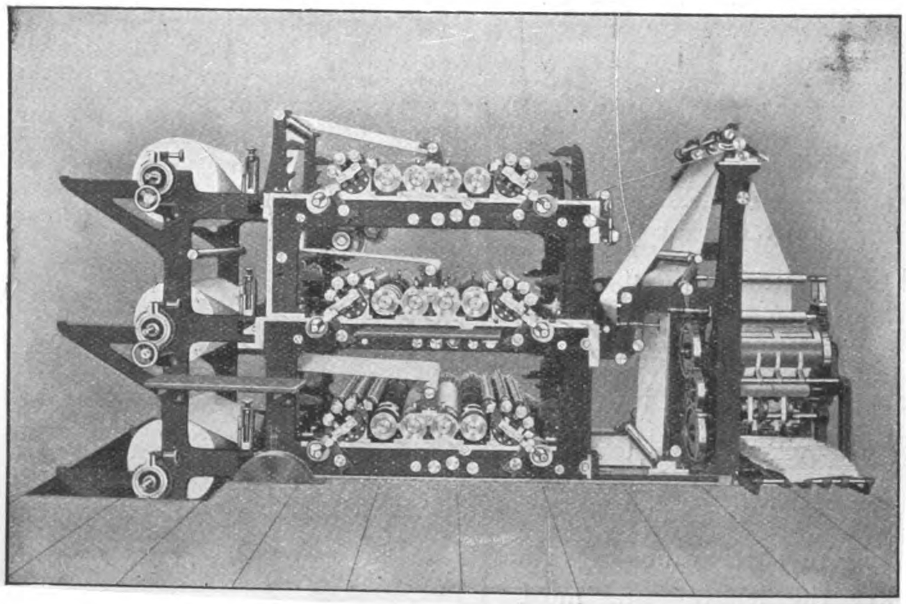

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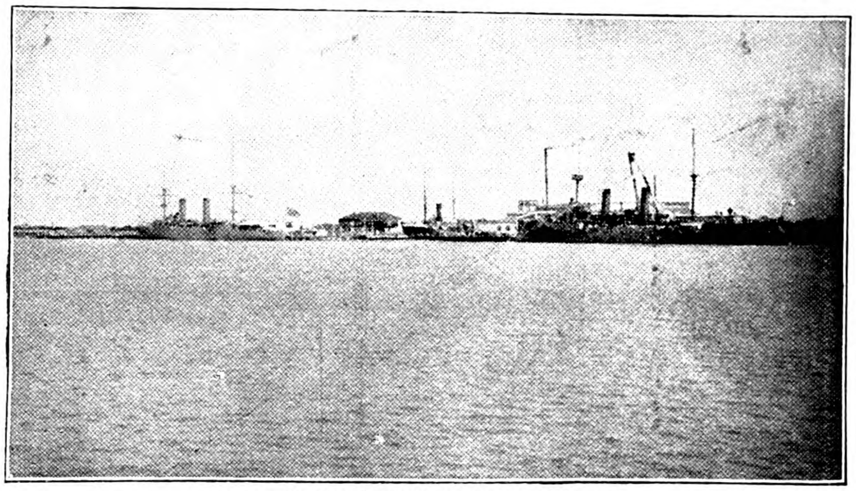

VIEW OF INTERNATIONAL DOCK
showing "M. S. Dollar" in Dock and the Chinese Cruisers "Hai Chi" and "Hai Yung" alongside Dock Co's. Wharf.

## Boilermakers, Dock Proprietors, Shipbuilders, Engineers and Electricians

**FIFTEEN REVENUE CRUISERS BUILT FOR THE QUARTERMASTER'S DEPARTMENT U. S. ARMY—MANILA, P. I.**

**The Model was exhibited at St. Louis Exposition and awarded the Gold Medal in 1904**

**The Sea-going Salvage-vessel "General Weeks" 148 feet long Built for the same Department, in 1910**

**Low Pressure Hot Water and Steam Heating Installations**

The Docks are five in number, ranging in length from 355 feet to 532 feet on the Blocks, and breadth of entrance from 53 feet to 77 feet, with a depth of water on the sill of from 16 feet to 24 feet.

The Dock charges are the most moderate in the Far East

The Company's Yards and Docks cover 96 acres. The Water Frontage is about 1½ miles in length. Wharves and Pontoons are arranged where steamers can moor during repairs; and slips for hauling up small vessels are provided. Sheer legs capable of lifting 65 tons are placed at the various Docks.

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U. S. ARMY TRANSPORT "MERRITT" 300′ 0″ × 45′ 0″ × 28′ 3″
Built for United States Government in 1912.

**PARTICULARS OF DOCKS**

Able to accommodate any vessel that can reach Shanghai

| Names | Length on Blocks | High Water | |
|---|---|---|---|
| | | Breadth of Entrance | Depth of water on Sill |
| Cosmopolitan Dock | 532 feet | 77 feet | 24 feet |
| International Dock | 528 " | 77 " | 23 " |
| New Dock . . . | 450 " | 74 " | 21 " |
| Old Dock . . . | 390 " | 53 " | 16 " |
| Tunkadoo Dock . | 350 " | 67 " | 16 " |

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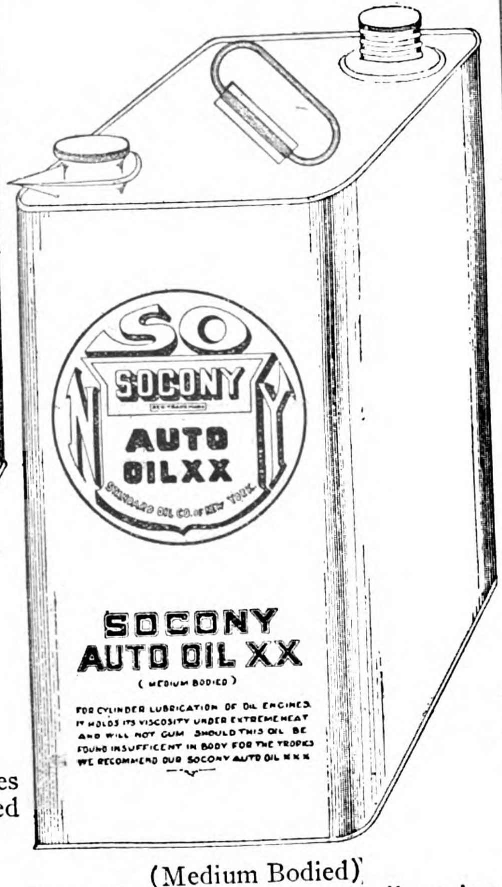


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For cylinder lubrication of oil engines. It holds its viscosity under extreme heat and will not gum. Should this oil be found insufficient in body for the tropics we recommend our Socony Auto Oil XXX.

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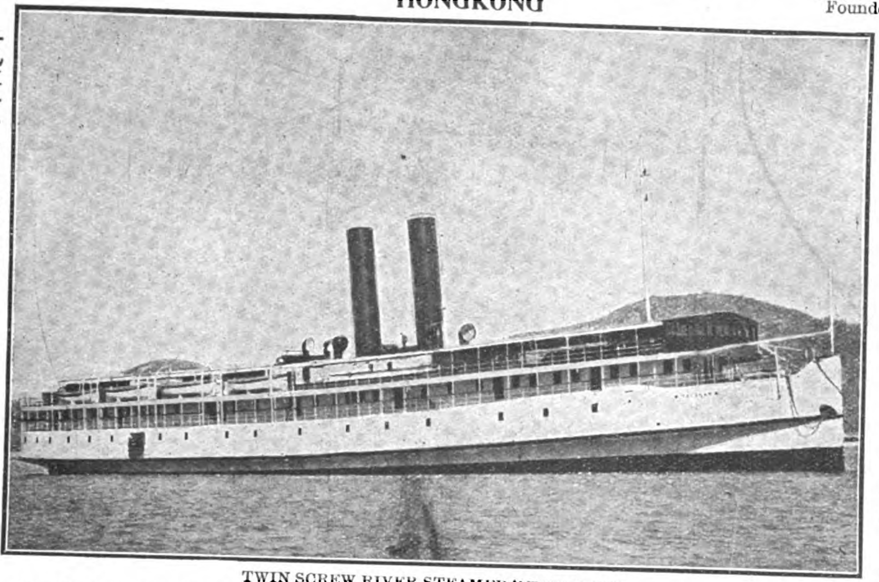

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Length 290 ft. Breadth 53 ft. Depth 12 ft., fitted with Compound Surface Condensing Engines for a speed of 14.7 knots.

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BOLTS, NUTS and RIVETS MANUFACTURED at SHORT NOTICE.

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A LARGE STOCK of STEEL and IRON PLATES, BARS and ANGLES, always in hand.

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Ship owners and Captains are assured that DOCKING and REPAIRS are carried out PROMPTLY and at MODERATE CHARGES.

The Dimensions of Docks and Slips are as follows :—

| *Name of Dock or Slip* | *Length on Keel Blocks* | *Entrance Breadth* | *Depth Over Sill at Ordinary Spring Tides* | *Rise of Tide* | |
|---|---|---|---|---|---|
| | | | | *Springs* | *Neaps* |
| **KOWLOON** | *Feet* | *Feet* | *Feet* | *Feet* | *Feet* |
| No. 1 Dock, Kowloon . . . | 700 | 86 ft. top / 70 ft. bottom | 30′ | 7′ 6″ | 3 |
| No. 2 Dock, Kowloon . . . | 371 | 74′ | 18′ 6″ | 7′ 6″ | —— |
| No. 3 Dock, Kowloon . . . | 264 | 49′ 3″ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 1, Kowloon . | 240 | 60′ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 2, Kowloon . | 220 | 60′ | 12′ | 7′ 6″ | —— |
| **TAI-KOK-TSUI** | | | | | |
| Cosmopolitan Dock . . . . | 466 | 85′ 6″ | 20′ | 7′ 6″ | —— |
| **ABERDEEN** | | | | | |
| Hope Dock . . . . . . . . | 430 | 84′ | 23′ | 7′ 6″ | —— |
| Lamont Dock . . . . . . . | 333 | 64′ | 16′ | 7′ 6″ | —— |

Please Address Enquiries to the Chief Manager, R. M. DYER, B. Sc., M.I.N.A., Kowloon Dock, Hongkong.

**Telephone No. 13 K. Head Office, Kowloon.**

**Town Office, Queen's Buildings** **Telephone No. 20, Hongkong**

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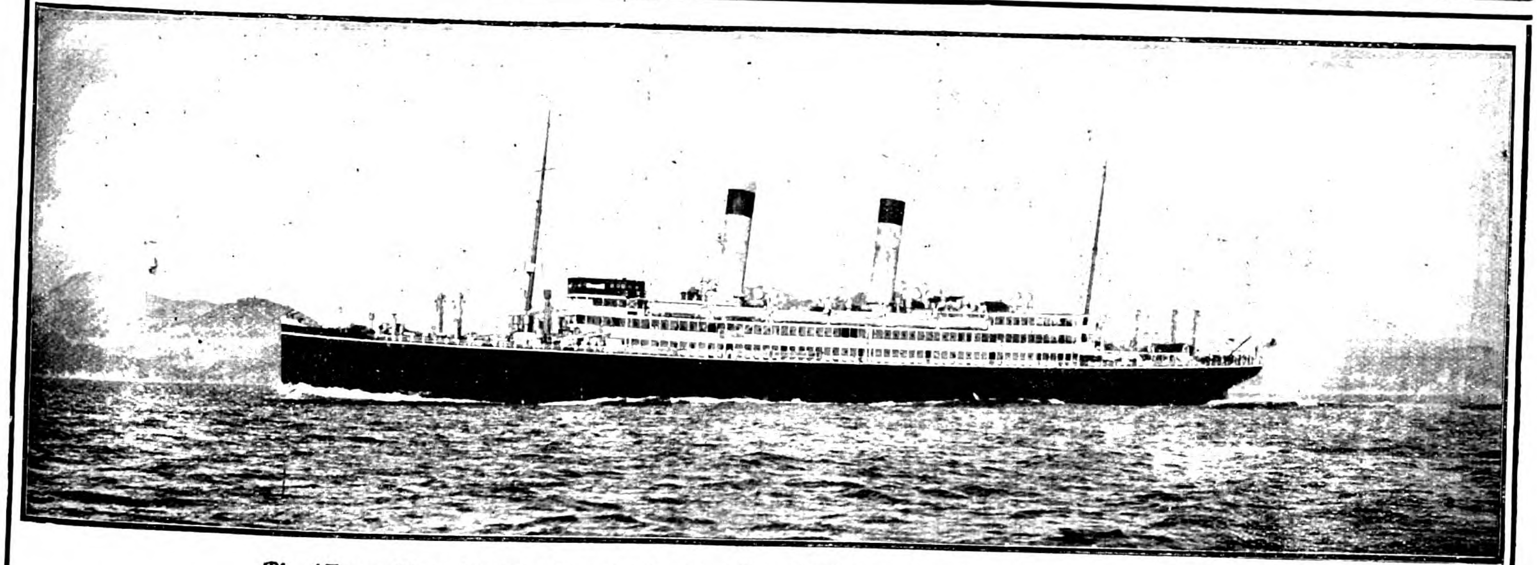

The "Tenyo Maru," built and engined by the Mitsu Bishi Dockyard & Engine Works, Nagasaki.

# MITSUBISHI DOCKYARDS & ENGINE WORKS, NAGASAKI

| DOCK No. 1. | | |
|---|---|---|
| Extreme Length . . . . | 523 | Ft. |
| Length on Blocks . . . . . | 513 | „ |
| Width of Entrance on top . . | 88 | „ |
| „ „ „ „ Bottom | 77 | „ |
| Water on Blocks at Spring Tide | 26½ | „ |

| DOCK No. 2. | | |
|---|---|---|
| Extreme Length . . . . . . | 371 | Ft. |
| Length on Blocks. . . . . . | 360 | „ |
| Width of Entrance on top . . | 66 | „ |
| „ „ „ „ Bottom. | 53 | „ |
| Water on Blocks at Spring Tide | 22 | „ |

| DOCK No. 3. | | |
|---|---|---|
| Extreme Length . . . . . . | 722 | Ft. |
| Length on Blocks . . . . . | 714 | „ |
| Width of Entrance, top . . . | 99½ | „ |
| „ „ „ Bottom. . | 88½ | „ |
| Water on Blocks at Spring Tide | 34½ | „ |

**THE BEST EQUIPPED SHIPBUILDING PLANT IN THE FAR EAST,**

With Special Facilities for Handling the Heaviest Castings and the Repairing or Building of Ships, Engines and Boilers Also Electrical Work.

**LARGE STOCK OF MATERIAL, AND FITTINGS ALWAYS ON HAND**

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**SOCONY ASPHALTUM** can be supplied in all degrees of hardness, suitable for use without the admixture of lighter oils, and is adapted to the following processes.

Permanent Road Construction.

Roofing, damp coursing, factory floors and tennis courts.

Pipe dipping.

Treatment of railroad ties, telegraph poles and posts.

Coating for structural steel and concrete sewer pipes.

**SOCONY ASPHALTUM** can be supplied in grades having **melting points as high as 221° F.** thus adapting it to use in the hottest climates.

**SOCONY ASPHALTUM** is not an experiment, having been in **successful use for many years** throughout the United States.

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## WATER-TUBE STEAM BOILERS

SUITABLE FOR ALL INDUSTRIES, AND FOR BURNING ANY KIND OF FUEL

**11,000,000 H. P. Land-type For Stationary Purposes—2,500,000 H. P. Marine-type Afloat**

MANUFACTURERS OF

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- FEED-WATER HEATERS
- ECONOMISERS
- STEAM PIPING
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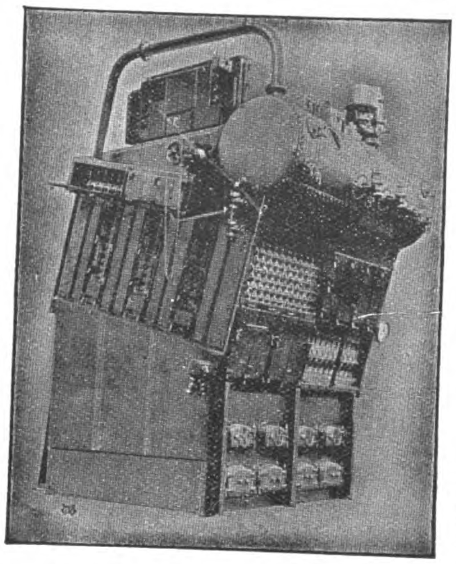

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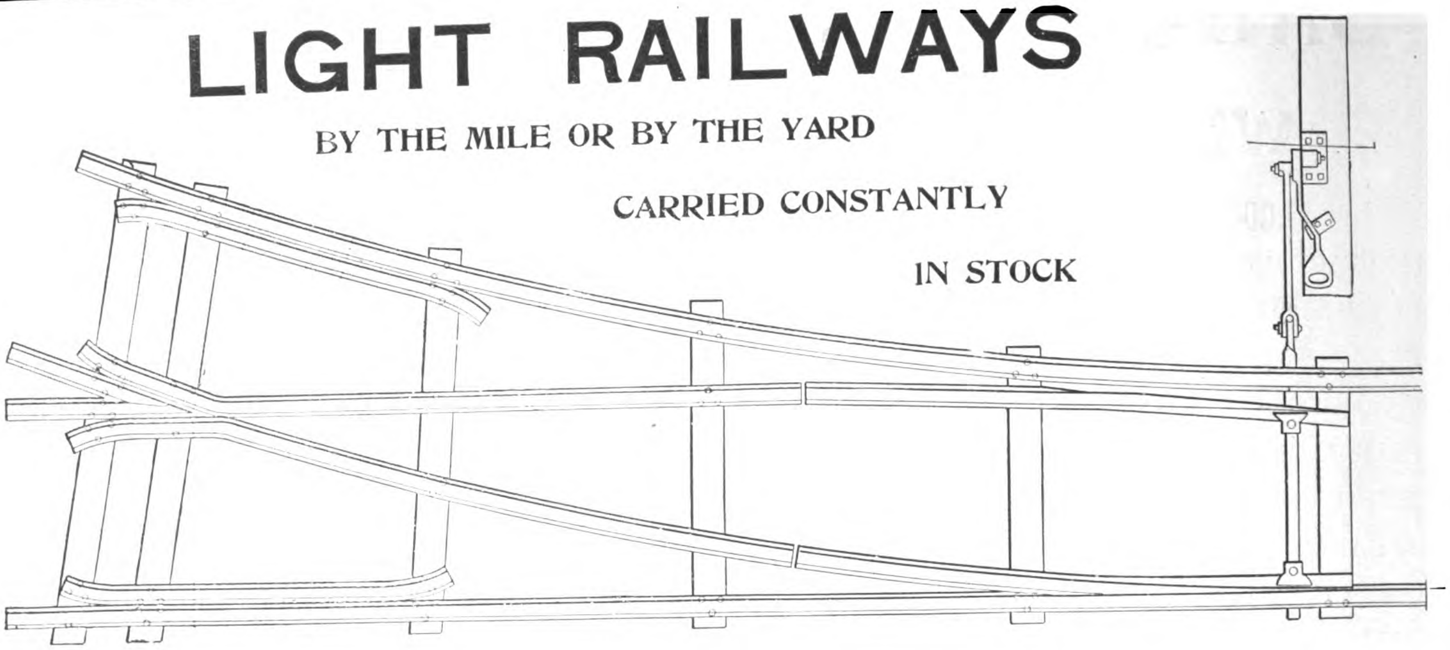

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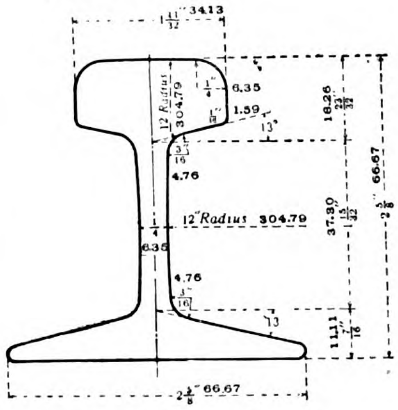

20 lbs. per yard.
9.92 kg. per meter.
31.43 gross tons per mile of single track.
19.84 tonnes per kilometer of single track.
168 ft. of single track per gross ton.
50.4 meters of single track per tonne.

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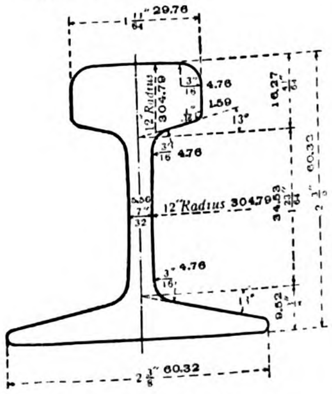
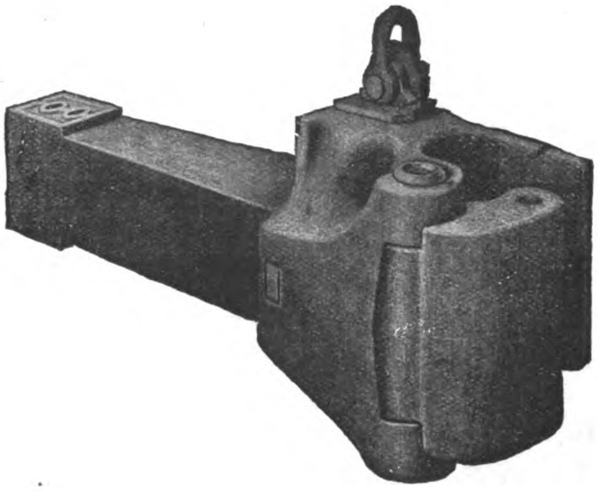
RAIL SECTION 1640



16 lbs. per yard.
7.94 kg. per meter.
25.14 gross tons of single track per mile.
15.88 tonnes per kilometer of single track.
210 ft. of single track per gross ton.
62.97 meters of single track par tonne.

The

# JANNEY-PENN Coupler



THE latest development of the Janney type of M. C. B. Coupling originally introduced and promoted by this company. This coupler has all the simplicity of the early type of the Janney coupler, and also has the up-to-date features of a "Lock-to-the-Lock," "Lock-Set," and a "Knuckle-Opener," and complies fully with all the requirements and recommendations of the M.C.B. Association of the U.S.A.

***Lock-To-The-Lock***—The locking pin cannot climb, being held in the locked position by a trigger the lower end of which projects into a recess in the coupler head, thus preventing accidental uncoupling.

***Lock-Set***—Lock setting is accomplished by the locking block resting on a seat on the inside wall of the coupler head when raised to the uncoupling position, from which seat it is dislodged on the closing movement of the knuckle in the act of coupling.

***Knuckle-Opener***—The knuckle-opener pushes the knuckle open to the fullest range of movement from a fully closed position, or from any partially open position, and its path of movement is such as to insure easy and complete opening of the knuckle.

The lock has an extra large bearing surface in contact with the knuckle in the coupler, being approximately five square inches. No portion of the locking block extends beyond the bottom wall of the coupler.

This coupler has the desirable feature of easy accessibility of parts, thus facilitating the making of repairs.

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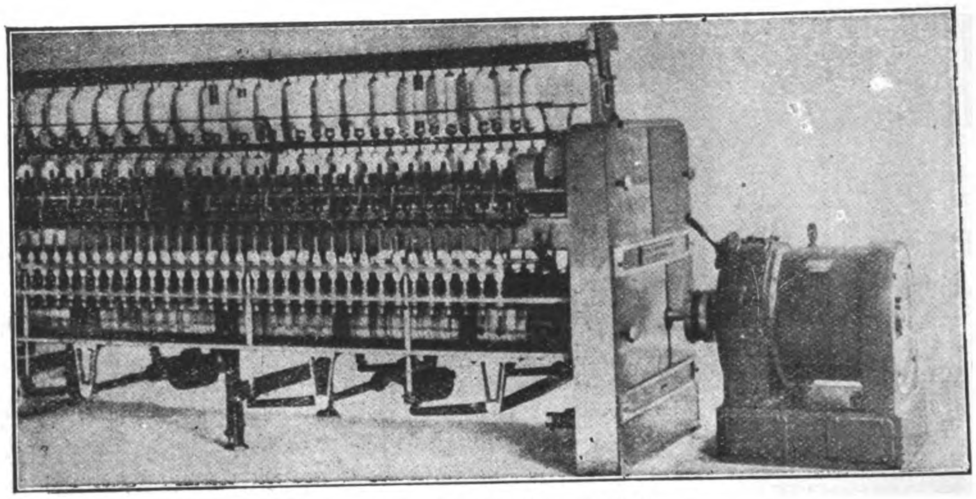

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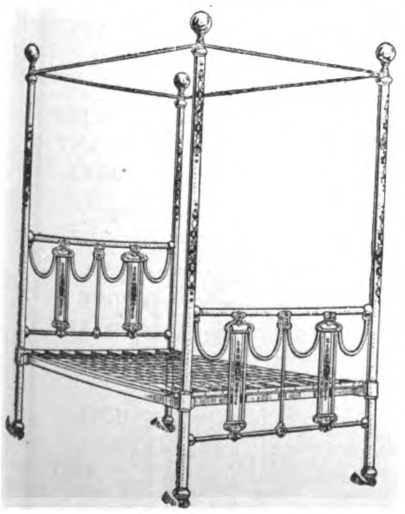

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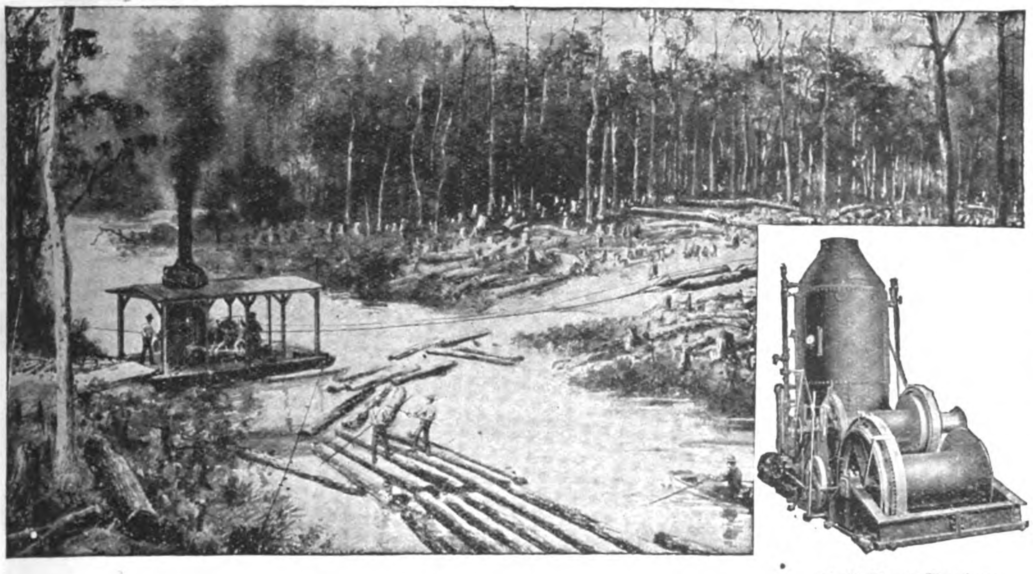

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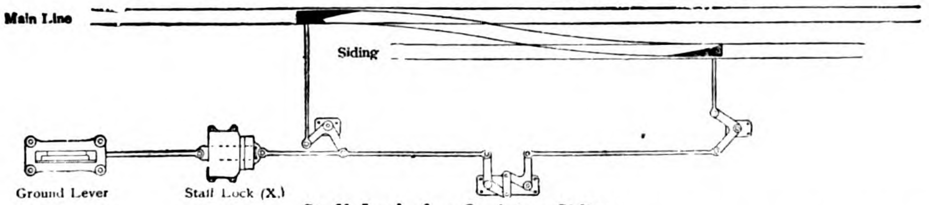


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**When a train is required to enter or leave an outlying siding the staff is placed in the top slide of the lock, which is then pushed in.**
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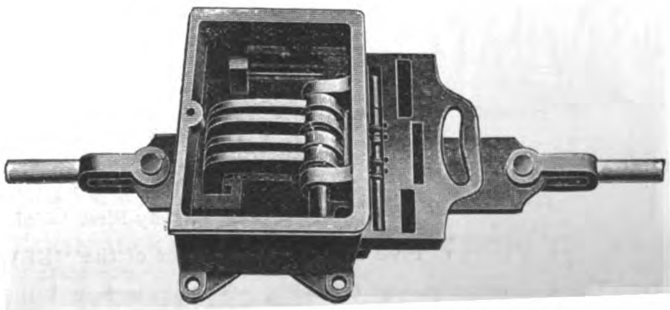

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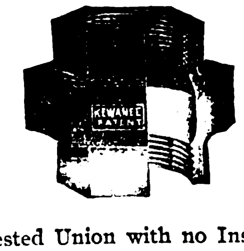


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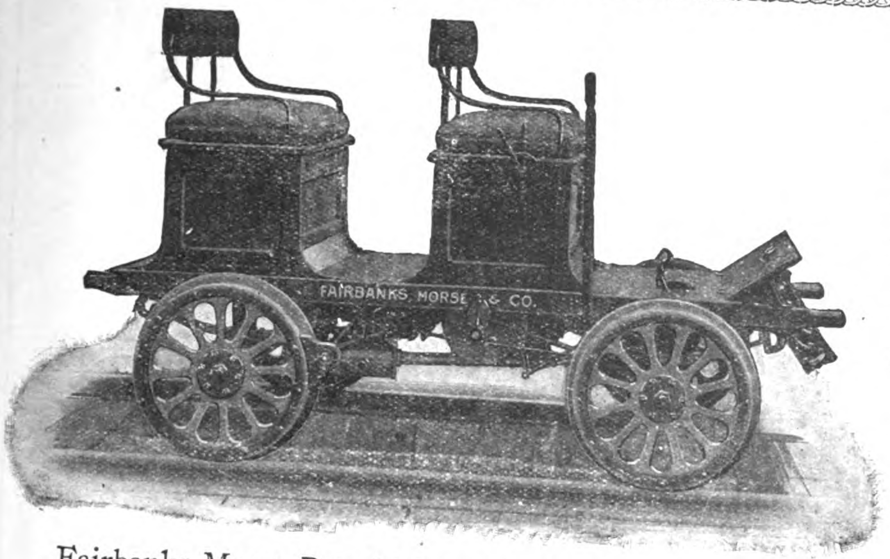


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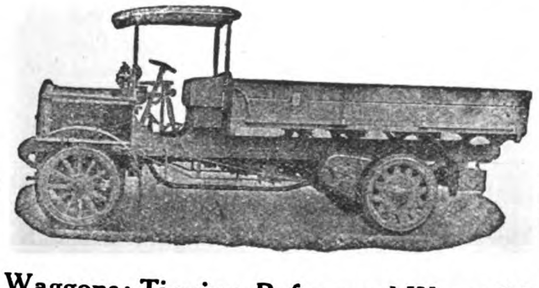

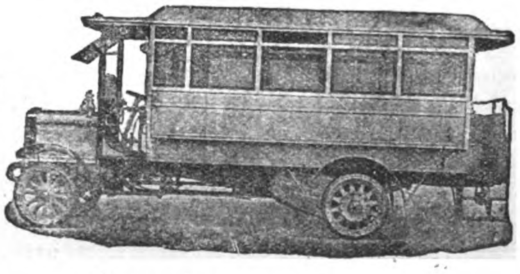

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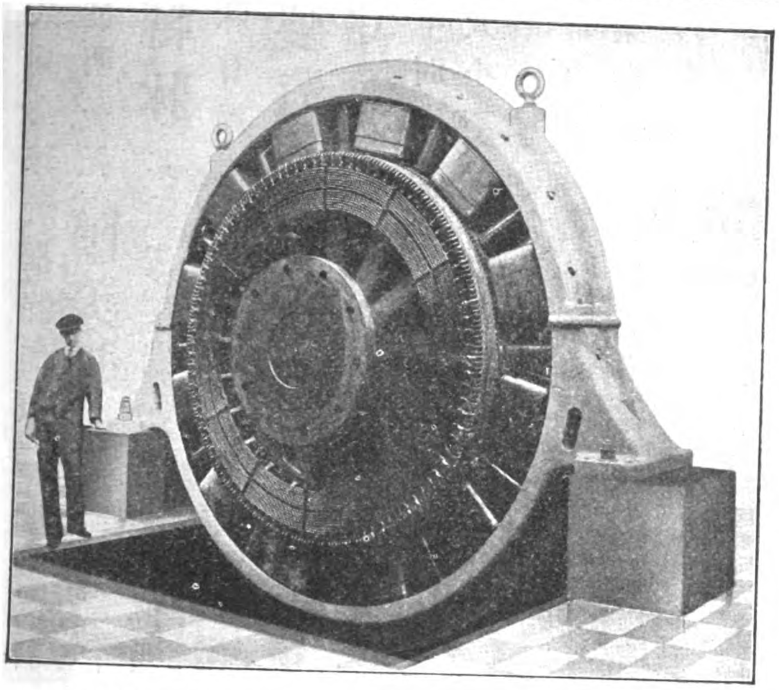

此圖爲車鈎汽機發電機克羅瓦德一千五百電流自五百至五百三十每分鐘旋轉一百八十次



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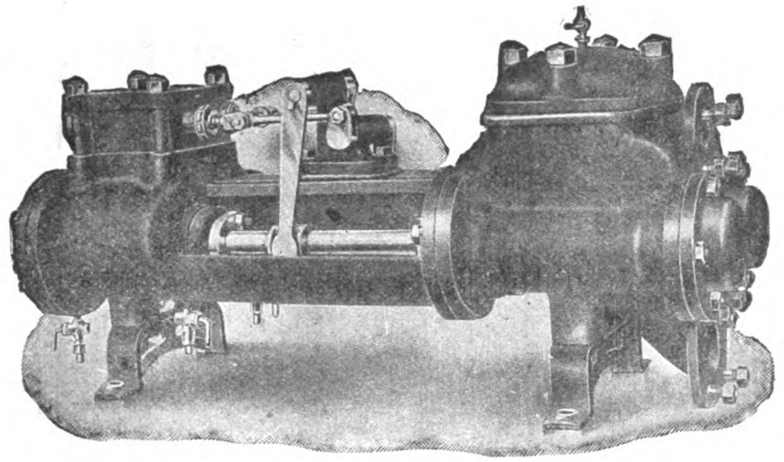

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Edgar Allen & Co., Ltd., Sheffield, England.

# 瑞生洋行

設分行在漢口天津北京等處

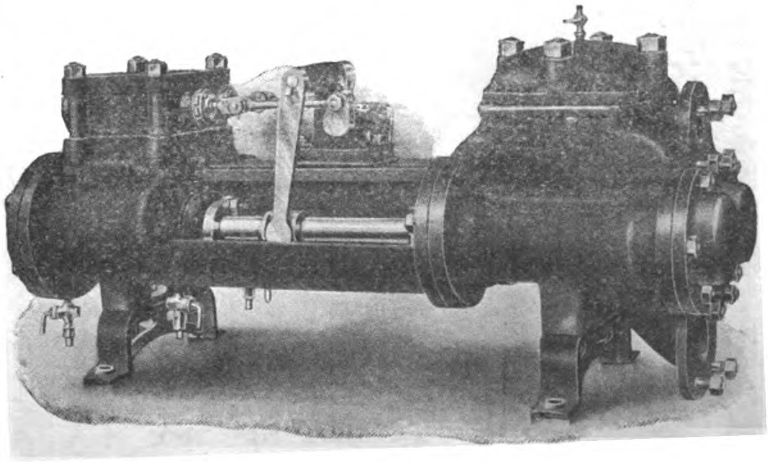
本行開設在華歷有年所承
蒙 官商訂購各種機器或
全廠或零售無不價廉物美
屢承 嘉許遐邇皆知凡
官商諸公購辦機器務祈惠
臨敝行估開價目繪呈圖說
格外克己上海漢口兩處另
設機器陳列所陳列各種最
新式樣機器及五金器具鋼
地軸皮帶輪掛脚等以備
諸公駕臨觀覽特此佈告
上海瑞生洋行謹白

Shanghai Machine Company

# 魏廷敦起水機器有限公司

Worthington Pump Company, Limited.

本公司起水機器亦在各國著名
賽會得有金牌
本公司亦有製造廠在以下之國
英國 法國 美國 澳國
德國 印度國



本公司亦有辦事處在以下載明
之各國
比利時 南亞斐利加 坎拿
大 澳大利亞 中國 葡萄
牙 墨西哥 巴西國 俄羅
斯 阿珍甸 西班牙 義大
利

中國總辦事處在上海九江路第三號

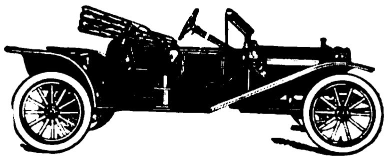
# 美孚油行廣告

Standard Asphalt Block Filler. Standard Oil Company of New York.

本行製造地瀝清砧塞俱其效用能使所鋪之地不能因天時之更換而改易并使砧面上之黏性合度且棉軟而能減少噪聲本行之地瀝清砧塞俱其功效有如此之大故凡美國來往行人最多之處鋪以此物其功效則顯而易見故人多稱道之若承諸君不棄欲知詳細效用并價目者請來函詢問可也

# 美國紐約克美孚油行廣告

Pratt's Motor Spirit. Standard Oil Company of New York.



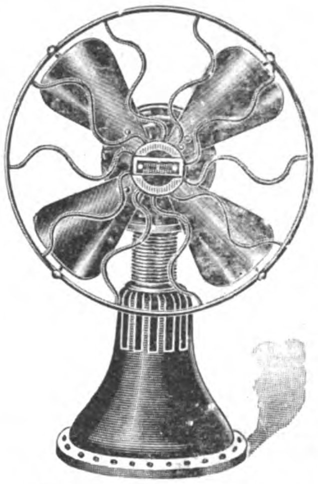
諸君費錢以購買⿰犭射司令汽車油之故必望其發生極速馬力並多走里數然欲達美滿之目的本行則勸諸君購取敝行之⿰犭射司令汽車油若一經試用諸君則知敝行之貨物爲無上上品也此項⿰犭射司令汽車油裝於箱內每叮自二加侖至五加侖均由敝行之美國鍊油廠所鍊就直接由該處運來故毫無摻雜他種物質之弊

美孚油行⿰犭射司令汽車油部啓

# 柏樂天洋行廣告

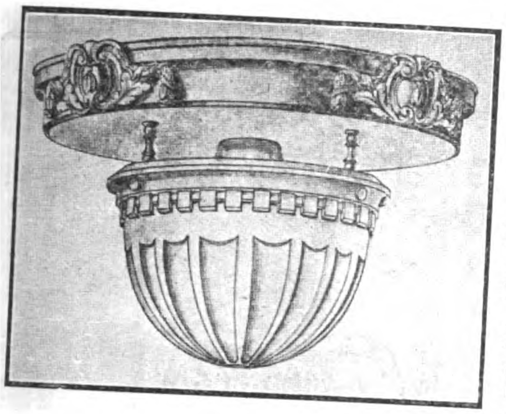
The International Import & Export Co.

## 新發明無電風扇



本行經理美國藍克勃里持廠(譯卽湖風馬達扇)新發明一種無電自來風扇點燒火酒速率快捷每二十四小時祇費洋一角五分而一分鐘內自五百轉至六百轉之多故此風扇非獨內地極端歡迎卽裝電之處亦覺搬動靈便危險毫無

## 新發明白來司康拉脫燈

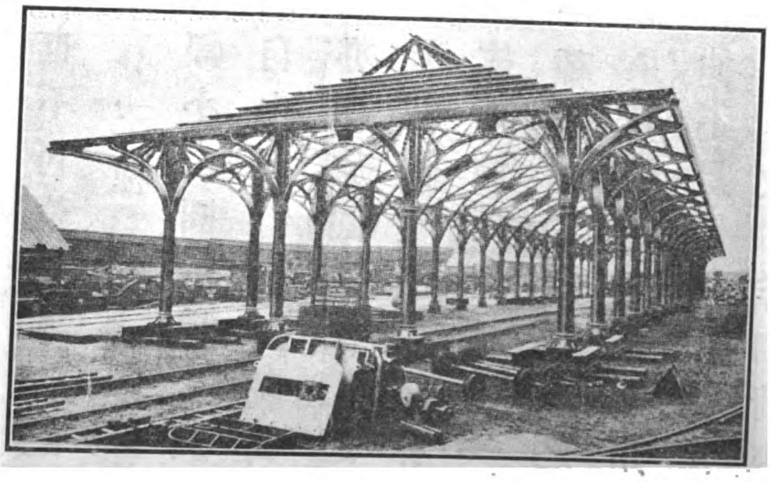


此燈製造精美燃點清潔明如白晝且光頭柔和其色如銀輕巧可愛效力極佳質地美好因發光勻洽空氣透徹易於料理諸君試購用之方知此燈之適用也倘蒙定購或願任各處經理者請函詢大馬路廿八號柏樂天洋行可也

# 海特雷脫生公司廣告

Head, Wrightson & Co., Ltd.

本公司有大廠三所專造煤礦場及各礦場所用之物及裝煤船貨車起重機風箱冶汽爐船塢門等橋坑總齒輪鋼質貨車屋頂煙筒油池之類此圖乃香港之車站其屋頂為



本公司所建造本公司為英國大廠之一每年出鑄件十萬噸出機器一萬七千噸且為中國印度日本包辦各項工作

# 美孚油行廣告

Socony Auto Oils.　　Standard Oil Co. Lubricating Oil Department.

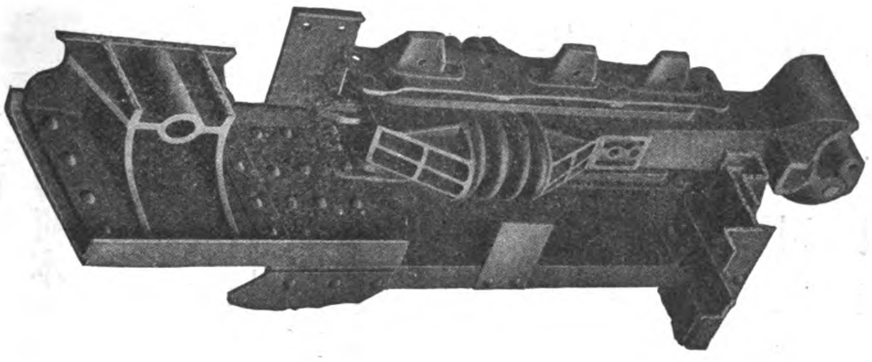
本行所出鎖可聶自轉油乃由格致考驗鍊成特供馬達家所需用且此油精緻能使馬達機器運動合度且可經久省用而免磨擦之弊蓋馬達機器若遭磨擦較用油爲費所謂機器之馬力者即殺力也不可荒廢本行之鎖可聶自轉油分三種一種爲一愛克司之油用於輕小之圓油機上於寒冷之天氣必能自由流行也一種爲兩愛克司之油亦用於圓油機上適用於盛暑之時蓋凝結合度不致汚抹倘此油因天時之故不適於用可用三愛克司之油一種爲三愛克司之油亦用於圓油機上特備爲熱地所用即兩愛克司油不足即以此油代之若承各界諸君不棄欲知詳細請來函索取說明書即汽車油之指南本行專做光油遐邇聞名以上三種油桶祈認明庶不致誤

美國紐約克美孚油行光油部敬啓

# 新民頓鐵道材料出口公司廣告

The T. H. Symington Co. Railway Material Export Corporation.

本公司所製鐵道用具爲全世界之冠且樣式均特別新樣所製之旅行箱及運動機件無論內件外件無不齊備故爲美國鐵道奉爲圭臬且通行於世界



各處中國之京張鐵路及高麗鐵路均購用極有效力若承不棄請通函定購可也開設美國紐約省百老會路一百四十九號

# 英國來大匯有限公司廣告

F. Reddaway & Co., Ltd.

本公司獨製駱駝牌皮件專製救火皮帶鐵甲皮帶及皮布等件且所製皮件爲水或汽或藥水所不能侵入者本公司又製造橡皮器俱以供鐵路幷工藝廠及開礦工作等處之用若承各界諸君光顧請向經商人詢問駱駝牌可也

總公司及工廠開設英國曼區司得

## 司帝反生公司廣告

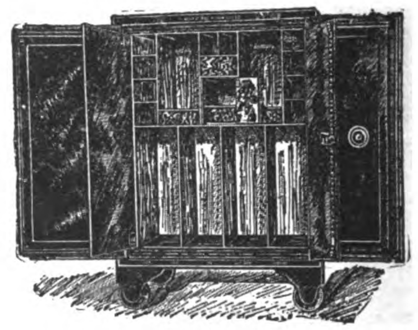
W. F. Stevenson & Co., Ltd.

小呂宋　伊羅伊羅　塞步
本公司駐小呂宋單獨經理白
弗羅匹次公司之農業機器克
老司來弟兄公司之煤汽機及
油汽機奧司丁製廠之造路機
器威廉滑脫公司之航海機器
及水鍋等
合羣愛司倍司督司東方經理處



## 晉隆洋行廣告

Herring Hall Marvin Safes. Mustard & Co.



赫令好馬文保險箱爲
上海所罕見目下陳列
於本公司之售賣間
若欲知詳細價目請來
函索取目錄并價格表
爲荷本公司在中國爲
單獨經售此項保險箱
之公司
公司開設上海圓明
園路二十二號
電話第十五號



## 馬爾思公司

A. J. Morse & Son Diving Apparatus.

本公司創設於紀元一千八
百三十七年專製下水應用
之器俱若欲定製無不立辦
公司開設美國鮑思敦高
街第二百二十一號
經理處小呂宋弗蘭克司
決浪克



## 希米脫加熱機關車蒸機公司廣告

The Schmidt Superheater For Locomotives.

The Schmidt Superheating Co., Ltd.

本公司所製之加熱蒸機中有
四百九十多條之鐵道用二萬
八千五百架機關車之加熱蒸
機均爲倫敦及西北鐵路公司
所審定若承購買請向上海經
理處瑞記洋行定購可也
公司開設英國章司民司
得維多利亞街二十八號

# 白老頓製銅公司廣告

The Broughton Copper Co., Ltd.

本公司冶銅製造紫
銅黃銅青銅管子溶
冶合度堅固異常特
供航海及機關車并
種種用具叉製造銅
塊銅條銅片及銅版
并製電銅版及夾銅
等物

公司開設英
國曼區司得

# 安德生公司廣告

Wm. H. Anderson, & Co. Manila, P. I.

本公司專做出口進
口貨物并代客買賣
且爲以下所列各公
司駐小呂宋之經理
革林島水門汀泥公
司　香港纜索製造
公司　立培麥克聶
立培公司　司活夫
公司　勃老司活克
自耳克考蘭特公司
婑磨督公司大
愛地特保險箱光滑
油溝渠管火磚火泥
及羅勃老特避火之
瓦若承各界光顧祈
通函定購可也

本公司開設小呂
宋小打克羅橋

# 麥康韋討萊公司廣告

The McConway & Torley Co. Janney—Penn. Coupler.

邇來新發明之愛姆西皮近耐形連結俱爲本公司所輸入及研究所得者此連結俱卽近耐形之化身而變成目下最通用之對鎖鎖具及肘節開具爲美國愛姆西皮會所推許玆將各所製造者一一說明於後

對鎖者卽旣爲輪制所鎖住則鎖條決不向上活動因下端凸出干連結之空處免致脫節也

鎖具者卽以鎖砧置於連頭之內端俟不連結之端向上轉動時卽按節而合若欲解脫此鎖具當於連結時拔去之

肘節開具卽由最相結連之處或略分開之處開放至最大開放處其運行處自由且肘節開放完備

其鎖面形極大約五方吋故能使肘節附合且鎖砧大小適合於連結端之下此連結俱備有各種之附屬品且易於修理此項連結俱爲本公司所專製

總公司開設美國本色萬尼亞省匹此勃

中國經理上海愼昌洋行天津協隆洋行

# 交通銀行廣告

## BANK OF COMMUNICATIONS

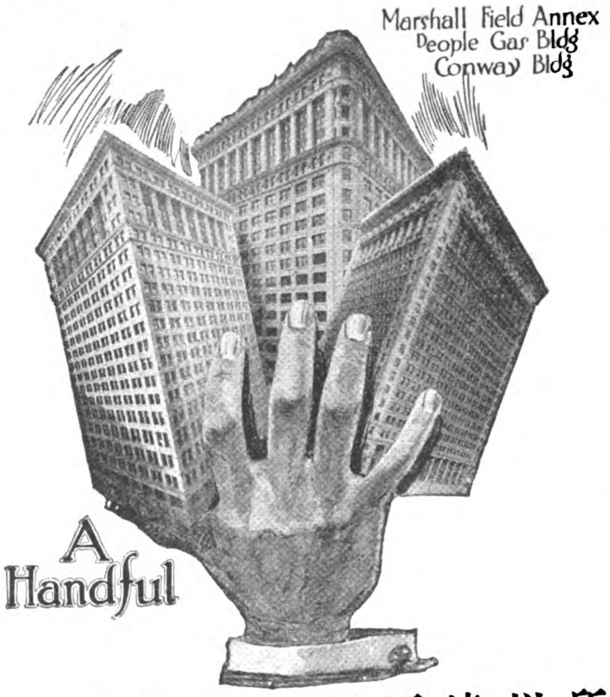
本銀行資本一千萬兩專辦銀行一切交易各項存款無論定期活期其利息均照議給付并滙劃中國各處以及押款等事　總行開設北京　分行東三省　牛莊　奉天　長春　吉林　哈爾濱　遼陽　蓋平　孫家台　鐵嶺　錦縣　新民屯　直隸　北京　天津　張家口　保定　海甸　順德　唐山　北通州　豐鎮　勝芳　石家莊　山西　大同　陽高　陝西　澠池　山東　濟南　濟寧　棗莊　烟台　德州　河南　開封　焦作　周家口　漯河　道口　彰德　鄭州　信陽州　洛陽　鄱陽　江蘇　上海　蘇州　無錫　鎮江　揚州　浦口　板浦　徐州　清江浦　浙江　杭州　寧波　安徽　蕪湖　蚌埠　江西　九江　湖北　漢口　宜昌　沙市　湖南　常沙　益陽　衡州　湘潭　常德　寶慶　廣東　廣東　特別處新列后　熱河　歸化　香港　新加坡　大連等等地方

總經理　張思仁　史拉克
副經理　徐寶琪
仝啓

# 西北展張鐵片公司廣告

North Western Expanded Metal Co.

本公司製造哪白兒展張鉄片專爲近世築造之鋼屋內部所用以上之圖爲美國芝高哥城最大最新近之大廈其內部及底盤均爲本公司所製之哪白兒展張鐵片條板所造蓋以之作底盤其價甚廉以之作墻則耐久因哪白兒牌之條板爲惟一之建築品且爲全球所公認推爲內外建築特別品之標準若用於熱帶處

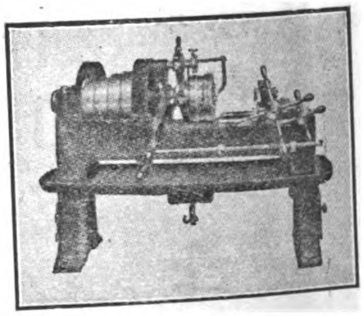



所用以作墻及天花板底則更相宜蓋其性耐久而不曲且不笨重易於運輸且避水患此項展張鉄片條板業經由五洲各大建築家實地試驗防熱避風火暴雨等危險實爲建築家所不可少之物

今敬告建築家若欲建造房屋無論何時何地何物先請察驗哪白兒牌之展張鉄片條板本公司備有說明書請來函索取可也

# 英國約書亞西潑有限公司

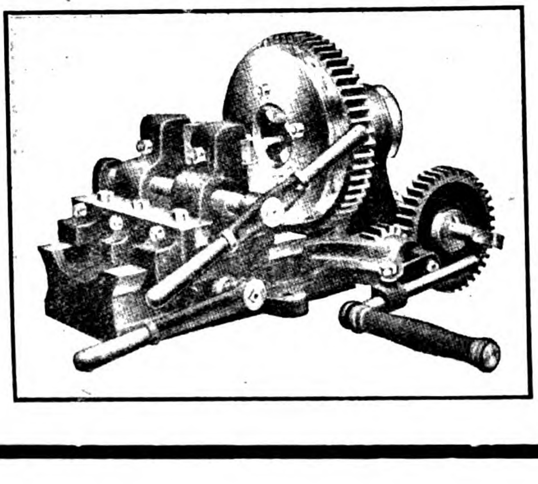
Joshua Heap & Co., Ltd.



本公司專造製螺絲機器此圖爲二吋單頭自動製螺絲機器爲多頭製螺絲機器之一曾註册立案爲近世最省工力之機器備有柄頭及自動開機連於螺形頭上及自動關機弁配製螺絲各俱無不靈動

本公司所出之註册鋼質螺絲模型爲市上所罕有蓋質地堅實螺絲板易於拆卸且全體皆爲良工所製並無發條或輕脆之料作摻雜其間

此圖爲改良通用之製螺絲機器可製螺絲管彎曲短小之件如對徑二吋大小之物或釘梢對徑二吋半等物均可製造近年來銷數已達二千五百架其大者如對徑八吋之物亦可製造此項機器電力與人力均適用若欲知詳細請來函索取目錄爲禱



# 橫濱正金銀行廣告

Yokohama Specie Bank, Limited

本銀行創設於紀元一千八百八十年總行開設日本橫濱資本日洋四千八百萬元收足資本日洋三千萬元公積日洋一千八百五十萬元英京倫敦各銀行如倫敦及司密夫聯合銀行倫敦聯會股票銀行及派耳銀行均為本行之經理今將分行及經理處開列如下

安東縣　孟買　加耳谷塔　長春　大連　檀香山　香港　漢口　神戶　倫敦　來因司　遼陽　奉天　紐約　牛莊　長崎　大坂　旅順　北京　舊金山　東京　鐵嶺　天津　青島　哈爾濱　勞山及耳司

上海亦設分行　活支及定期存款利息均有銀兩洋圓均聽尊便　匯票可通日本高麗臺灣及中國各重要地方幷歐洲印度美洲各通商處所并辦理各種銀行所辦各事宜

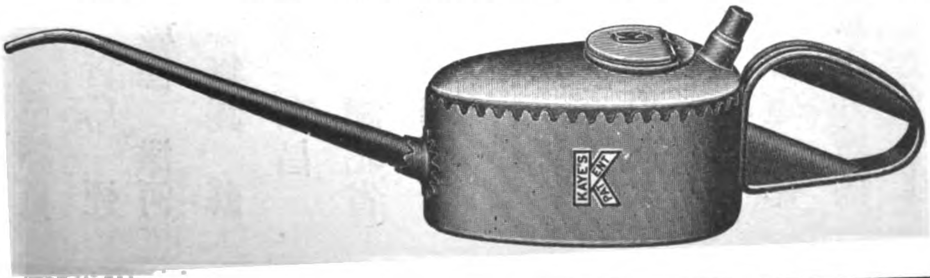
經理科大麥啟

# 克耶鎖鍵工廠露佈

Joseph Kaye & Sons Ltd., Lock Works, Leeds.

本公廠專製車門鎖鍵滑門門閂精巧門鐶門鎖及門閂等以應各種用品且製造鋸齒形無縫之純鋼油管承經註册專賣為英國之出品供應於英國水軍者不下六萬只大西鐵路大北鐵路蘭克省及雅克省間之鐵路倫敦及西南鐵路南斐洲及印度國有之鐵路均用此純鋼油管盛油也倘承不棄請來信定購是幸

工廠開設於英國离池



# 中國銀行廣告

THE BANK OF CHINA

本銀行於民國元年奉　政府命令設立兩年以來信用昭著總行設於（北京）分設（直隸省）天津　保定　邢台　灤縣　唐山　滄縣　濮陽　邢縣　磁州（山東省）濟南　青島　煙台　藤縣　濟寧　周村　惠民　益都　臨清　臨沂（河南省）開封　周口　彰德　漯河　信陽　道口（山西省）太原　運城　歸化城（江蘇省）上海　南京　鎮江　無錫　蘇州　揚州　淸江浦（安徽省）安慶　蕪湖　大通　徐州　下關　蚌埠（江西省）南昌（福建省）福州　南台（浙江省）杭州　寧波　蘭谿　嘉興　湖州　溫州　紹興（湖北省）漢口　沙市　宜昌（廣東省）廣州　江門　汕頭　瓊州　韶州　潮州（東三省）奉天　營口　安東　錦縣　大連　鐵嶺　長春　吉林　哈爾濱　齊齊哈爾　等處享有發行鈔票代理國庫之特權並辦理匯兌買賣生金銀往來存款定期存款抵押放款貼現放款代各公司商號或個人收取本埠及他埠票據款項保存有價證券及一切貴重物件至匯兌一項無論通商大埠蕞爾遐陬凡本行已經分設者均屬便利所收匯費無不格外克己以副光顧諸君之雅意再本行發行鈔票準備充足凡完糧納稅發俸放餉官款出納商民交易以及應付鐵路輪船郵電一律通用現爲便利商民行使本行鈔票起見特於北通縣（海甸鎮）設立兌換所並於本京內外城商店繁盛之區委託殷實商號代兌本行鈔票如有多數鈔票請逕向（西交民巷）本行兌換可也茲將代理兌換處所開列於下

▲注意▼（東四牌樓）寶源銀號（安定門）會源銀號（東珠市口）隆茂源銀號（騾馬市）恆裕金店（西河沿）仁昌金店（後門）永通誠布店（新街口）益泰成布店（西單牌樓）和順公布店（後門）平易銀號（西單牌樓）益大銀號（又珠寶市爐房十家）恆盛銀號　同元祥爐房　德順號　聚起號　祥瑞興記　源豐號　復聚號　萬興號　全聚厚記　聚盛源爐房　再本總行營業時間開列如下　陽曆四月一日起至九月底止每日上午九點鐘起至下午四點鐘止由陽曆十月一日起至三月底止每日上午十點鐘起至下午四點鐘止

# 法蘭克司屈郎機器公司

Frank L. Strong Machinery Co.

本公司開設斐列濱經理各種機器幷顧問工程建築營造等事下列各製造廠均為本公司駐斐列濱祗此一家之經理公司

總電汽公司 專製電汽應用材料器俱
匹登水輪公司 專製水輪
拿皮泡公司 專製車機升機
芝加哥抽機器俱公司 專製抽氣機壓氣機及附屬品
美國器俱工廠公司 專製車機鏍子製模俱半徑鑽頭
美國白羅耳公司 專製風車風房幷通氣之器俱
白郎息比製造公司 專製研磨機器及各附屬品
鷹立球鋼鐵公司 專製鋼鐵器俱
立及悟特製造公司 專製鋸件
屈老司康克利鋼件公司 專製(康式)房屋物件
哇的司升機公司 專製坐客升機及貨物升機
押克製造公司 專製冰機
白考克威耳考克司公司 專製水管鍋爐
美國浣衣機器公司 專製浣衣機器
愛姆司鐵廠 專製汽機及鍋爐
灰衣瑡安公司 專製鋸件及木工各種機器
古特立志公司 專製橡皮物件
耶耳土耐製造公司 專製鏈具及升機
查去倫公司 專製避水皮帶等件
火文哇溫公司 專製(海密耳登可立司)式之汽機
克老瑡轉轆俱及應用品公司 專製德律風器俱及附屬品
瑡老克裝包公司

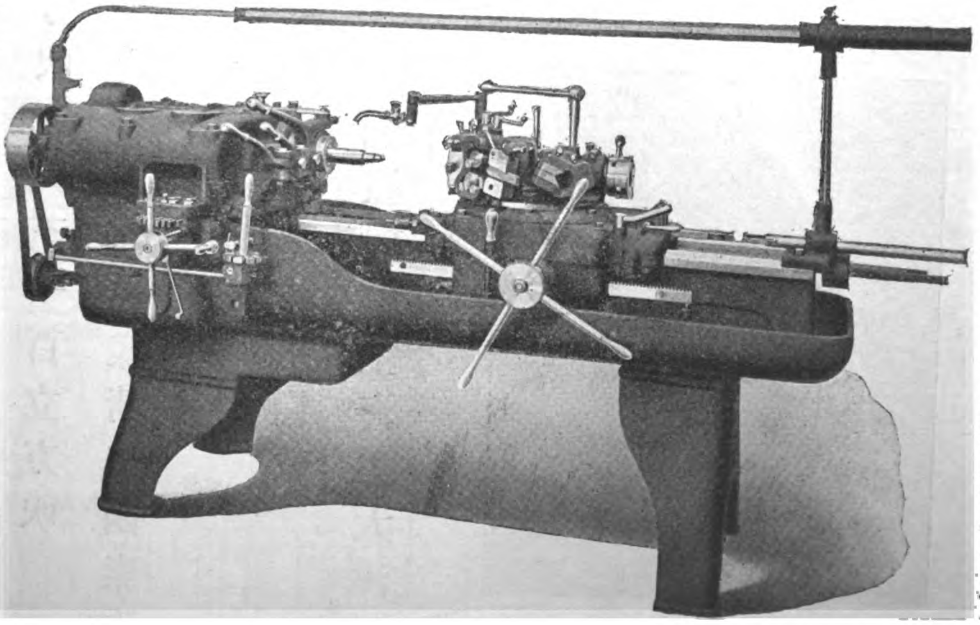
若承光顧無不歡迎電報密碼請用英字 Landstrong.



# 羣司蘭姆生機器公司

Jones & Lamson Machine Company.

此圖為本公司所特之車床若能習學此機完美則得利可操勝劵也此車床為車塔平面機其大小為闊三吋長三十六吋專做鐵條柄軸等各種工件故此機及其作用 能使工人幷機器加增出品 因用是項機器不必購用價值高貴之



小另件配製工作也總之製造此種車床之目的 即費一文錢得一文錢之利於購者有莫大之利益

欲知詳細章程請來函索取不費郵資

本公司開設 美國活忙脫省司不林飛而特 英國倫敦維多利亞街九七號

# 華愛德公司

本公司代聘全球著名工程師專包辦並經理各種工程兼各式工程物料已歷有年所成效昭著爲各國官商各界所推許如蒙 惠顧請向下列各經理處接洽可也

美國紐約匯業處四十三至四十九號

英國倫敦克洛克路九號

J. G. White & Company

# 潑利司脫門弟兄公司廣告

Priestman Brothers, Limited.

本公司專製掘泥機器挖泥機器及升降機器其兜之大小式樣共有一百五十種小自一立方呎起大至一百立方呎若欲知詳細式樣請來函索取樣本可也

本公司開設英國倫敦

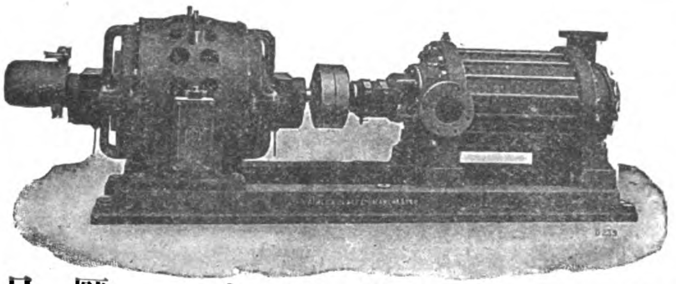
中國之經理處上海志大洋行

上圖爲多兜挖泥機之一爲大包工家大成公司所有

## 麥脫拍來脫輪盤抽機公司

Mather & Platt, Ltd. Turbine Pumps.

輪盤抽機爲本公司所發明且已有四十年之經驗故所出之抽機愈製愈精購用者無不樂用且無論高低均適於用此項抽機之動力或由馬達小輪汽輪速率之汽機或皮帶或繩索之力均可抽動



且一經試用則耐久非常不必再行查驗本公司所出之抽機通行於各處極多行試多年從未拆卸開視因本公司所製造之抽機美備洽意也

此項抽機有自動壓匀之力裝製齊備且可增減機內之空穴價格便宜若欲購用而知詳細章程者請來函索取目錄上圖爲六筒之抽機　頭長六百十二尺每分鐘可吸六百五十加侖每分鐘可轉一千四百五十次則所動之力乃藉馬達也


## 交通部吉長鐵路客車時刻表

Kirin-Changchun Railway.

民國四年五月一日改定

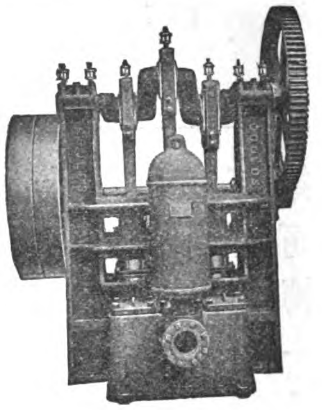
### 由吉林至長春頭道溝

| 站名 | 到/開 | 上行車 第二次 客車 | 上行車 第四次 客貨車 |
|---|---|---|---|
| 吉林 | 開 | 下午二·三〇 | 上午六·二〇 |
| 九站 | 到 | 下午二·五〇 | 上午六·四二 |
| 九站 | 開 | 下午二·五二 | 上午六·四五 |
| 孤店子 | 到 | 下午三·〇七 | 上午七·〇三 |
| 孤店子 | 開 | 下午三·〇八 | 上午七·〇四 |
| 樺皮廠 | 到 | 下午三·一三 | 上午七·二〇 |
| 樺皮廠 | 開 | 下午三·一四 | 上午七·二三 |
| 趙家店 | 到 | | |
| 趙家店 | 開 | 下午三·四八 | 上午七·五六 |
| 土們嶺 | 到 | 下午四·〇六 | 上午八·一八 |
| 土們嶺 | 開 | 下午四·一一 | 上午八·二四 |
| 營城子 | 到 | 下午四·三三 | 上午九·〇三 |
| 營城子 | 開 | 下午四·三六 | 上午八·五〇 |
| 下九臺 | 到 | 下午四·四八 | 上午九·〇三 |
| 下九臺 | 開 | 下午四·五〇 | 上午九·〇五 |
| 飲馬河 | 到 | 下午五·〇四 | 上午九·二〇 |
| 飲馬河 | 開 | 下午五·〇六 | 上午九·二三 |
| 卡倫 | 到 | 下午五·二六 | 上午九·三五 |
| 卡倫 | 開 | 下午五·四〇 | 上午九·五七 |
| 長春 | 到 | 下午六·一〇 | 上午一〇·三一 |
| 長春 | 開 | 下午六·一五 | 上午一〇·三七 |
| 頭道溝 | 到 | 下午六·二五 | 上午一〇·四七 |

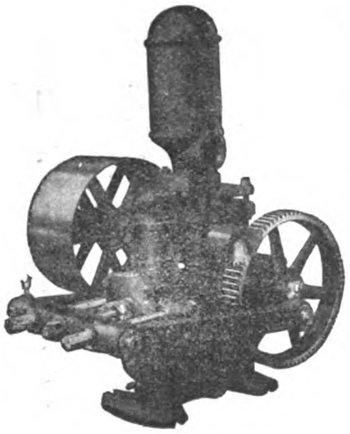
### 由長春頭道溝至吉林

| 站名 | 到/開 | 下行車 第一次 客車 | 下行車 第三次 客貨車 |
|---|---|---|---|
| 頭道溝 | 開 | 上午七·二〇 | 下午二·二〇 |
| 長春 | 到 | 上午七·二六 | 下午二·三〇 |
| 長春 | 開 | 上午七·四二 | 下午二·四五 |
| 卡倫 | 到 | 上午八·一三 | 下午三·二〇 |
| 卡倫 | 開 | 上午八·一四 | 下午三·二五 |
| 飲馬河 | 到 | 上午八·四六 | 下午三·五六 |
| 飲馬河 | 開 | 上午八·四八 | 下午四·〇二 |
| 下九臺 | 到 | 上午九·〇三 | 下午四·一七 |
| 下九臺 | 開 | 上午九·〇四 | 下午四·二三 |
| 營城子 | 到 | 上午九·一六 | 下午四·三四 |
| 營城子 | 開 | 上午九·一八 | 下午四·三六 |
| 土們嶺 | 到 | 上午九·四〇 | 下午五·〇三 |
| 土們嶺 | 開 | 上午九·五〇 | 下午五·一三 |
| 趙家店 | 到 | | |
| 趙家店 | 開 | 上午一〇·一〇 | 下午五·三三 |
| 樺皮廠 | 到 | 上午一〇·三一 | 下午五·五七 |
| 樺皮廠 | 開 | 上午一〇·三三 | 下午六·〇三 |
| 孤店子 | 到 | 上午一〇·四六 | 下午六·一八 |
| 孤店子 | 開 | 上午一〇·四七 | 下午六·二〇 |
| 九站 | 到 | 上午一一·〇三 | 下午六·三六 |
| 九站 | 開 | 上午一一·〇五 | 下午六·四三 |
| 吉林 | 到 | 上午一一·二五 | 下午七·〇五 |

# 美國顧爾機器廠

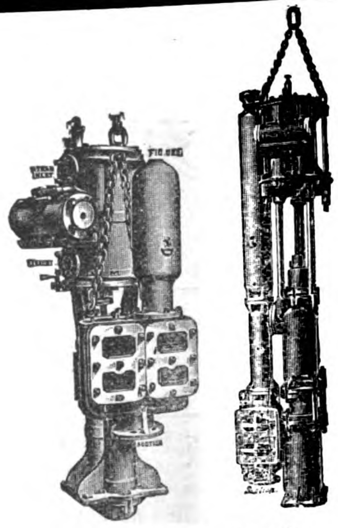


本廠開設已久爲中外各國所馳名專造各種大小抽水幫浦其三角抽水機爲尋常各廠家所最爲合用之機尙有如保險公司所用最爲靈巧便利之轉動抽水機此項機器甚爲輕便備爲消防之用尤爲合宜故凡保險公司俱有備置因其得輕便之利也其餘如自來水廠船廠各機器廠並礦井內外所應用之大小各式抽水機器無不俱全本廠係專造各項抽水幫浦故比他家式樣更多製造尤爲完善凡中外各國之賜顧者悉知本廠機件之精良造具之美備也欲知詳細情形請移玉至本行接洽可也

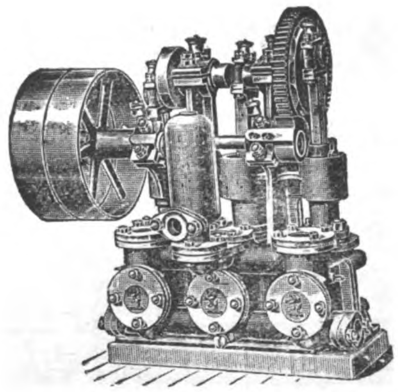


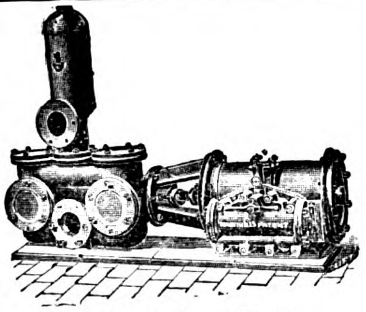
中國經售處上海圓明園路四號協隆愼昌洋行

The Goulds Manufacturing Co.

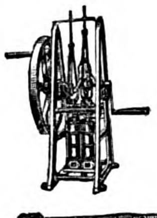


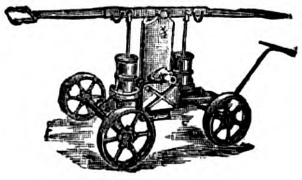
下垂抽水機
煤船煤礦所用

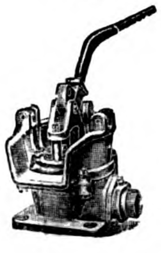




普通汽力抽水機







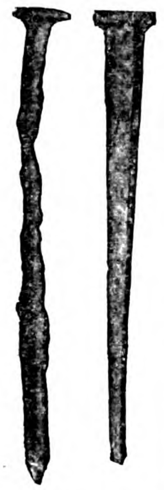
本公司製造各種抽水機專備工商各界採用各式全備不論使用何項動力如人工汽機皮帶風車水電各力之類均能適用如蒙函詢卽將東方目錄寄奉

英國華亨頓城伊凡斯公司謹啟

Joseph Evans & Sons

# 美國展輥冶鐵工廠廣告

The American Rolling Mill Co.



新舊兩鐵釘之比較方形熱鐵釘可用三十八年鋼鐵釘可用十一年

本公廠爲國家所特許稟准立案爲萬國鐵廠所賞識因所鑄之**奧姆可**鉄耐用且爲新發明格致術可免生銹之患鐵性本易生銹而本廠獨得妙法使其免銹二十年前無人知其原性故有歐美著名之冶金學士研究其生銹之故及免生銹之法至今日大工已成查得首時所用之鐵爲純潔之質故耐用後因有雜質如鎂及硫礦等物故欲免其生銹必須將雜質冶去而後可至免鋼生銹之法亦然當將雜質及炭質冶去

由研究試驗而得一定例如電池之例一律若電內放雜質則電流不順本廠之**奧姆可**鐵能免生銹因按格致之理而溶鑄者也其雜質均摒棄

凡鉄質之面既有不同故生銹之處亦有多少故凡鑄鐵具務須厚薄均勻寬鬆合度

本廠開設美國哇哈哇省

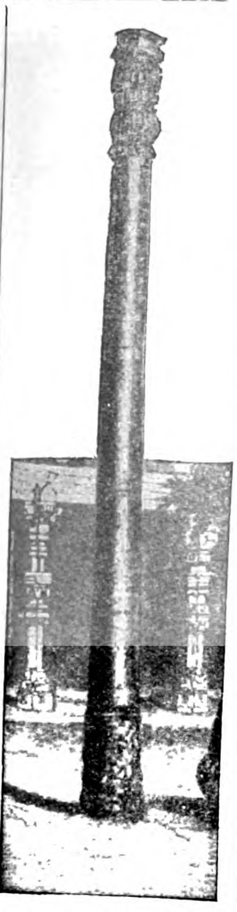
密特兒登電報用奧姆可三字

**欲索取詳細目錄可將英文告白之下面角紙裁下送來可也**

英國經理倫敦馬鋭公司　小呂宋經理非列賓　大西洋海灣太平洋公司

ARMCO IRON

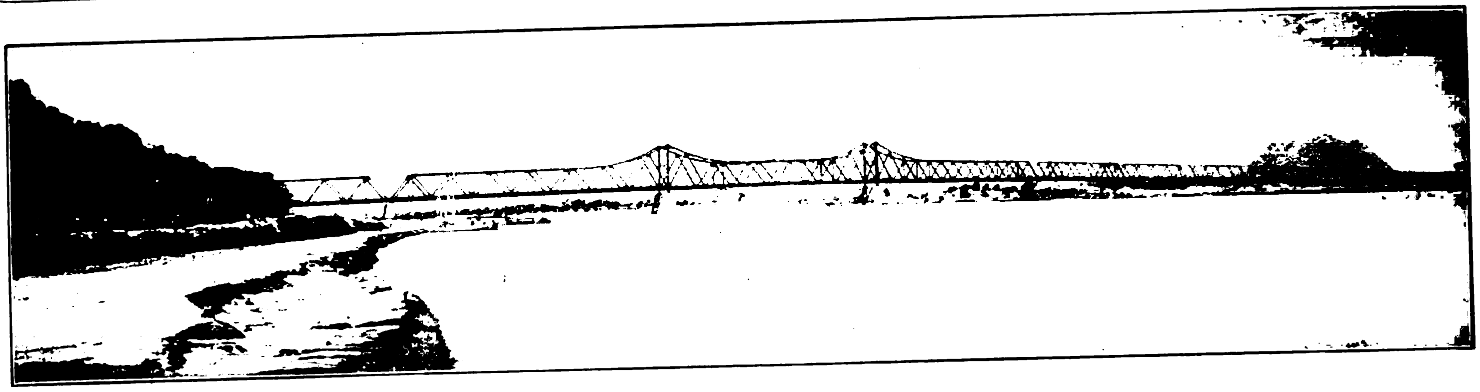
屋頂及屋傍引傳電氣之奧姆可縐紋鐵件



此圖乃印度國特而希之大鐵柱建於紀元前九百年爲純鐵所鑄之柱

奧姆可縐紋鐵溝大道鐵路陰溝最適用貨眞耐用欲知目錄請來信索取可也

# 津浦鐵路



## 津浦鐵路局改訂特別通車時刻廣告

本路特別通車上下開到時刻現經改訂與京奉膠濟滬甯等路客車上下銜接自本年十二月一日實行玆將改訂時刻暨各路銜接時刻開列如左

### 下行車

京奉路由瀋陽來之通車星期六日上午十鐘三十五分到天津東站

本路特別通車星期六日上午十一鐘二十分由天津東站開

京奉路由北京來之快車每日上午十一鐘二十五分到天津總站

本路特別通車星期六日上午十一鐘四十八分由天津總站開

膠濟路由青島來之快車每日下午五鐘五十九分到濟南

本路特別通車星期六日下午八鐘十二分由濟南開星期日下午一鐘十三分到浦口

滬甯路開往上海之快車星期日下午二鐘三十五分由南京開是日下午八鐘二十分到上海

### 上行車

滬甯路快車星期一日上午七鐘十分由上海開十二鐘三十分到南京

本路特別通車星期一日下午一鐘四十五分由浦口開星期二日上午六鐘四十分到濟南

膠濟路開往青島之快車每日上午八鐘由濟南開

本路特別通車星期二日下午二鐘三十三分到天津總站二鐘五十三分到天津東站

京奉路開往北京之快車每日下午三鐘四十五分由天津東站開其開往瀋陽之通車星期三日上午一鐘二十五分由天津東站開

### 特別注意

客商星期六日由京來津換乘本路特別通車南行者務請在總站過車勿到東站以免趕車不及

再客商星期六日上午八鐘三十分由北京起程星期日下午八鐘二十分即到上海其由上海北行者星期一日上午七鐘十分起程星期二日下午六鐘五十五分即到北京每次需時不足三十六鐘洵屬最捷之徑順此附告

Chinese Government Railways—Tientsin-Pukow Line

Hongkong & Whampoa Dock Co., Ltd.

## 香港黃埔船澳有限公司廣告

本公司承接製造各種機器鐵路火車橋梁河海明暗輪船拖船淺水火船載客運貨大小快捷毛打輪船舉凡一切水陸起重器機爐鑊鎔鑄銅鐵器具電鍍等等工程並常有大單銅鐵螺絲角鐵鋼板鐵板等料躉賣加以本公司置有大石澳六所旱排二座以便大小船艦入澳之用洵鉅製也

諸君光顧凡有船隻裝修無論大小工程莫不應期完備庶不妄費時日又且工精料美價亦相宜如蒙惠顧請問總司理人 R. M. DYER可也

茲將各澳地址尺寸開列於後

| 澳名 | 澳底長 | 澳口闊 | 水深 |
|---|---|---|---|
| 九龍第一號澳 | 七百尺 | 面八十六尺 底七十尺 | 三十尺 |
| 九龍第二號澳 | 三百七十一尺 | 七十四尺 | 十八尺六寸 |
| 九龍第三號澳 | 二百六十四尺 | 四十九尺三寸 | 十四尺 |
| 九龍第一號旱排 | 二百四十尺 | 六十尺 | 十四尺 |
| 九龍第二號旱排 | 二百二十尺 | 六十尺 | 十二尺 |
| 深水浦澳 | 四百六十六尺 | 八十五尺六寸 | 二十尺 |
| 香港仔第一號澳 | 四百三十尺 | 八十四尺 | 二十三尺 |
| 香港仔第二號澳 | 三百三十三尺 | 六十四尺 | 十六尺 |

本公司通電處乃用 MANIFESTO HONGKONG

香港寫字樓電話第二十號

本廠寫字樓電話第十三號K

呂宋代理處 FINDLAY & CO., MANILA, P. I.

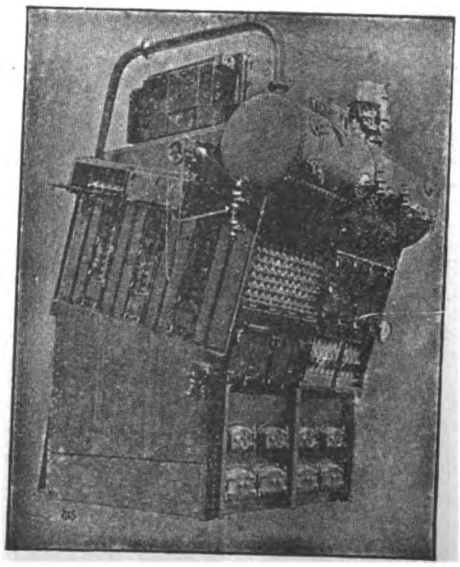


## 拔柏葛魏閣司有限公司

Babcock & Wilcox, Ltd.

## 製造特別水筒鍋鑪

本公司陸地所用之鍋爐與加增熱力機器及最新自行燃煤之帶鍊機器係屬相連用之於電燈紡織麵粉造紙織呢兵工造幣礦務水泥自來水等廠最爲合宜



航海用之汽鍋圖

本公司專造加增熱力機器自行燃煤之帶鍊機器蓄熱機器電力起重機器起卸煤之機器鋼質烟囱及輪船軍艦所用之鍋爐等

公司之中國總辦事處在上海四川路一百零三號

製造廠設在英德法美等國


津浦鐵路局改訂特別通車時刻廣告

本路特別通車上下開到時刻現經改訂與京奉膠濟滬甯等路客車上下

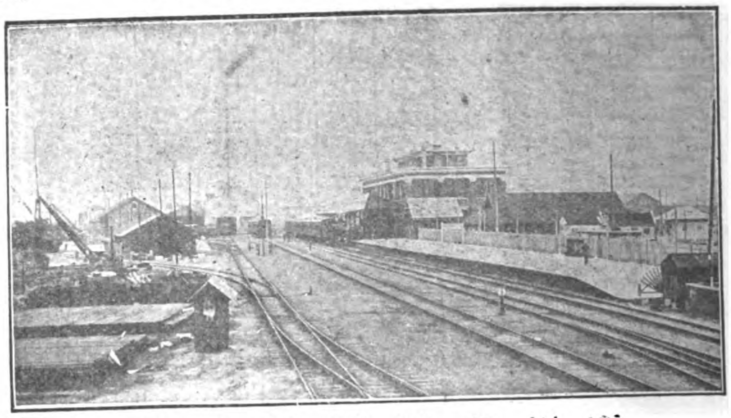
銜接自本年十二月一日實行茲將改訂時刻暨各行[illegible]

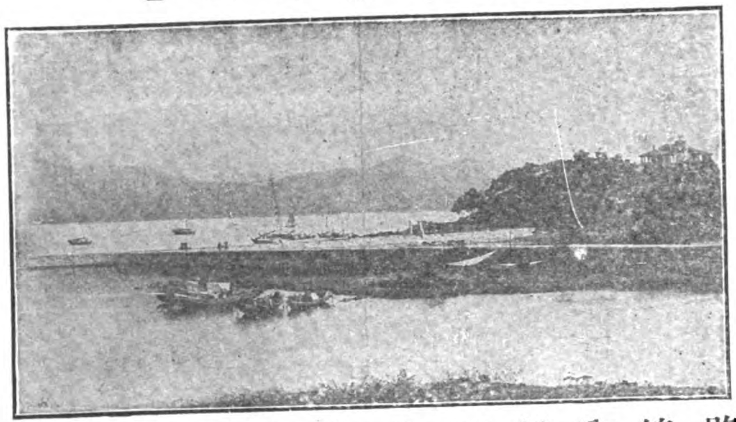
# 廣九鐵路

下列 乃華 段圖 景該 段八 十九 英里

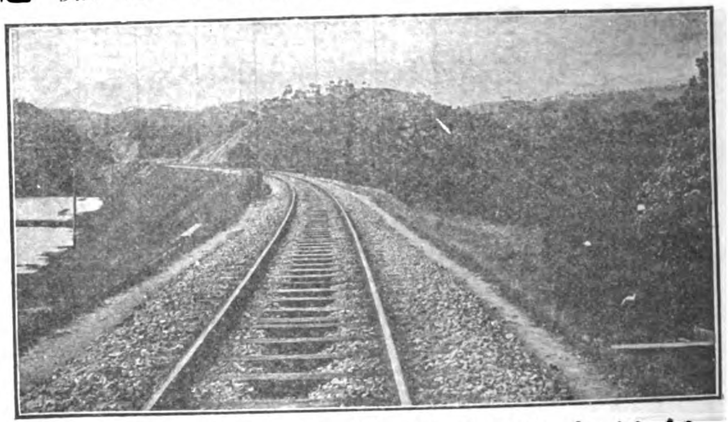
Canton-Kowloon Railway

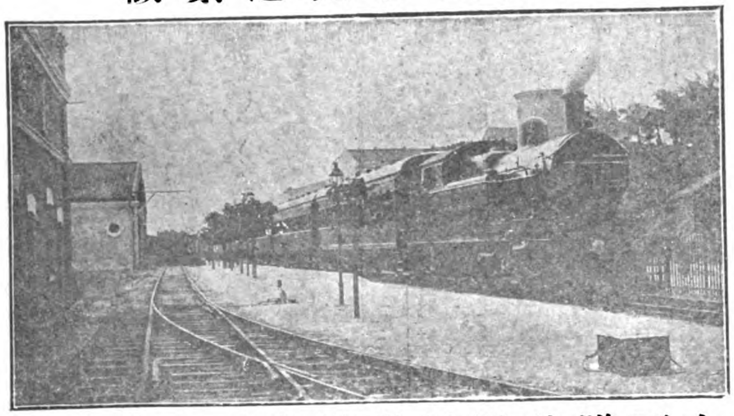
下列 乃英 段圖 景該 段二 十二 英里



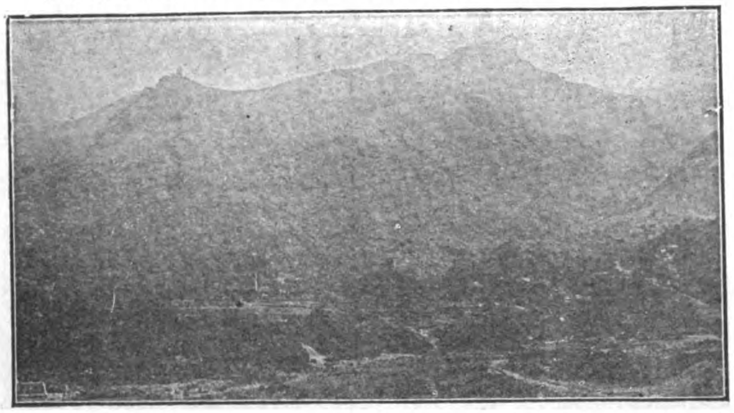


廣州香港間最捷最廉之路線兼所經各處之景緻

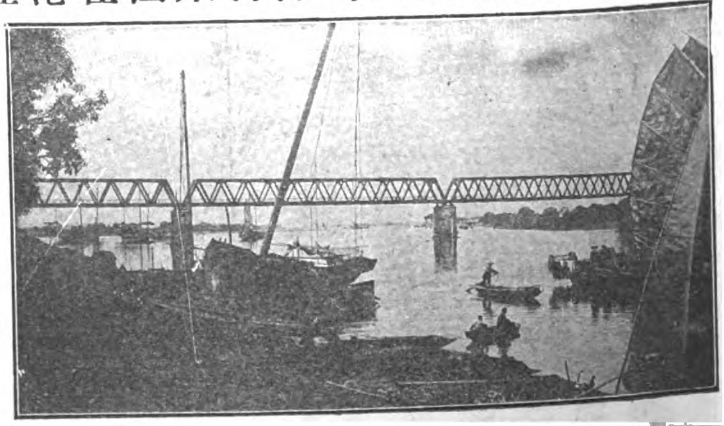


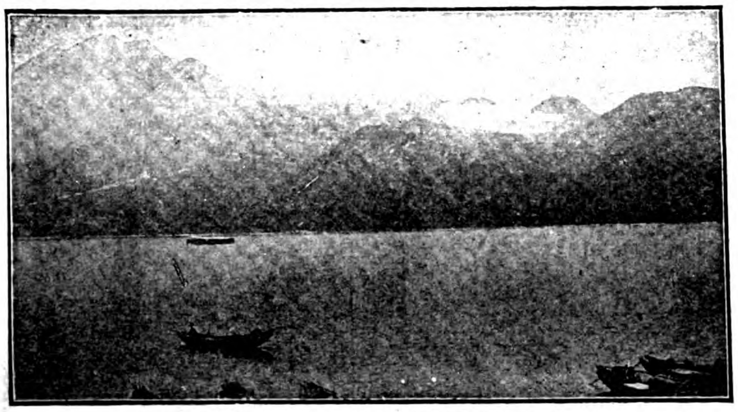


每日省港有直通快車試次來往並有西膳茶點以備搭客不時之需



富商遊客搭快車可即日來回在港在省各有四點餘鐘之久儘可從容專辦





謹將本年夏天時刻表開列於下

香港開
上午六點三十五分快車
上午十一點十五分
上午十二點五十五分

廣東到
上午十點四十分快車
下午六點十分
上午四點三十分快車

廣東開
下午七點快車
上午八點三十分
上午十二點快車
下午四點二十分快車

香港到
上午十點三十分快車
下午四點十四分
下午三點五十三分快車
下午七點五十二分快車

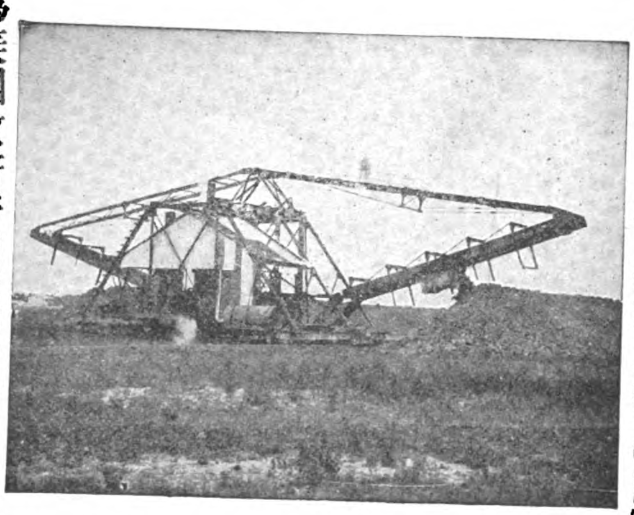
並備有專車租賃車費從廉如欲知詳細者請看告白或問省城及香港鐵路總局可也

# 奧司丁挖渠機器公司露佈

F. C. Austin Drainage Excavator Co.

本公司製造各種機器如溉田機器鑿溝機器且一經購定即可速即裝運出口今本公司特登廣告以告諸包工家營造師以及政府中官吏因本公司已將各機器早經裝就定單一到即可運往印度緬甸錫蘭暹羅海峽殖民地埃及中國日本及遠東諸各處水脚保險均可包理

奧司丁鑿溝機器樣式及大小種類極多且各種地土均可挖鑿其兜能自傾外出其機器之料作均鋼所鑄奧司丁掘土機器能自由運動地之深淺闊狹斜側均適宜合用其兜能自傾外出



圖中之奧司丁連結挖掘機器為美國政府所用以開巴拿馬運河之用每一連機每點鐘可挖掘六十八立方碼奧司丁公司所出之機器通行於美國英國坎拿大奧司達利亞南亞非利加日本俄羅斯意大利巴西及埃其丁民主國且均由各該政府定購

若欲知詳細章程者可函達上海遠東報主筆先生可也

本公司開設美國芝加哥省

# 克立討耳公司廣告

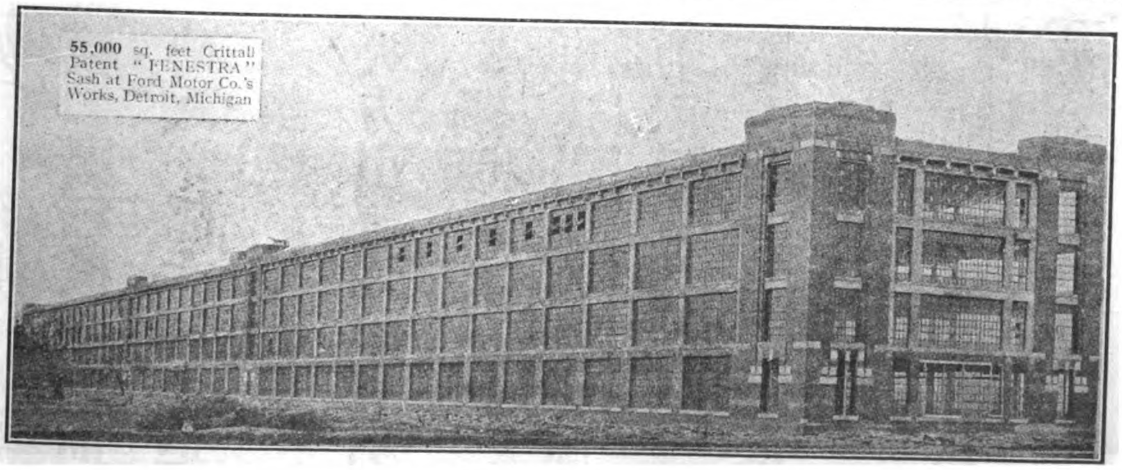
CRITTALL

本公司包造各種房屋遐邇馳名工廠開設英國

日本經理　東京麴町區有樂町十一町目

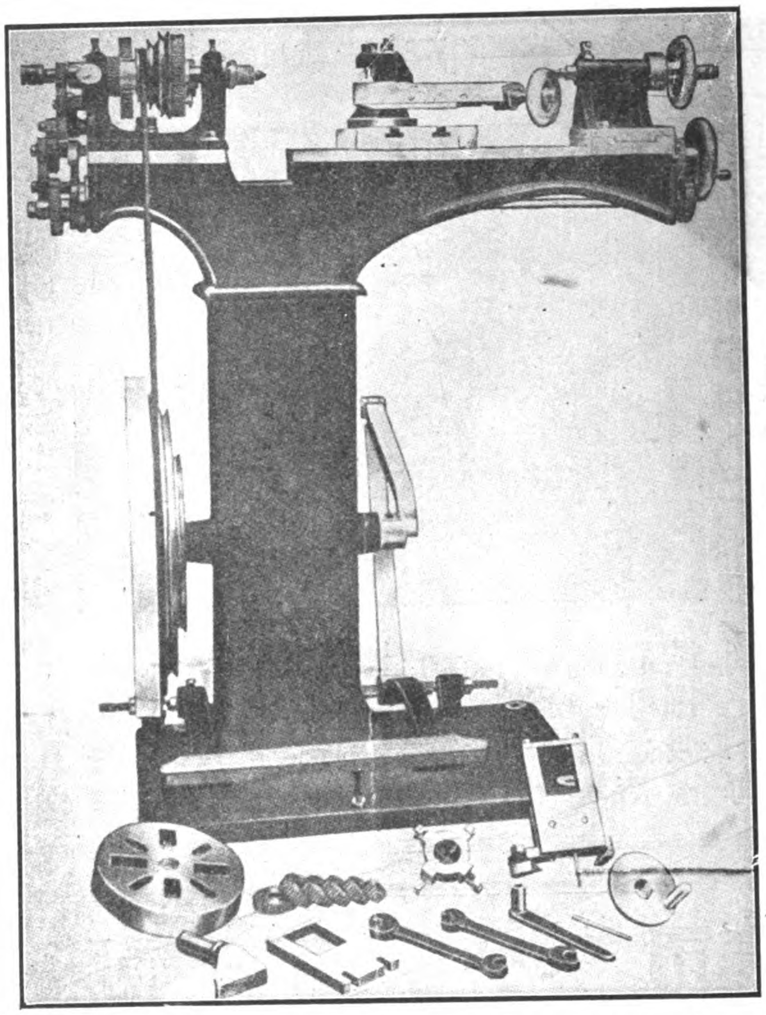
中國經理　上海　漢口　天津

上海南京路十三號盈生洋行




此圖為美國米西干省製造汽車之工廠為本公司所築之鐵窗計長五萬五千方尺

# 怡和洋行機器房廣告



本行分設滬濱數十餘載專辦各種機器如下　鐵軌　車輪　車頭　紡織機　磨麫機　搾油機　碾米機　磚瓦　鋸木牀　造紙機　印書機　鎗礮　製革機　電燈　餅乾　火力引擎　煤氣引擎　火油引擎　鍋爐　發電機　開礦吸水機及馬達引擎等並常備現貨如下

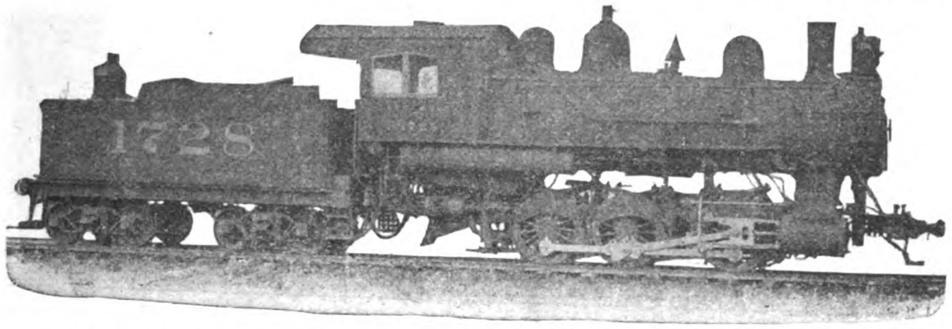
火力引擎　煤氣引擎　立式鍋爐　吸水機　手搖吸水機　大小車床　修機應用各件　淨茶機紙百　配更　皮帶等其餘一切零件不及詳載倘蒙賜顧無不歡迎定價亦格外克己請至圓明園路本帳房接洽電話一零九六

Jardine, Matheson & Co.

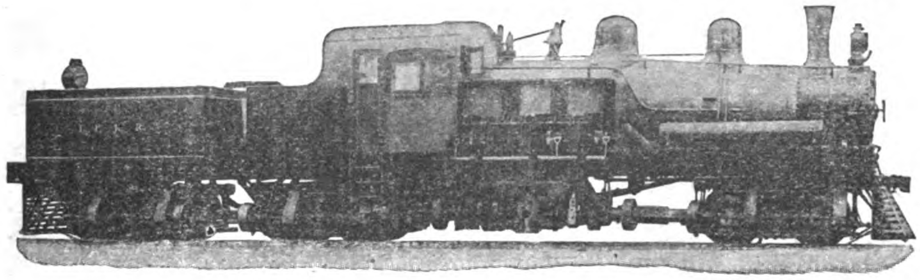
# 賚瑪火車公司

Lima Locomotive Corporation

本公司專造各種火車頭式樣玲瓏質料堅固或用橫桿式或用齒輪式務求輕便靈捷至速率及拖重力尤非尋常者所可比擬




此圖爲本公司代美國南部鐵路所造之十五輛二十寸暨二十六寸轉轍式之火車圖樣



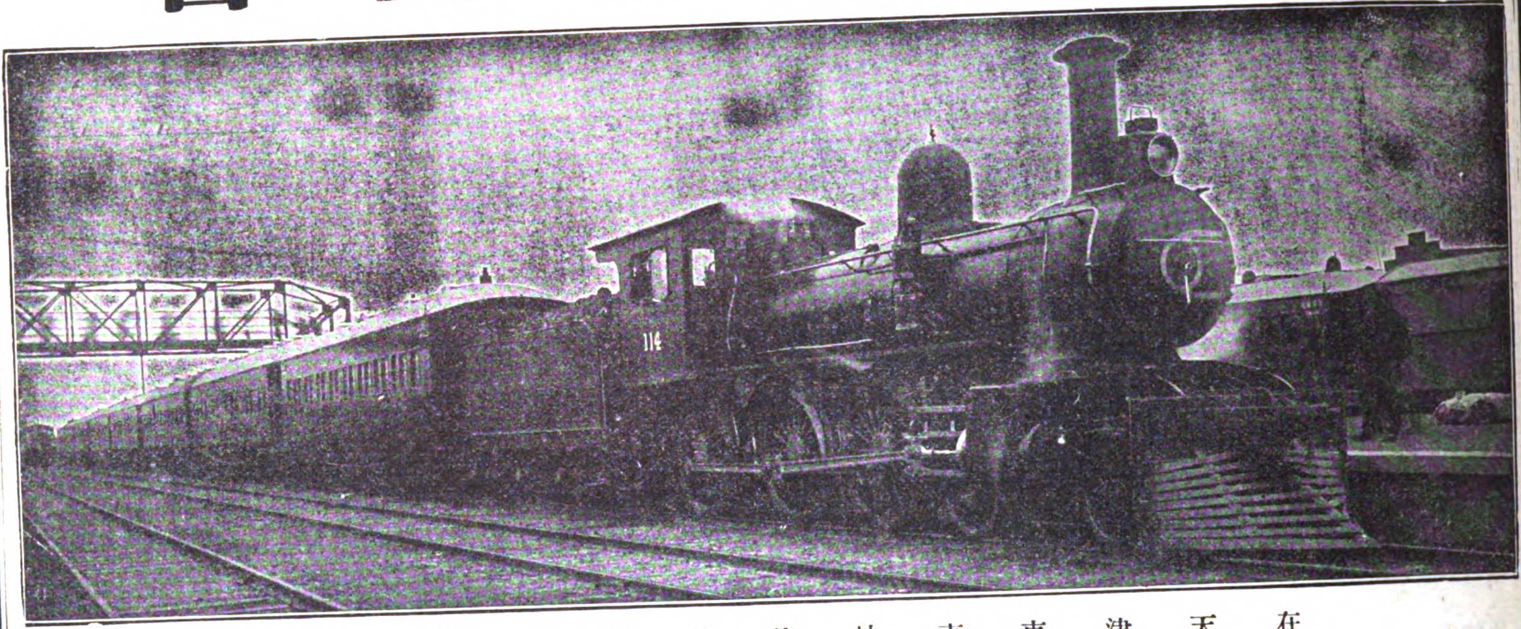
此圖爲本公司代中國京張鐵路所造三輛齒輪式一百噸重之火車圖樣

製造火車不獨求其堅固而且取其靈活本公司各種出品久爲東西各國所推許近年更大加擴張所聘工師均爲歐美著名專家所用機器亦均係新式以故所造各種車頭既能堅固復靈活而穩妥不惟於康莊平坦之大軌道能行止自如即以行駛於山嶺曲徑之小軌道亦能旋轉如意且特製齒輪式之拖重車其重力能拖十噸至一百五十噸其餘花樣繁多均載B字樣本中欲閱者來函索取當卽寄奉

總發行美國哇亥俄省賚瑪城

分售處中國 香港 上海 廣東 天津 新旗昌洋行

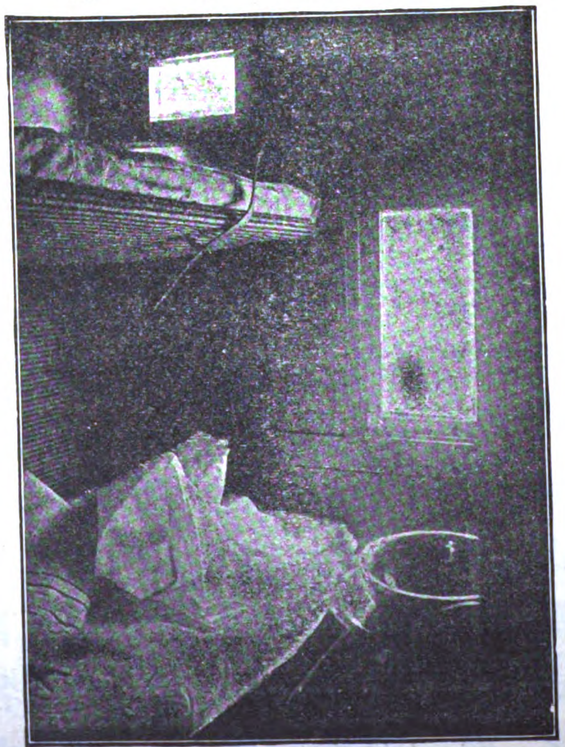
# 京奉鐵路廣告



在天津東車站停放之床位通車

啓者本路路綫係與附近各路互相聯絡東則接連南滿路可達歐洲南則接連京漢路可達長江一帶商埠由京漢路中心點并可達至正太路之太原府道清路之開封府汴洛路之河南府北則與京張路綫相連可達至萬里長城四面貫通無遠弗屆本路綫所經名勝如北京

北京車站



通車頭等睡房

Chinese Government Railways of North China

瀋陽之皇陵殿宇天津之北方商務總匯唐山之工廠礦務山海關之萬里長城牛莊之南滿洲商埠俱屬繁盛之區足供遊覽至京瀋直達通車每星期來往一次備有飯車睡房精潔適意以便行旅而廣招徠倘蒙

光顧毋任歡迎之至特此佈告

# 美國紐約克美孚油行廣告

The Standard Oil Company of New York

本行所出之**鎖可聶瀝青油**爲生瀝青油由格致術所製成如欲引長其效用黏合其物質柔固其原料以及天氣溫熱度之容納無不隨心所願

**鎖可聶瀝青油**可用於任何堅硬之物不加他種之油亦合於用

下列之各處均可用此**鎖可聶瀝青油**

建築永久之道路　屋頂水路工廠地板拍球圜場　水涵管洞

用於鐵路車結處電桿電柱等處　包鋼質建築物及溝管等物

**鎖可聶瀝青油**　可用於法侖表熱二百二十一度之融點故於最熱之天氣亦合用適度也**鎖可聶瀝青油**非試用之物乃合衆國多年實用之油功效最著之物品也

欲知詳細請函達上海五馬路十一十二號

美國鈕約克美孚油行光油部可也

# Roofing Malthoid

麻鐸屋頂氈已爲上等工程師及繪圖師詳說之且爲上等工匠用在遠東一切奇異房屋之中

麻鐸屋頂氈已試用多次實可認爲屋頂氈之標準

安置此項氈時須照本公司章程鋪釘方保無虞

如要說明書及樣子請向最近之代理店取閱可也

中國代理處

上海　怡泰洋行

天津　仁記洋行

漢口　太平洋行

香港廣東　瑞記洋行

## 勒克洛炸藥

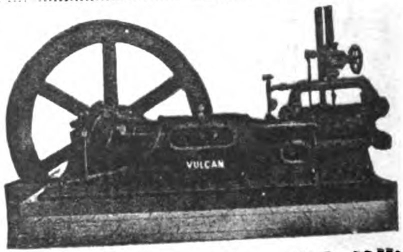
又名勒辣司丁泡特係開山開礦用**最大爆力之炸藥**其質共有二類一硬質一流質兩種未參合時分裝二處決無炸裂之患并無須多費存放在火藥棧倉內祇置放乾爽地方不論何處均極相宜此藥參合後**較之別種炸藥更爲穩當**藥粉裝法用一布捲筒對徑六分或至二寸長六寸半或至八寸爲度即可應用製造廠林洛泡特公司在美國紐約華爾街一百零六號

Rendrock Powder Co.

美國舊金山

## 瓦爾根製冰機器廠

Vulcan Iron Works




圖爲製冰機之一種花色繁多不及備載

本廠專造各式製冰機器運銷各地蒙購辦諸君謬加推譽稱爲靈便合用本廠自當精益求精以期仰副　雅意現在製備各種新式機器或大或小花樣俱全如欲取閱樣本函索即奉特此佈告

電碼 "Vulcan" San Francisco

# 上海耶松機器船廠有限公司

The Shanghai Dock & Engineering Co., Ltd.

電話號碼 Telephone Number

大班處 七五七號
書記處 一八七號
總辦處 六七八號
幫辦處 一八八七號
總寫字間 七號
浦東寫字間 二三號
浦東機器間 一一·二七號

總公司

在百老匯路廿六號
德律風第七號

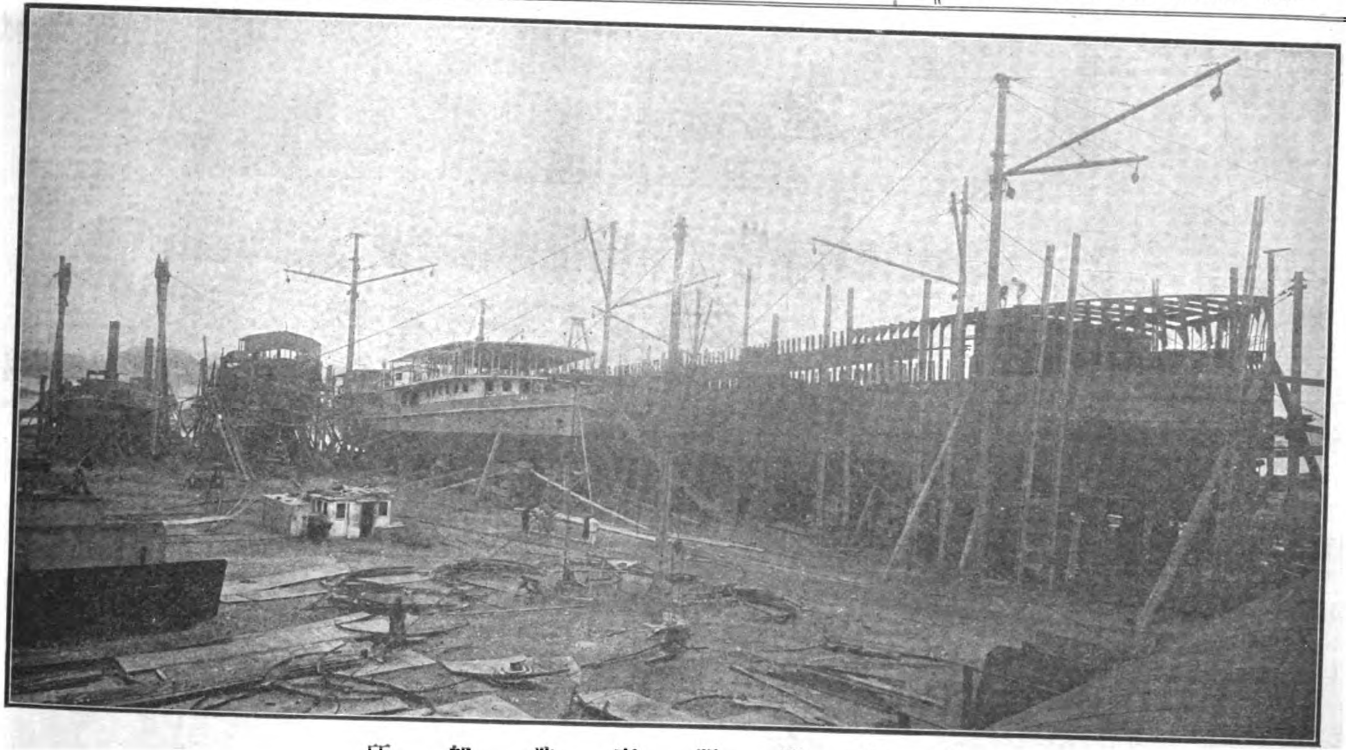
Address.

電報行名 Telegraphic Address and Code

"FARNHAM"

A. B. C. 4th and 5th Editions
A.-1 Watkin's, Scott's
Western Union
and
Engineering.

密碼本用



祥生機器廠造船所

本廠所造輪船模型英一千九百零四年在美國聖魯易賽會得賞金牌

The Model exhibited at St. Louis Exposition and awarded the Gold Medal in 1904.

熱水汽管司卽丁火爐各種式樣俱全

All Kind of Steam Heating Institutions.

本廠共有船塢五處長自三百五十五尺至五百三十二尺船塢口闊自五十三尺至七十七尺深十六尺至廿四尺 本廠價格可稱東方第一低廉 本廠船塢工場共有基地四百四十八畝佔有水面一英里半之長 碼頭方船均全以便各輪船修理時可以靠傍小輪修理並可拖至岸上各船塢均備有起重吊機可受六十五噸之重物 各造船處及工場均裝用電燈並有活動吊機可吊六十噸重之物並有最新式機器應用物件機器間及工場均裝輕便鐵道 本廠備有水鬼多名撈船器具及吊機浮船一遇招呼隨時應命無論海船江輪明輪暗輪拖駁小輪機器駁船挖泥船吊機浮船以及碼頭方船等如蒙詢問價目無不從速答覆 各種修理及拆舊換新等本廠均可承接並能迅速從事 本廠並有船上岸上所用機器爐子開礦機抽水機以及各種機件電氣自來火火油司丁各種機器俱全如蒙賜顧請卽駕臨或函件接洽均當歡迎也

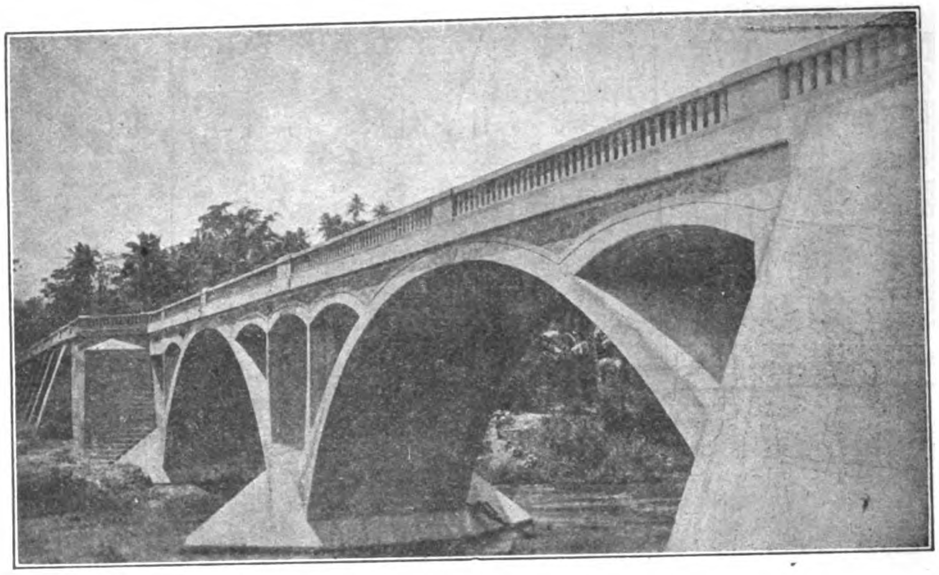
# 青洲英泥

Green Island Cement Company, Ltd.

燒青泥磚

大小明暗瓦溝

水斗等器



花階磚

大階磚

火爐磚及泥

亞路串扒拉波歷握橋用二千五百桶青洲英泥而建成

代理分銷處

架刺吉打　端拿摩利臣公司

新加坡　士滔片民

長口及漢口壹帶渣甸洋行

仰光　希活

孟米　士片拿公司

庇能　列公司

中國海岸及臺灣渣甸洋行

本行在別埠代理處

上海支行

日本支行

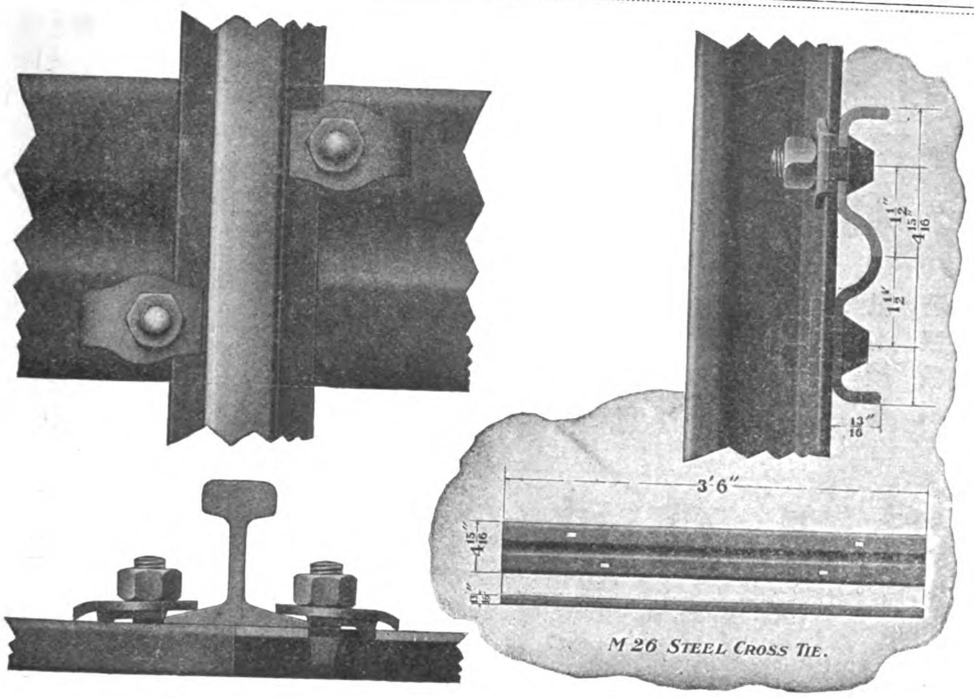
天津支行

非律賓羣島全權代辦人小呂宋威廉晏打臣公司

# 美國鋼鐵公司

上海黃浦灘第四號

電碼 Steelyard Shanghai




此圖表明本公司所造各種鐵軌及繫結鋼條輕便而且堅固

鋼鐵各物取其堅固尤取其靈活非徒以笨重爲可貴也本公司所造各種鐵道及機器等件幷鍋爐上應用之各式繫結鋼條既稱堅固復能靈活久爲全球所推許茲將自製鋼鐵諸品節錄於左

鐵軌　接軌鋼條　鋼節　鋼釘
鋼板　建築所用鐵柱　鐵條
鐵板　鐵管　各式角板　火車電車車輪　鑛穴中或油井內所用一切鋼鐵機器　各式輪軸
橋梗鎔鐵爐以及各種鐵甲板

以上所述特其大略其餘名目繁多不及備載　惠顧諸君請移玉至本公司面議可也

United States Steel Products Company

# 新旗昌洋行

本行佈設英京神戶廣州香港上海天津紐約等處專辦出入口貨代理船務及抽佣經理人

香港書信箱號數第壹百三十一號卑字
上海郵政局信箱第八十四號
各枝行掛號電報碼用旗昌二字

## 本行總理司公各列下

- 非律賓輪船有限公司
- 維新織造有限公司
- 廣州省城置地有限公司
- 永安人壽保險有限公司
- 中呂輪船有限公司
- 勢力電燈有限公司
- 青洲英坭有限公司
- 香港麻纜織造有限公司
- 均益按揭有限公司

## 代理各公司列下

- 厘拉仁士洋面保險有限公司
- 大洋海面保險有限公司
- 泗水海及火燭保險有限公司
- 英北及商務保險公司
- 羅天仁保險有限公司
- 煜舍燕梳有限公司
- 北美燕梳公司
- 上洋軟菓及紙料有限公司
- 美亞輪船公司
- 美滿航務公司
- 祁連航務有限公司
- 香港電車有限公司
- 楊子燕梳有限公司
- 地球洋面保險有限公司
- 大洋意外保險有限公司

## 上海英商新旗昌洋行機器處廣告

本行樓子房現設江西路六號電話三四八七號

本行經理各種機器如紡織碾米榨油磨麵造紙開礦墾荒抽水挖坭大小火輪全副引擎鍋爐及火車頭客車貨車鐵路材料並自來水一切物件其餘鋸木車鑽刨床各式大小引擎鍋爐及磨電機發動機煤氣引擎發煤氣機以及得律風電燈電氣應用一切另件等具色色俱全均係外洋著名廠家特別精造新式玲瓏堅固但各項名目繁多未便盡載倘承賜顧或蒙函詢當即竭誠詳細奉答價亦格外克己以廣招徠尚祈惠臨方知言之不虛也

## 在中國全權代表各公司列下

減隨路城火車工廠
澳地士依里威滔公司
波路深孖汽喉公司
拋亞瓦斯合股有限公司
拋亞不厘有限公司
李孖普鐵廠
倫深未褲及制花利有限公司
盧參士歷滔有限公司
船主琴實使順有限公司
所利雲機器公司
為拉列地有限公司
華臣製造公司
和蛙連毛滔工廠

裝鐵路燈工廠
壓活公司
占士科士打有限公司
占士捷邊士公司
立可父子公司
可夫文製造公司
贊鶴建臣父子有限公司
耳昔則臣父子有限公司
精建兄弟有限公司
奇布尼及則給士製造公司
廉孖車頭及機器公司
文寧麥士謂及摩公司
妙千斤壓不歷其滔公司

美國布魯亞公司
美國鋼線公司
大英靴路士比電線纜有限公司
班尼士製造公司
比厘路公司
表花盧不歷鞭公司
表花盧士派士厘公司
布律端父子公司
插父子鎖鑰與銀箱有限公司
地吐律滔路公司
的有限公司
贊的建臣公司
胡路扶公司

Shewan, Tomes & Company

# 美國鋼鐵公司

United States Steel Products Co.

本公司自剏設以來歷有年所所售各種鋼鐵品久蒙交口稱譽無煩瑣述惟近來實業發達各物之需用鋼鐵者或大或小品類甚夥苟祇備其重大者而將各式細小者付之缺如則必不能應購者之用本公司花樣繁多大而至於軌輪機軸小而至於日用雜物之微凡屬鋼鐵品無不色色俱全以備 貴客隨意購用至貨物之精良價目之低廉尤爲得未曾有 賜顧者幸垂鑒焉此佈

## 鋼鐵軌

自最重之火車軌至各種輕便鐵道及開礦運木或電車等所用

## 建築品

鋼節鐵槽角鐵鐵鋼鋼板鐵板礦中或油井內所用鋼鐵物件以及各種車輪

## 輪軸

火車汽機及電車等所用

## 翻沙機

機器及各種附屬品

## 鐵箍及鐵皮

用以箍桶束棉花捆羊毛或皮包等物

## 鋼板

用以造船造汽鍋水鍋等件者

## 馬口鐵

可製各式雜用物或鍋爐等件

其餘如馬脚鐵銅絲生鐵硬煤煙煤等名目繁多不及備載

上海黃浦灘第四號　電碼 "Steelyard" Shanghai

# 美國派愛而車頭電燈公司告白

Pyle-National Electric Headlight Co.

## 下圖表明用二萬二千支光派愛而車頭電燈之功用

此圖的係攝自美國鐵路車站其攝影之地點相去

車頭有半英里之遙足徵派愛而燈之功用非小

派愛而燈能發有力之光亮可使車頭司機者之視線能達半里之外且使其能瞭視一切可避危機而派愛而燈之功用已略言之上矣總之人之樂用此種燈因知其美無不臻也

# 西方電氣公司廣告

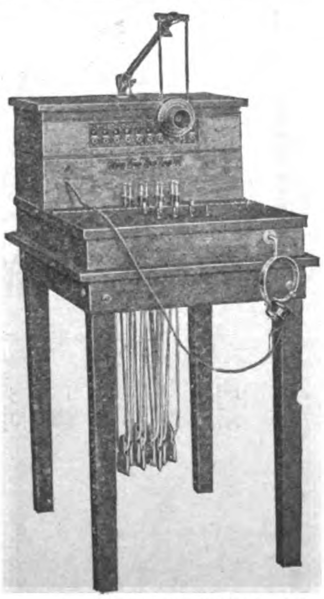
The Western Electric Co.

第一三一七號磁氣發電機德律風

若欲研究貴處德律風機器是否傳聲清淅必須先看所用之各種器俱有否 活司得商標之牌號是否為本公司所完全製造者本公司所製電氣器俱完美可靠全球馳名且為世界最老最大之製造各種電氣器俱之製造廠

且德律各種機件亦為本公司製造物品之一小自私家之德律風起大而至大城內全體之德律風如配電石板裝德律風家所用之配件防護俱線纜線件手器隔電俱等物件

中國經理處上海西方電氣公司
小呂宋經理處愛令加格令加洋行
日本經理東京日本電氣公司



第一八〇〇號分段配電石板

美

此圖的係徑自美國舊
車站共攝影之地點相去

# 正太鐵路客車時刻表

The Cheng-Tai Railway

## 上行各車

| 站名 | 價目 頭等 元 | 頭等 角 | 二等 元 | 二等 角 | 三等 元 | 三等 角 | 慢車 開 點 | 慢車 開 分 | 客貨車 開 點 | 客貨車 開 分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 石家莊 | | | | | | | 七 | 〇三 | 七 | 三十 |
| 大郭村 | | 五 | | 三 | | 二 | 七 | 十六 | 七 | 四五 |
| 獲鹿縣 | | 九 | | 五 | | 三 | 七 | 三二 | 八 | 〇三 |
| 頭泉 | 一 | 二 | | 七 | | 四 | 七 | 五一 | 八 | 二三 |
| 白王莊 | 一 | 五 | | 八 | | 五 | 八 | 十一 | 八 | 四六 |
| 五里鋪 | 一 | 七 | 一 | | | 六 | 八 | 二一 | 八 | 五八 |
| 微水 | 二 | 一 | 一 | 一 | | 七 | 八 | 三六 | 九 | 十五 |
| 南橫口 | 二 | 三 | 一 | 三 | | 八 | 八 | 四九 | 九 | 二九 |
| 南張村 | 二 | 五 | 一 | 四 | | 九 | 九 | 〇二 | 九 | 四三 |
| 井陘縣 | 二 | 八 | 一 | 五 | 一 | | 九 | 二五 | 十 | 十五 |
| 北峪 | 三 | 一 | 一 | 七 | 一 | 一 | 九 | 三六 | 十 | 四一 |
| 南峪 | 三 | 三 | 一 | 八 | 一 | 一 | 九 | 四七 | 十 | 五一 |
| 孃子關 | 三 | 六 | 二 | | 一 | 二 | 十 | 十八 | 十一 | 十七 |
| 程家隴底 | 四 | | 二 | 二 | 一 | 四 | 十 | 三四 | 十一 | 三四 |
| 下盤石 | 四 | 五 | 二 | 四 | 一 | 五 | 十 | 五十 | 十一 | 五二 |
| 巖會 | 四 | 八 | 二 | 六 | 一 | 六 | 十一 | 〇四 | 十二 | 十四 |
| 亂流 | 五 | 三 | 二 | 九 | 一 | 八 | 十一 | 二四 | 十二 | 三六 |
| 白羊豎 | 五 | 六 | 三 | 一 | 一 | 九 | 十一 | 三八 | 十二 | 五二 |
| 陽泉 | 五 | 八 | 三 | 二 | 二 | | 十二 | 三七 | 十三 | 二十 |
| 賽魚 | 六 | 二 | 三 | 四 | 二 | 一 | 十二 | 五三 | 十三 | 三七 |
| 坡頭 | 六 | 五 | 三 | 六 | 二 | 二 | 十三 | 〇九 | 十三 | 五四 |
| 測石驛 | 六 | 八 | 三 | 七 | 二 | 三 | 十三 | 三二 | 十四 | 十六 |
| 芹泉 | 七 | 三 | 四 | | 二 | 五 | 十三 | 五六 | 十四 | 四十 |
| 壽陽縣 | 七 | 八 | 四 | 二 | 二 | 六 | 十四 | 十九 | 十五 | 十三 |
| 郭村 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 三二 | 十五 | 二九 |
| 上湖 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 四七 | 十五 | 四六 |
| 盧家莊 | 九 | | 四 | 九 | 三 | | 十五 | 〇三 | 十六 | 十 |
| 段廷 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 十八 | 十六 | 二七 |
| 東趙村 | 九 | 八 | 五 | 三 | 三 | 三 | 十五 | 三四 | 十六 | 四六 |
| 北合流 | 十 | 二 | 五 | 五 | 三 | 四 | 十五 | 四七 | 十七 | 〇三 |
| 榆次縣 | 十 | 五 | 五 | 七 | 三 | 五 | 十六 | 〇九 | 十七 | 三三 |
| 鳴李 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二一 | 十七 | 四七 |
| 北營 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 三三 | 十八 | 〇一 |
| 太原府 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 四五 | 十八(到) | 十五 |

## 下行各車

| 站名 | 價目 頭等 元 | 頭等 角 | 二等 元 | 二等 角 | 三等 元 | 三等 角 | 慢車 開 點 | 慢車 開 分 | 客貨車 開 點 | 客貨車 開 分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 太原府 | | | | | | | 七 | 五三 | 八 | 〇六 |
| 北營 | | 五 | | 三 | | 二 | 八 | 〇七 | 八 | 二一 |
| 鳴李 | | 八 | | 五 | | 三 | 八 | 十九 | 八 | 三四 |
| 榆次縣 | 一 | 二 | | 七 | | 四 | 八 | 四五 | 八 | 五九 |
| 北合流 | 一 | 六 | | 九 | | 六 | 八 | 五九 | 九 | 十四 |
| 東趙村 | 二 | | 一 | 一 | | 七 | 九 | 十三 | 九 | 二九 |
| 段廷 | 二 | 四 | 一 | 三 | | 八 | 九 | 二九 | 九 | 四七 |
| 盧家莊 | 二 | 八 | 一 | 五 | 一 | | 九 | 四五 | 十 | 〇七 |
| 上湖 | 三 | 二 | 一 | 八 | 一 | 一 | 十 | 〇三 | 十 | 二六 |
| 郭村 | 三 | 六 | 二 | | 一 | 二 | 十 | 十九 | 十 | 四三 |
| 壽陽縣 | 四 | | 二 | 二 | 一 | 四 | 十 | 三七 | 十一 | 〇七 |
| 芹泉 | 四 | 四 | 二 | 四 | 一 | 五 | 十 | 五三 | 十一 | 二四 |
| 測石驛 | 四 | 九 | 二 | 七 | 一 | 七 | 十一 | 十三 | 十一 | 四七 |
| 坡頭 | 五 | 二 | 二 | 八 | 一 | 八 | 十一 | 二五 | 十二 | 〇一 |
| 賽魚 | 五 | 六 | 三 | | 一 | 九 | 十一 | 三八 | 十二 | 十九 |
| 陽泉 | 五 | 九 | 三 | 二 | 二 | | 十二 | 三九 | 十三 | 三五 |
| 白羊豎 | 六 | 一 | 三 | 三 | 二 | 一 | 十二 | 五[illegible] | 十三 | 五一 |
| 亂流 | 六 | 四 | 三 | 五 | 二 | 二 | 十三 | 〇四 | 十四 | 〇八 |
| 巖會 | 七 | | 三 | 八 | 二 | 四 | 十三 | 二四 | 十四 | 三七 |
| 下盤石 | 七 | 三 | 四 | | 二 | 五 | 十三 | 四十 | 十四 | 五三 |
| 程家隴底 | 七 | 七 | 四 | 二 | 二 | 六 | 十三 | 五七 | 十五 | 十二 |
| 孃子關 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 十七 | 十五 | 四五 |
| 南峪 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 三三 | 十六 | 〇一 |
| 北峪 | 八 | 七 | 四 | 七 | 二 | 九 | 十四 | 四二 | 十六 | 十二 |
| 井陘縣 | 九 | | 四 | 九 | 三 | | 十四 | 五八 | 十六 | 五五 |
| 南張村 | 九 | 二 | 五 | | 三 | 一 | 十五 | 十 | 十七 | 〇九 |
| 南橫口 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 二一 | 十七 | 二一 |
| 微水 | 九 | 七 | 五 | 三 | 三 | 二 | 十五 | 三三 | 十七 | 三五 |
| 五里鋪 | 十 | | 五 | 四 | 三 | 四 | 十五 | 四九 | 十七 | 五五 |
| 白王莊 | 十 | 二 | 五 | 六 | 三 | 四 | 十五 | 五八 | 十八 | 〇六 |
| 頭泉 | 十 | 六 | 五 | 七 | 三 | 六 | 十六 | 十三 | 十八 | 二三 |
| 獲鹿縣 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二八 | 十八 | 五七 |
| 大郭村 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 四十 | 十八 | 五七 |
| 石家莊 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 五一 | 十九(到) | 〇十 |

# 英國康模造車公司

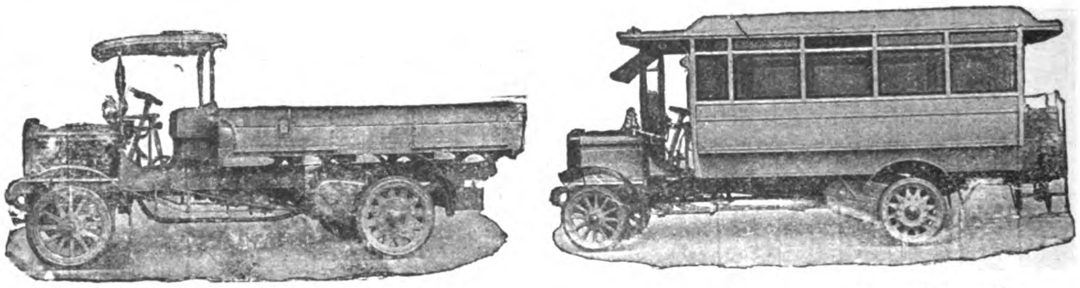
Commercial Cars, Ltd., Luton, England

格言曰觀運輸機關之隆替足覘以國家之盛衰本公司專造工藝界及公家所用車輛工料堅實精良無比取價低廉如貨車灑水車救火車客車等均可按式定造必能合意所裝油機燃燒煤油或汽油在東方應用最爲便適本公司總廠在英國勒頓城內英國康模造車公司謹啟

康模牌 車輛

"COMMER" CAR

REGD TRADE MARK



此種車輛裝有汽油機大小分爲十四號載重一噸至七噸載客十位至三十四位機器有二十至一百馬力

# 曲模脫製造公司

Trimont Manufacturing Co.

曲模牌螺旋管鉗早經爲使用者所歡迎今又發明新件名護螺具加於鉗上其大小不同爲鋼質所造不易損壞

護螺蛳具之功効能使螺蛳運動工作時不致受意外之不測且能使所用之器具有百分中之二十五分之效用

曲模螺旋管鉗備有木柄者其大小有六寸八寸十寸十四寸共四種備有鋼柄者其大小自六寸至四十八寸

曲模螺旋管鉗內之各附屬物均可互換調用柄中所用之齒若用壞可更換新製之齒使鉗仍可保用

若欲知詳細請來函索取本公司之第二百二十三號目錄書可也

本公司開設鮑思頓勞克司白來

# 勒特烏文公司

Owen Bros.

"ROSPHALTIC"

REGD. No. 336682

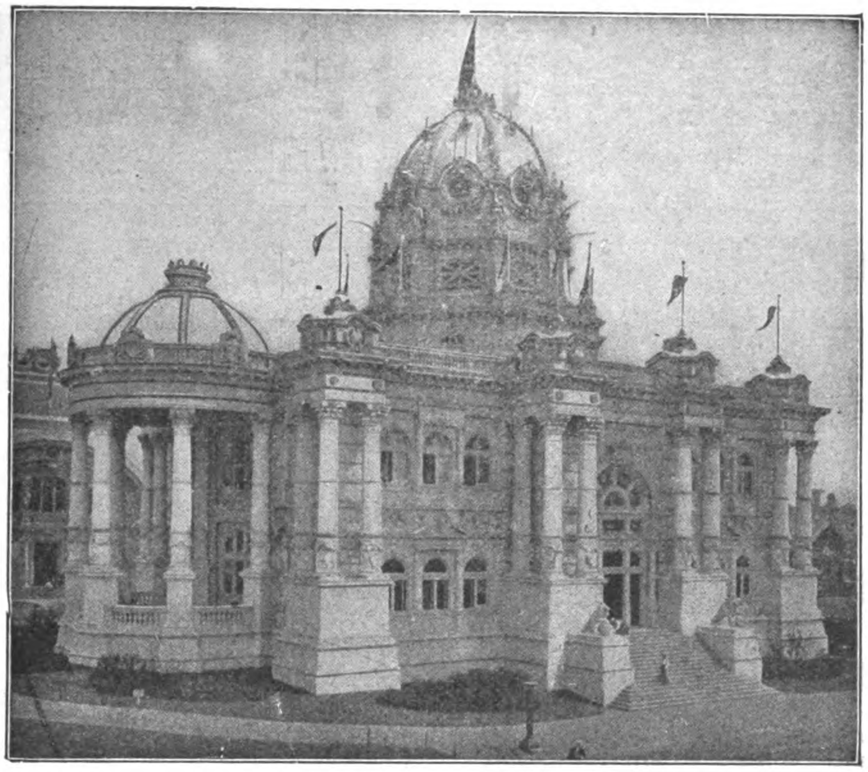
HULL

羅司法鐵漆敷於鋼絲鐵柱之上能永免鐵銹濕氣電氣均不能侵入天氣寒暑隨鐵漲縮此油質地純淨永保無患

勒特烏文公司

總行在英國黑耳城

上海怡和洋行總理



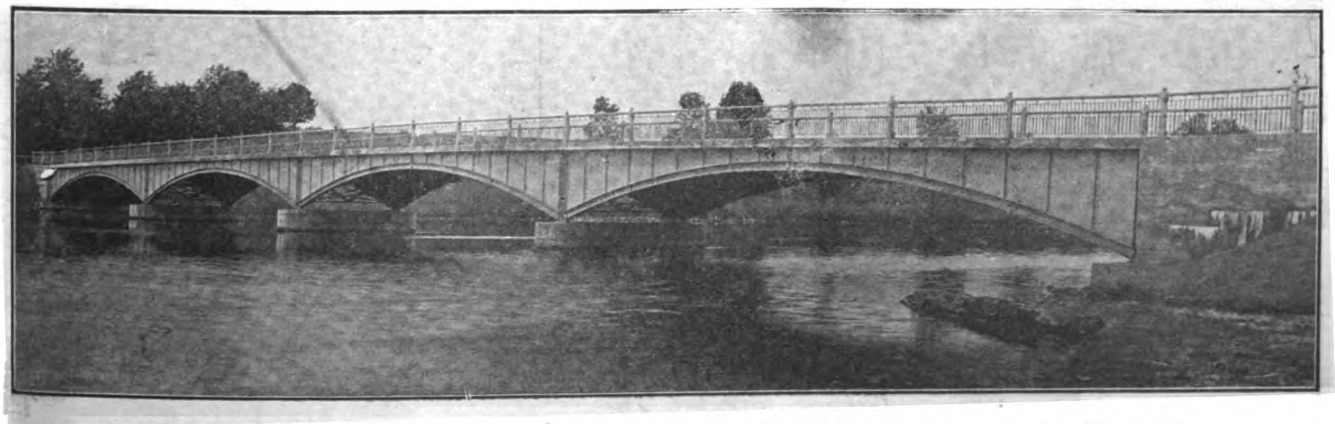
此爲巴蘭夢羅和平宮其工程之堅固久爲世界所稱譽然建築時需用鋼鐵至四百餘噸之鉅皆本公司所供給特攝之以供賞鑒

# 美國鋼鐵公司

**經理處** 上海黃浦灘第四號

**電碼** "Steelyard." Shanghai

本公司專辦各種建築鋼鐵品並包造鐵橋鐵房自來水煤氣塔及各種鐵管等物無不全備



此爲美國乍查西省克那基湖哈爾門橋橋共四彎每距九百二十四寸約重二十七萬一千餘噸計用鋼鐵甚夥均屬本公司之出品

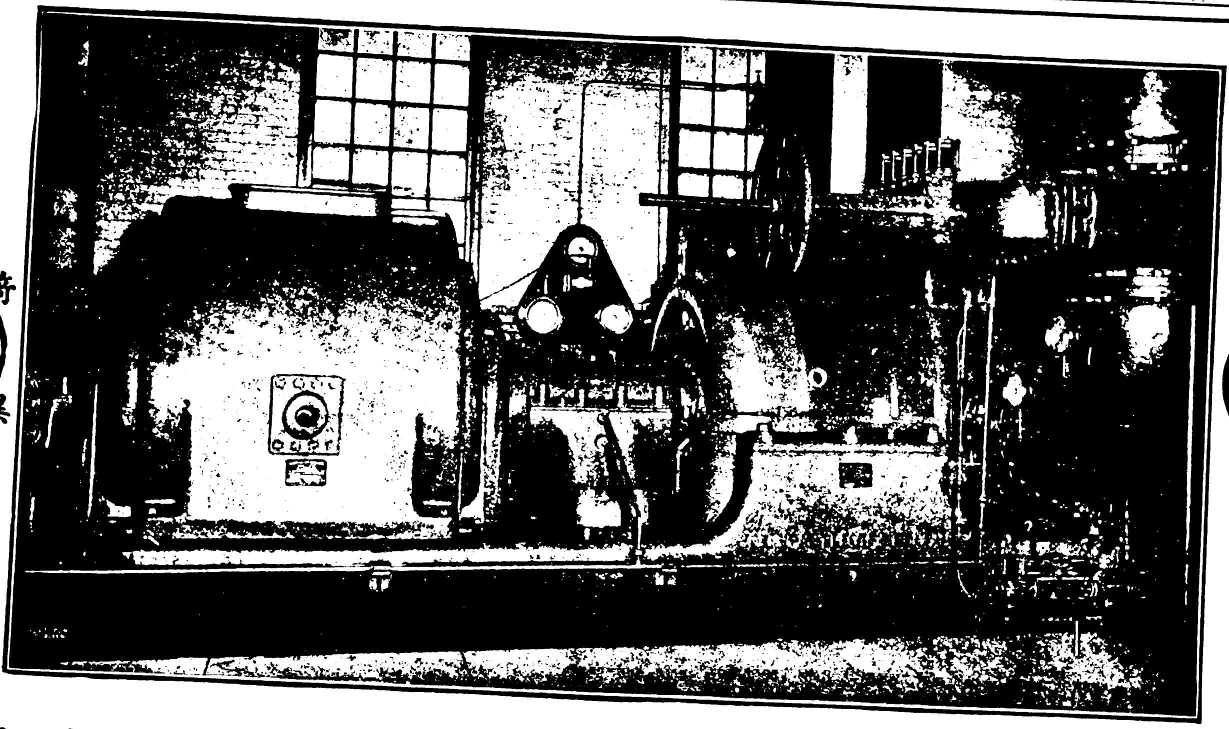
United States Steel Products Company

# 慎昌洋行廣告

Anderson, Meyer & Co., Ltd.

本行設立已久遐邇馳名專辦歐美各國名廠各種機器所有電燈全廠機器及各項電機電話火車鐵路鋼軸鋼鐵各軌各式車牀刨床測量繪圖儀器並各種汽油機器等件無不俱全所有本行經理之 美國愛特生電汽總公司 英國湯浦電機公司 浦特製造火車公司 漢司火車燈公司 施端林電話公司 范落汽油行船機器廠 右孚亞士工程儀器廠 鄧特摩阿車刨機器廠 馬士維爾石棉廠等均係環球著名各大廠中外馳名凡賜顧者均知各名廠機器之完善美備也 諸君欲知詳細請移玉至上海圓明園路四號

中國經售處上海慎昌洋行



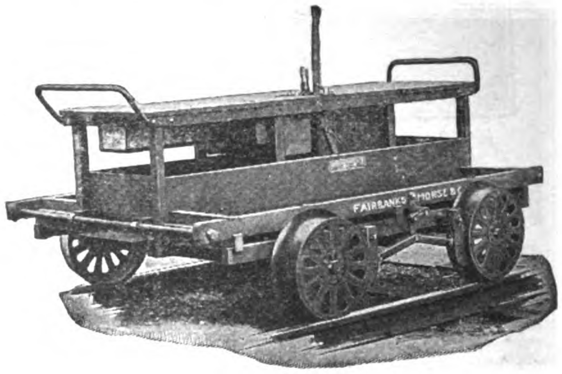
美國紐約**普通**又名**奇異電汽總公司**爲環球獨步世界第一之電汽製造廠與英國著名**湯輔公司**係屬聯號性質近年新發明一種**透頻汽機**係與磨電機直接相連而用便利異常且自七啓羅滑脫推至二萬啓羅滑脫其汽機之工料無不堅固精良而用煤亦省使用極靈即裝置機件亦能省佔地位誠現今電廠**惟一無二之電機也**此機發明後各國爭相購用僉謂較舊式之電機其使用之利鈍相去殆不可以道里計**又新造一種光明省電之曼士達拉絲燈泡**此燈泡乃本廠獨家創造係以數十年之電學經驗參照美國國家頒定規程研究製造而成故質地既極精良燃點尤能經久發行以後風行全球因其能省電力而光線之足備反出各種新式電燈之上因之銷路日廣愈推愈遠洵爲**電燈泡中之魁首**又**奇異商標各種電氣風扇**省電多風用久無炙手諸患可免一切危險**又電話機器**式樣玲瓏裝置簡便內地躉購且可代爲裝置餘如各種電燈全廠電機家常裝用之電汽器具並礦機鑽石機升降起重各機轉滾提鍊電機傳電器電汽船大小各廠應用之電機幫浦潔淨機貯水所發電機避電測電等機泉水發光機以及各種海陸軍用電光照遠燈電扇轉動等機凡屬於電汽各項大小機件及各樣附屬之件無不完全齊備　賜顧諸君欲知詳細請　駕臨　**上海圓明園路**四號本行寫字間接洽無任歡迎此佈

**中國經理處上海愼昌洋行**

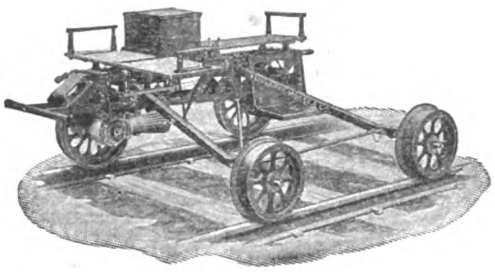
General Electric Company

## 美國反白司鐵道汽車

站工監督修路工頭及扯號旗
人所用
該車造法極為
簡便用法甚易
穩而且快
如用載客及載
官場此車式樣
甚多大小不一
請查目錄 第九百五十六目頭FY



## 鐵道材料



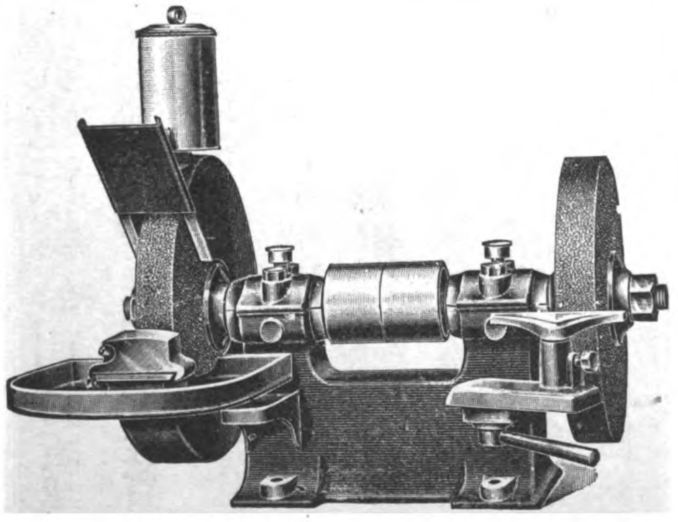
油引擎汽力及電
力抽水器電燈器
運卸煤斤機器轉
盤及吊橋機器手
車推車及一切應
用材料無不完備
請查目錄 第九百五十
六目頭GB

中國經理處 上海信亨機器公司 香港天祥洋行

Fairbanks-Morse Railway Motor Cars

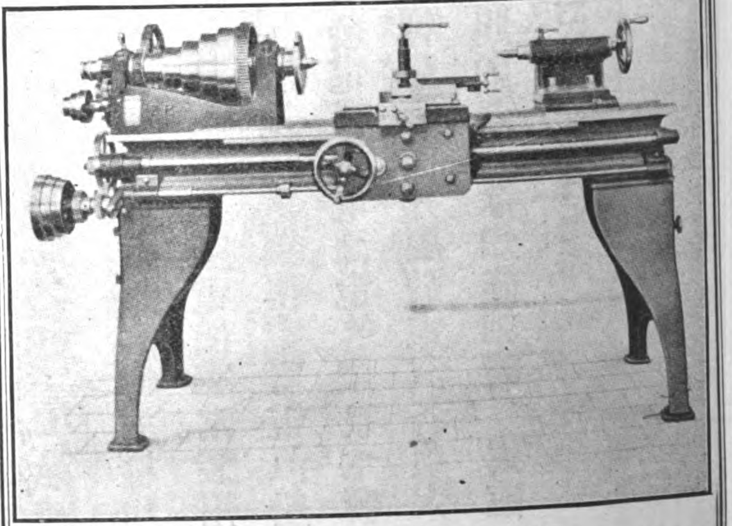
## 倫敦愛茂來工廠有限公司廣告

The London Emery Works Co., Ltd.



此圖為雙頭愛茂來檥式
磨機其全體均為生鐵所
製軟鋼磨心直徑一寸其
軸枕均為白色金屬類磨
心傍有緊鬆之滑車排於
左者可磨潮濕之物因配
有水槽碗架蓋頭及鑿俱
右邊則配有普通磨件倘
有最好質地之地球牌愛
茂來輪盤兩俱大十二吋
厚一吋半
此項磨機亦可大十四吋
厚二吋及大十六吋厚二
吋之輪盤
若欲知圖樣或說明書可
來函索取
工廠開設英京倫敦土丁
南英雄工廠

## 用電氣以節耗費



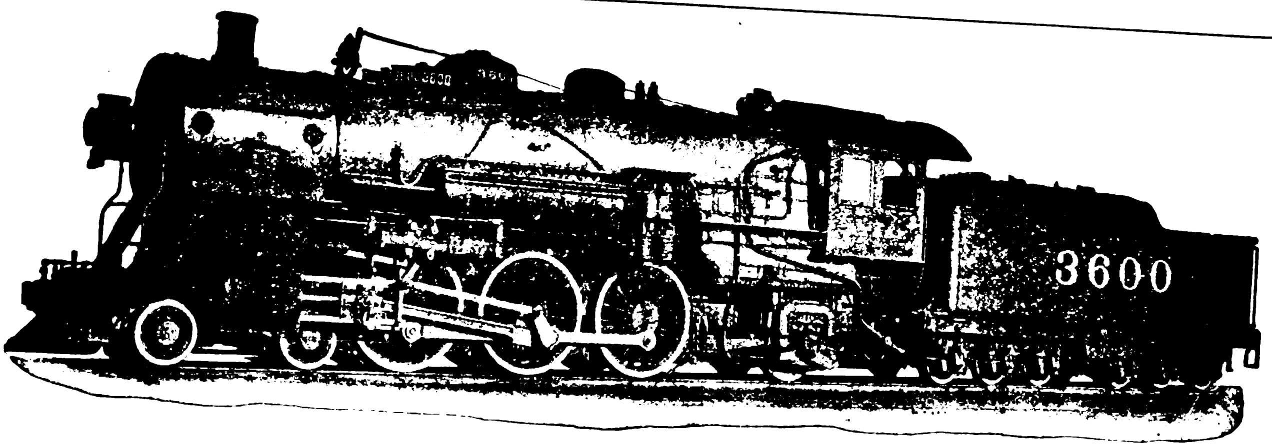
電氣一物利用
甚溥用以裝修
各項機器非特
工作較人力為
速而耗費亦可
節省因其出貨
多而成事易也
凡各機器廠欲
裝置電氣馬托
或鑽頭磨刀機
無論活動與否
均可使之流利
活潑所需電力
或交流或直流
及電鎊之多寡
均當隨意裝配
賜顧諸君幸垂
鑒焉

德國蜀赫廠啓

Schuchardt & Schütte

# 巴爾威機器車頭廠

The Baldwin Locomotive Works



愛克生討庇格散打非各鐵路之太平式車頭

美國搭客之快車中其大半皆有本廠之太平式(四六一二)機器車頭所拖帶此項車頭機器能載重力拖帶重車因機器內包函之力足使速率按時增高也

汽筩長二十六吋闊二十六吋　主動輪直徑七十三吋　汽機壓力二百磅　火爐佔地六十六另十分之七方呎　熱水面積四千四百四十三方呎　加重熱水面積九百八十方呎

主動輪重十七萬二千五百五十磅　機器共重二十八萬八千七百磅　拖力四千一百磅

太平式之機器車頭爲愛克生討庇格散打非鐵路所有爲近世最新式之機器見上圖

此條鐵路爲乘客最多故車行之次數亦多辦法亦妥善

此車頭用油爐特意擴充其極大之力每邊之主動輪之重限五萬八千磅

此項機器已爲本廠帶往巴拿馬萬國賽會場之物件中之一

中國經理上海北京張家口天津香港漢口　慎昌洋行

日本經理東京舍爾法辣薩有限公司

# 美國鋼鐵公司

上海黃浦灘第四號　電碼 'Steelyard' Shanghai

## 專運美國鐵管公司各種物品

並製各式鋼鐵自來水自來火蒸汽等氣管

大小自八分之一至三十寸

隨意配合無不適用

## 汽鍋上應用之鋼管

質料或剛或柔式樣或大或小尺寸或長或短

各式井內所用管子

## 無縫煤氣管或煤油鐵管

其重量能抵三千七百磅壓力

用於各種大壓力煤氣氣空氣亞馬尼亞及炭氣等物最爲合宜

## 空心鐵柱

用以建築電車軌道電桿德律風桿及各種電氣柱枝

其外尚有各項工程應用之鋼鐵管子

及自來火自來水龍頭等件一應俱全

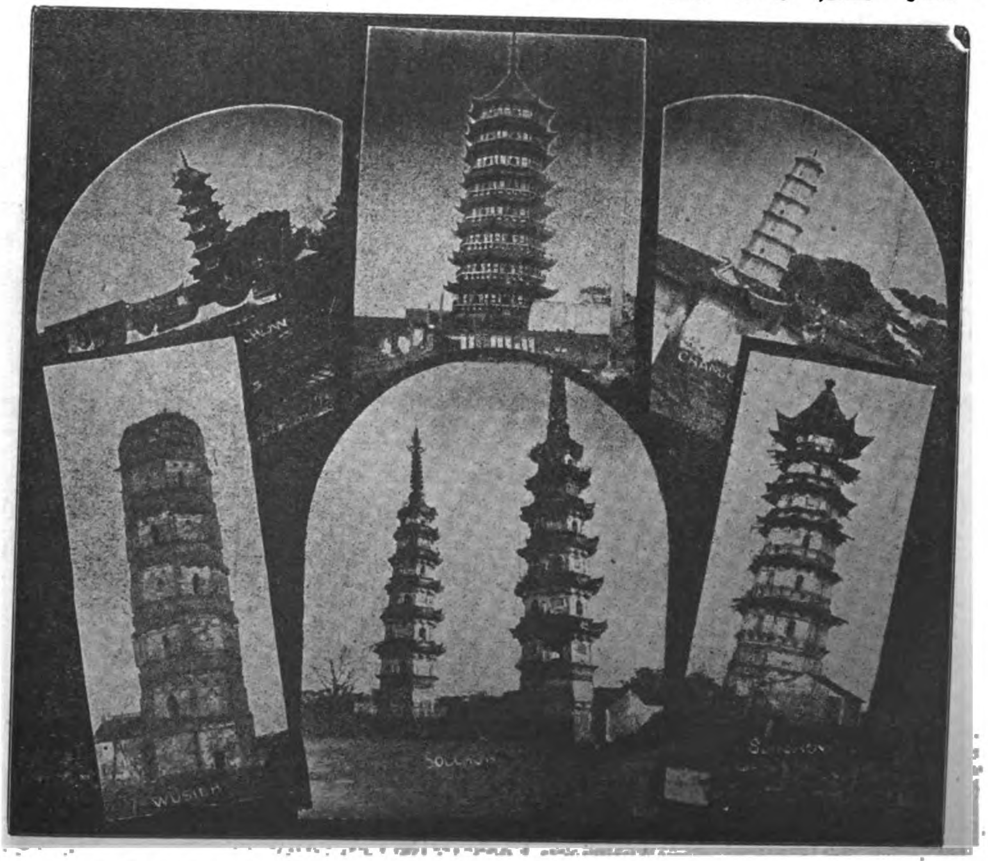
United States Steel Products Company

# 滬寧鐵路廣告

Shanghai-Nanking Railway

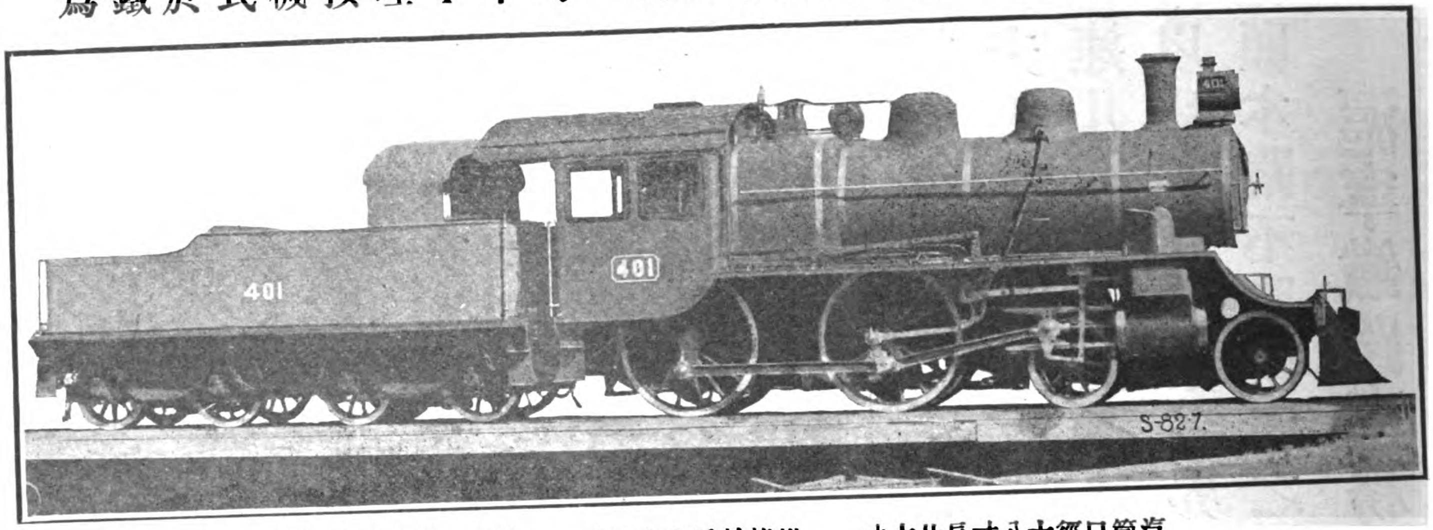
啓者本路工程均照歐西頭等鐵路最新款式建築軌道堅固車行穩捷往來時刻必依規定各站之候車客房停車月臺不但地方寬敞布置亦極周密往來搭客無擁擠窒塞之虞各等客車座位舒暢氣候咸宜頭二等之車尤爲美麗無匹電燈電鈴電扇厠所盥室色色完備並有餐車隨行以備搭客不時之需西膳茶點酒水俱全價廉物潔衛生合宜每晚加走夜車以便行人睡臥車上設有床位備客休息至淞滬一段之設施亦與幹路無異各站及車上之員司夫役招待搭客處處周到運貨亦甚穩速凡於交通上有益者無不日事改良以臻完備久蒙各界所贊譽倘承光顧本路不勝歡迎之至

滬寧鐵路車務總管敬啟



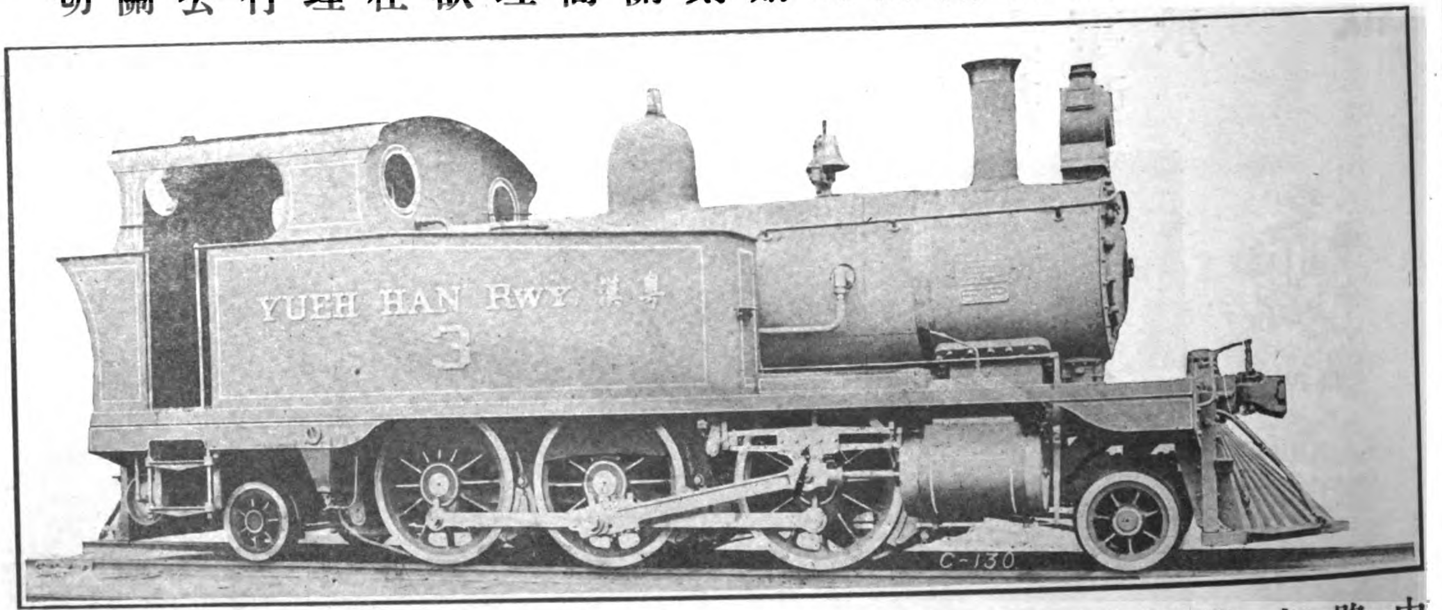
# 美國製造火車公司之火車極合用於中國鐵道

美國所製造之八輪火車頭即近時朝鮮鐵道所用之八輪火車頭甚爲合用已著明效拖客車至六輛或八輛其速力計一點鐘可駛二十至四十五英哩之遙按此種機關車式樣用於中國鐵道尤爲適宜




汽筩口徑十八寸長廿六寸　推挽輪長七十二寸　拖力一萬七千九百磅

火車頭之製造也在購辦者無不以最新式最適用爲貴而製造家亦必以最新式最適用者求合於購辦者之心爲能達其目的夫果欲合購辦者之心則必須經機關師之幾番商権始可辦理如 貴客欲與本公司在中國之經理處三井洋行面商則本公司當派機關師就商一切概不需費




中國粵漢鐵路之六輪雙水櫃車拖帶貨車或客車或貨車客車連帶之列車其速力與上圖記八輪車頭快慢有異者因此車速力較小拖帶列車之數遂少但前後有兩小輪可無旋轉機而能進退自如故駛行之時便捷多矣其特別出色之處即在此兩小輪也

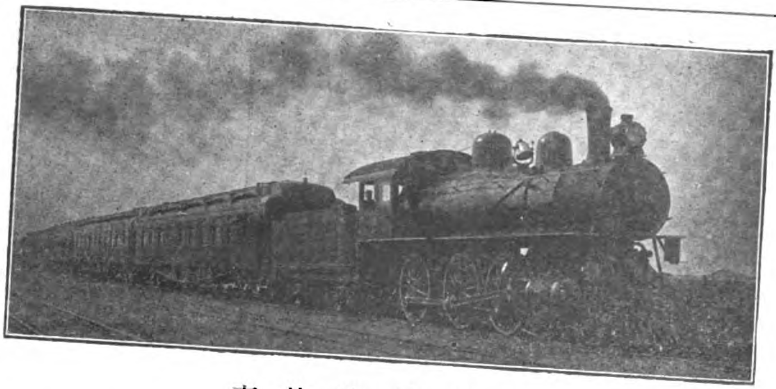
**在中國經理處三井洋行上海天津廣東漢口香港厦門盛京**

**本公司在美京紐約禮拜堂街三十號　電碼**

Locomotive New York
Annual Capacity; 3500 Locomotive.

American Locomotive Company

上海倫敦間 十三天半
東京倫敦間 十三天四分之一
東京北京間 三天半
大連莫斯科間 八天四分之三

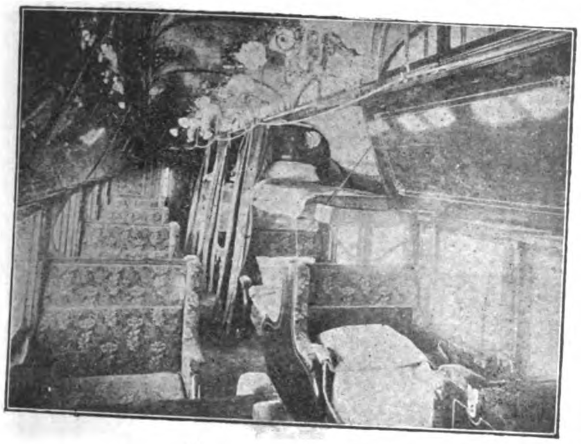


南滿鐵路快車

東亞歐洲間最短最捷最廉路線

South Manchuria Railway Company, Dairen

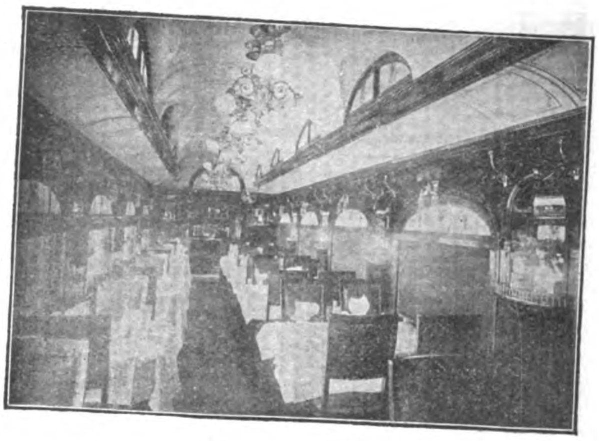
# 南滿鐵路



床車

每星期開駛三次快車

本快車預備完善床車膳車並頭等客車運行大連長春間以便聯絡西伯利亞路線並上海航路



膳車

大連聯絡航路須知 凡自大連到門司神戶仁川天津芝罘青島及其他日華兩國各埠亦均有定期開行輪船彼此按日往來

奉天聯絡須知 凡此等快車在奉天與京奉鐵路聯絡並與新修滿韓路線長春釜山間每星期三次快車聯絡日本歐洲間旅程比舊短減兩天航程亦大就減縮

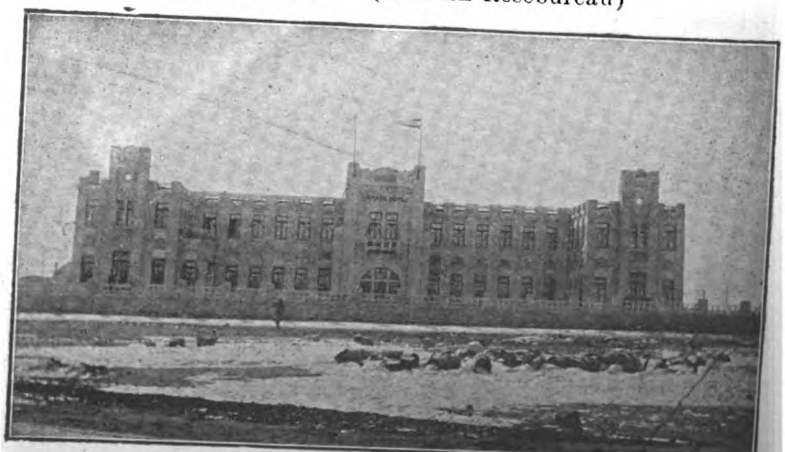
南滿鐵路公司開辦大連星浦雅麻多旅館

**南滿鐵路公司開辦旅館** 本公司在大連旅順奉天長春星浦等處開辦旅館均依西式調度完美無所不罄星浦距大連五英里爲北部瀕海地方唯一勝區開設旅館之外并添設許多平房雅潔瀟洒點在園中海山環繞風光明媚租價務從公道以應遊客貴需

**歐亞各地代售車票處** 本公司車船各票均在後開各處代售
萬國快車床車有限公司 (The International Sleeping Car & Express Trains Co.)
德瑪司庫克公司 (Messrs. Thos. Cook & Son.)
日本郵船會社上海分行
漢堡美國航路辦理旅客事務處 (Reisebureau der Hamburg-Amerika Linie)
挪的斯克辦理旅客事務處 (Nordisk Resebureau)

本鐵路時刻車脚表沿線便覽以及各項報告若有需要一俟告知本公司運輸科即當寄呈

南滿鐵路公司開辦長春雅麻多旅館



南滿鐵路公司開辦奉天雅麻多旅館

# 滿洲大連南滿鐵路公司

# 福祿氏磨機廠

The Fuller-Lehigh Pulverizer Mill.

陳立所中所陳立之機器不下四千架而福祿氏磨機實首屈一指且價廉而又能磨不易磨之各物品 如白煤 石綿石 瀝青砧 硫酸重土 炮克石脫 烟煤 骨煤 炭精 水門汀石 水門汀磚 粉墨炭 金苗 黃泥 煤炭 焦炭 銅苗 白雲石 肉色之石 燒過之黃泥 粉泥石 鑄鐵板面 福祿氏土 玻璃 金石英 黑鉛 石膏 海持來石灰 鐵苗 磁土 鎔巖 石灰 石灰石 砂石 磁鐵石 大理石 赭石 礦苗 螺蛔 漆 燐石膏 巴得蘭水門汀 拍特立耳礦滓 石英 壳 硅酸 礦滓 石板 雲母石 屈破立 大小砂石 赭鐵礦 皓金 淨白粉

諸君若欲以磨成之煤生爐請查本廠所積之粉煤 用本廠所製展轆壓之用本廠之火轉乾機乾燥之用本廠之磨而粉磨之若承各界光顧請來函索說明書爲禱

本廠所出福祿氏牌機器如

絞縺 輓輪 齒輪 磨管

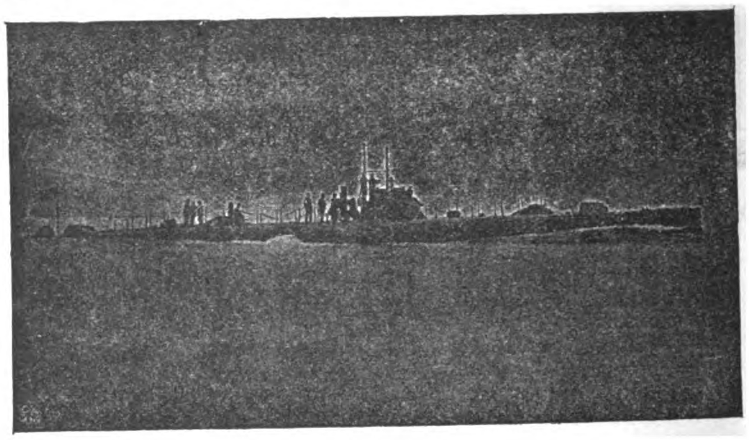
砌襯 壓機 磨機

工廠修理以及特式之鑄品均可代辦請閱第五十號目錄可來信索取

萊哈車子車輪車軸工廠白



# 飛愛山喬其哇有限公司出售海軍戰利品廣告



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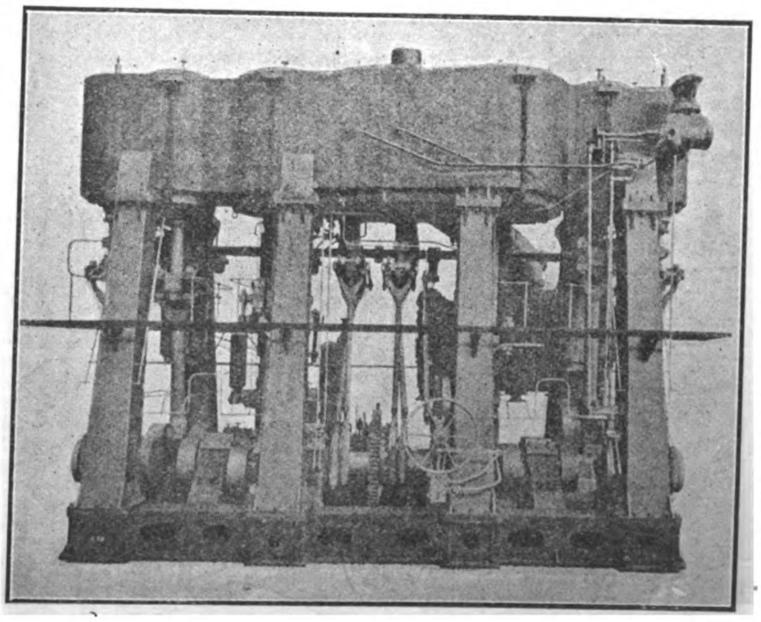

此圖爲四次自漲力汽之合抵力汽機計馬力四千八百匹

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火石車輪邊為專門家所製為世界最大之專製車輪之工廠所造本年所出者已增至百分之七十八因力大堅穩故為車輪之冠故商家亦願承辦代銷

工廠開設美國哇哈哇省專製空氣及實心輪子馬達車輪救火車輪車邊以及車輪所有之附屬品

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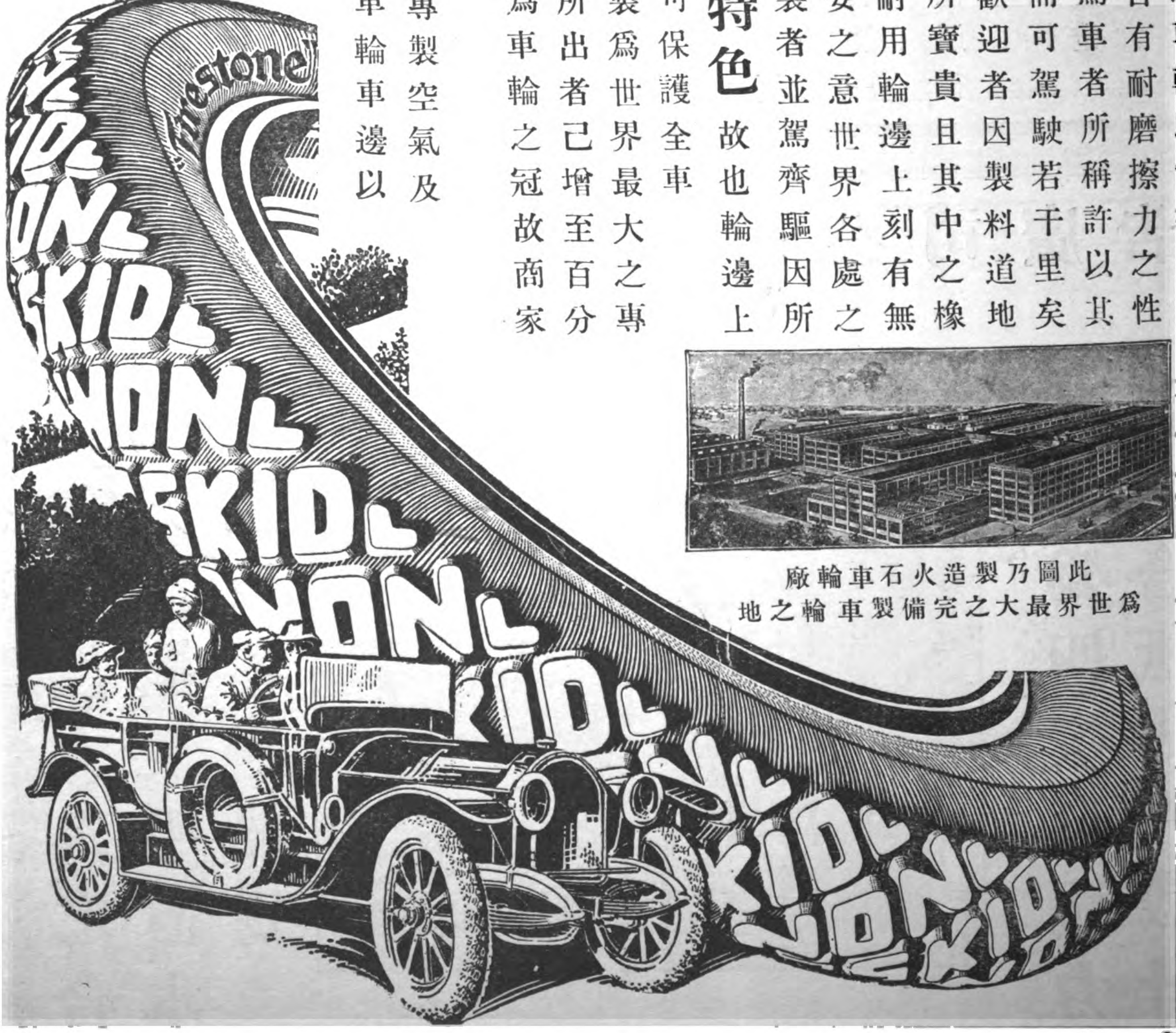
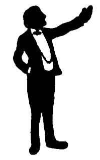
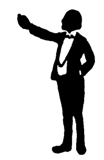
中國通商口岸東三省及高麗等處若有殷實商家欲經理者可通函索取章程可也




此圖乃製造火石車輪廠
為世界最大之完備製車輪之地



# 匯豐銀行



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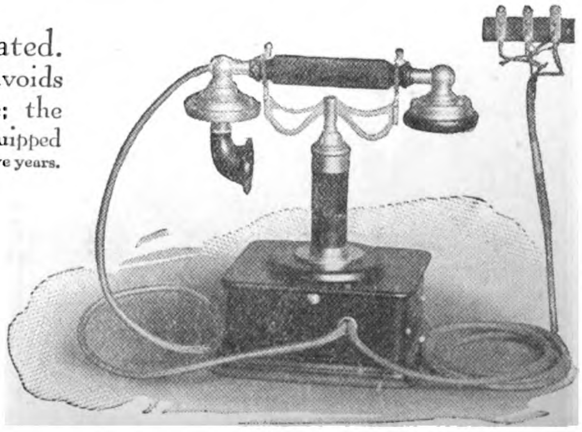

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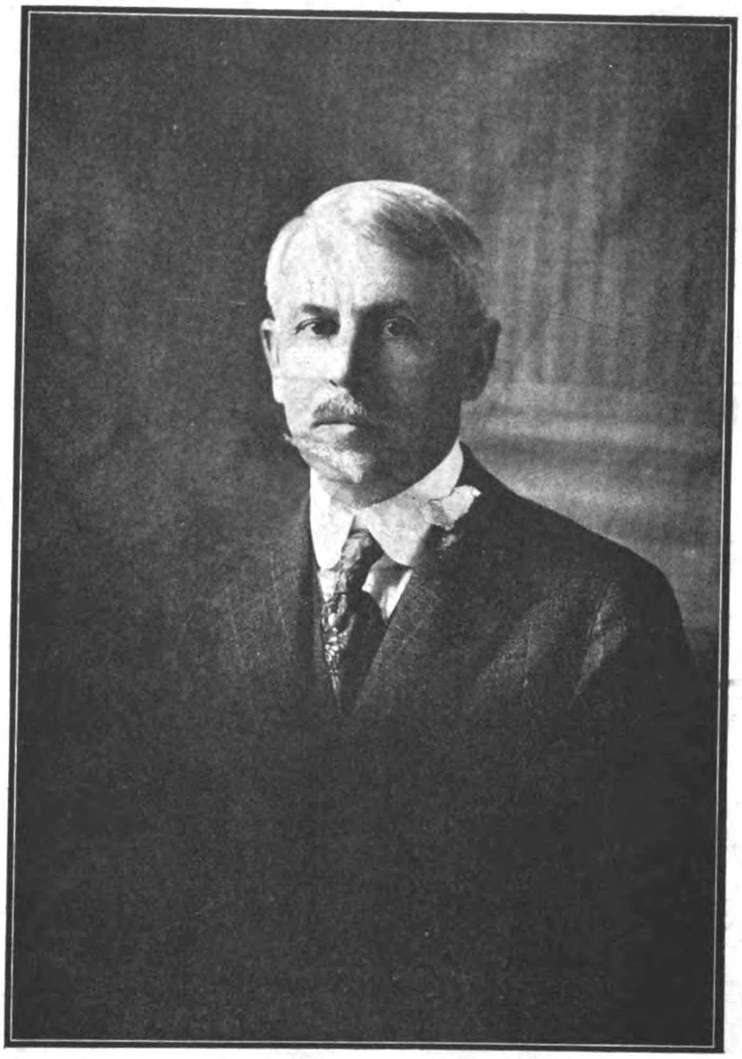
# THE FAR EASTERN REVIEW

# 遠東時報

## Engineering
## Finance ✻ Commerce

Vol. XIII., No. 2. July, 1916.



HON. EUGENE E. REED,
Secretary of Commerce and Police, Government of the Philippine Islands

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NIPPON UEBER ALLES
CHINA'S RIGHT TO EXIST
THE REAL SPIRIT OF AMERICA
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ALLIANCE DIRECTED AGAINST AMERICA
THE AMERICAN LOAN TO THE ALLIES
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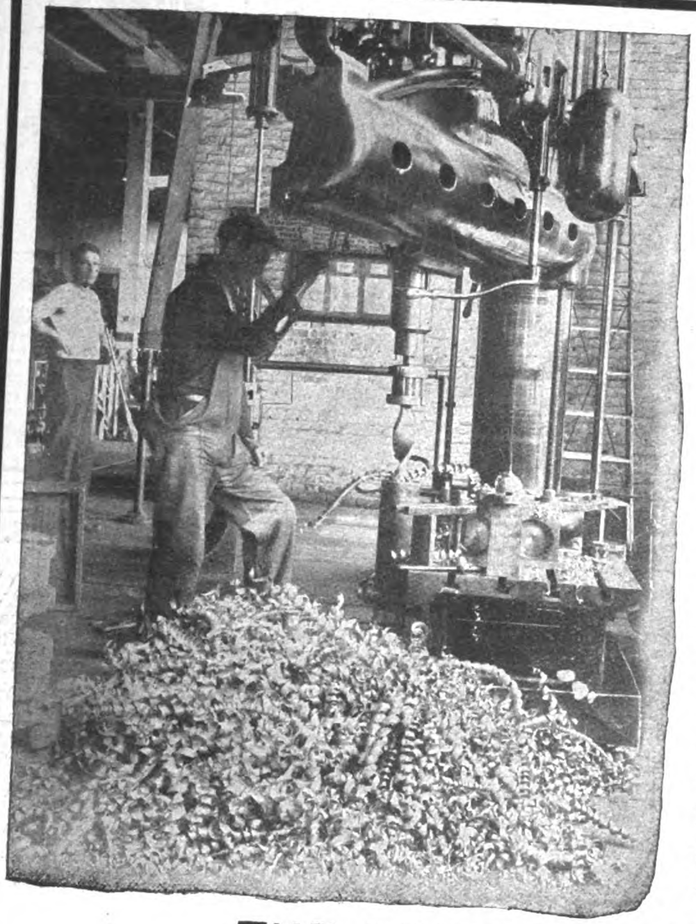

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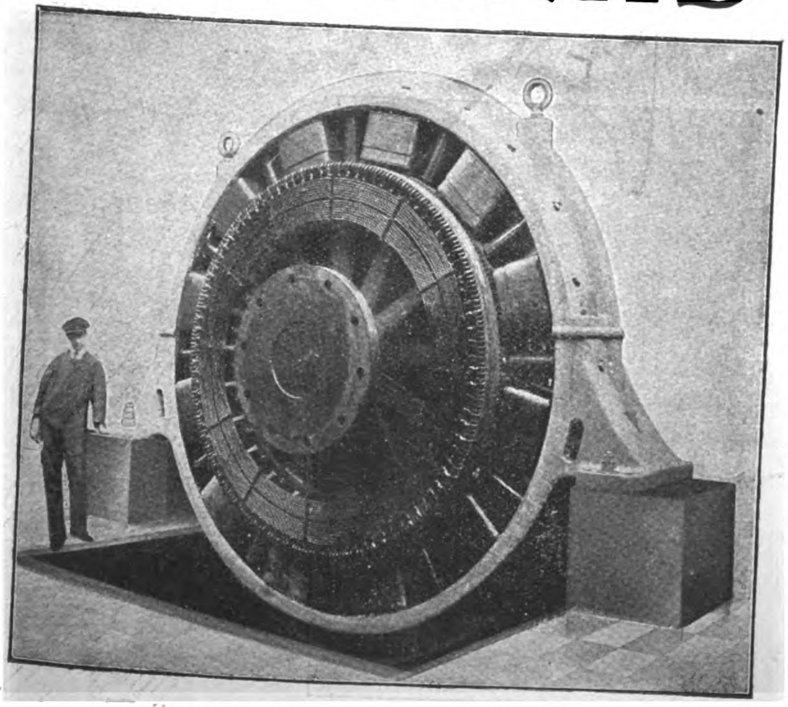

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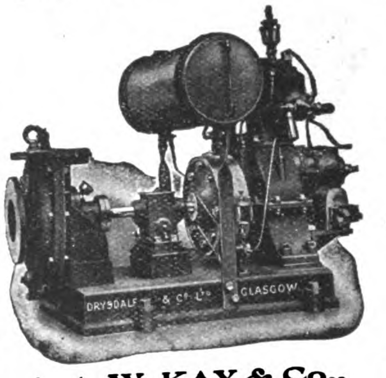

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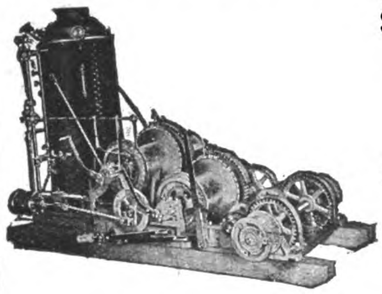

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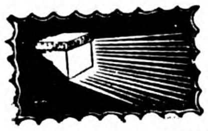

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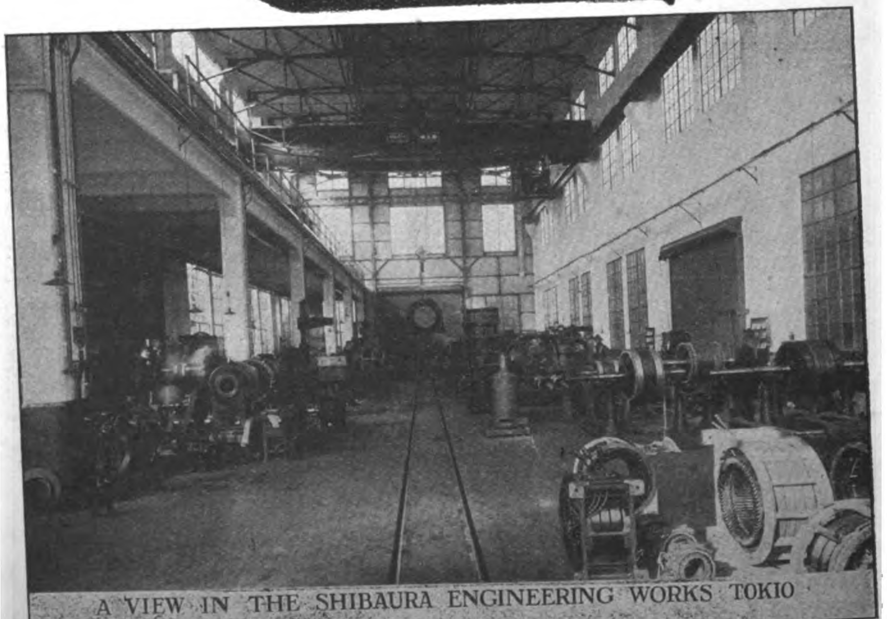

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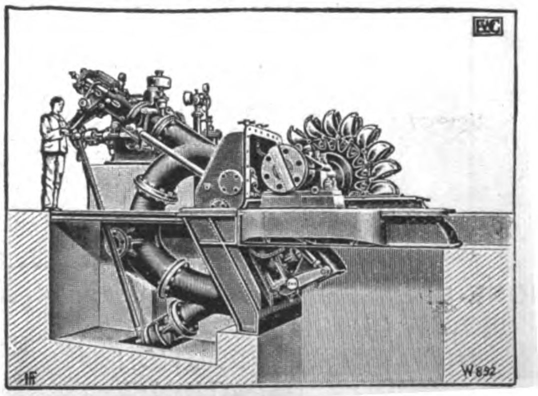

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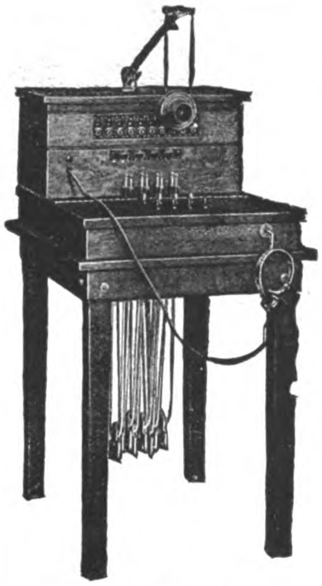

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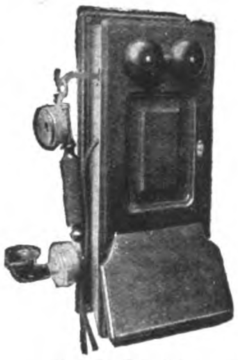

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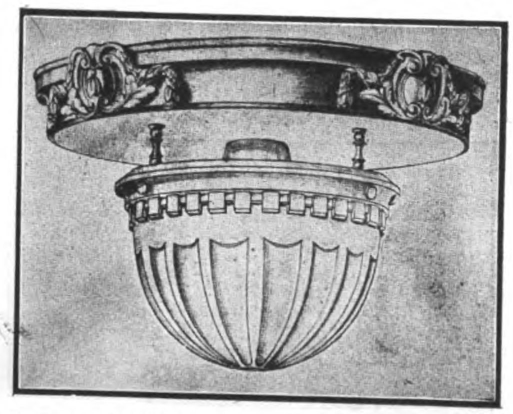

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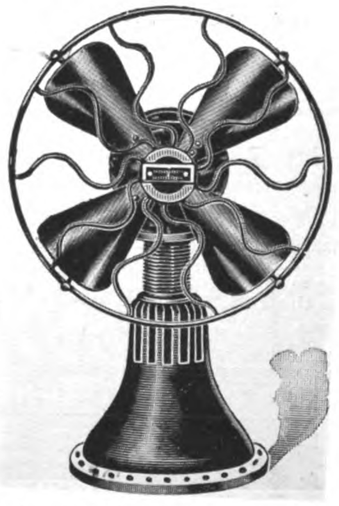

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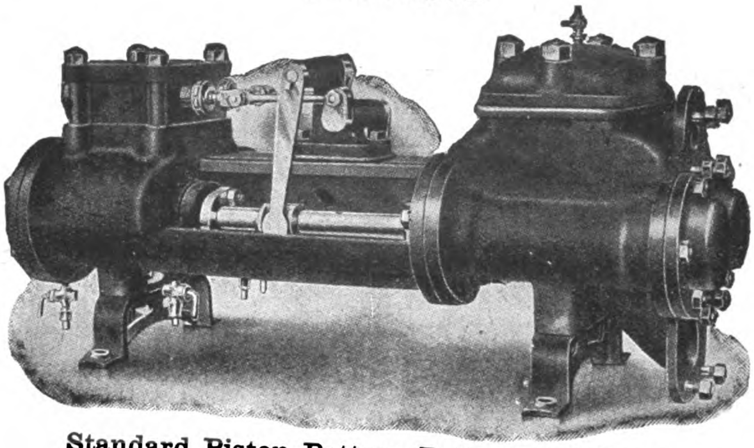

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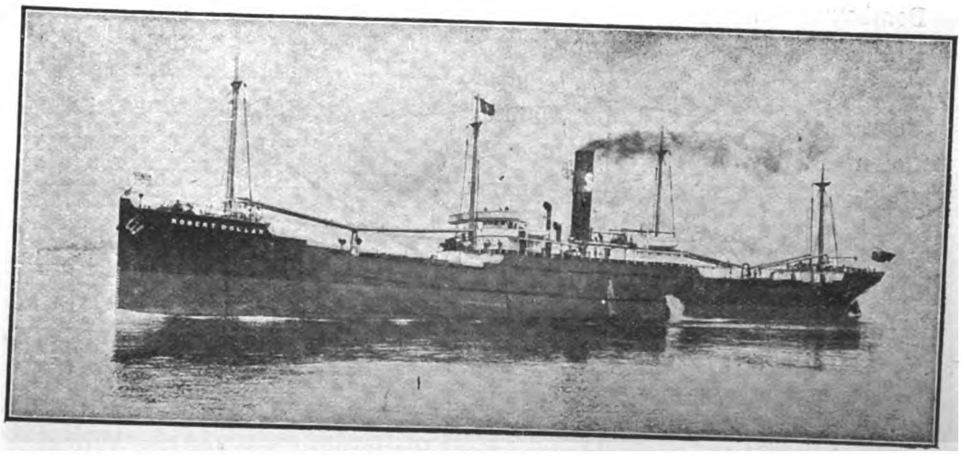


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# Hongkong and Shanghai Banking Corporation

| | | |
|---|---|---|
| Paid up Capital, .. .. .. .. .. .. .. | | $15,000,000 |
| Reserve Funds:—Sterling, £1,500,000 @ 2/-= | $15,000,000 | |
| —Silver, .. .. .. .. .. | 18,000,000 | $33,000,000 |
| Reserve liability of Proprietors, .. .. .. .. | | $15,000,000 |

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*Capital Paid up*.......... „ 30,000,000
*Reserve Fund*.......... „ 18,550,000

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(Specially authorised by Presidential Mandates of April 7th, 1914 and October 31st, 1915 making the Bank of Communications a National Bank).

## HEAD OFFICE: PEKING

## CAPITAL: = = Kuping Tls. 10,000,000

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***Szechuan Province.***—Chungking.

***Anhwei Province.***—Wuhu, Anking, Hsuancheng, Panpu.

***Kwangtung Province.***—Canton.

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***Special Districts.***—Jehol, Kueihuacheng, Lenghsien, Chihfeng, Hsinsi, Kalgan (Chahar).

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# THE BANK OF CHINA

## Government Bank

(Specially authorised by Presidential Mandate of 15th April, 1913)

Authorised Capital: $60,000,000.00
Paid up Capital: $10,000,000.00

## Head Office: Peking

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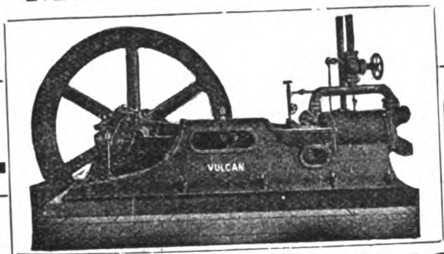


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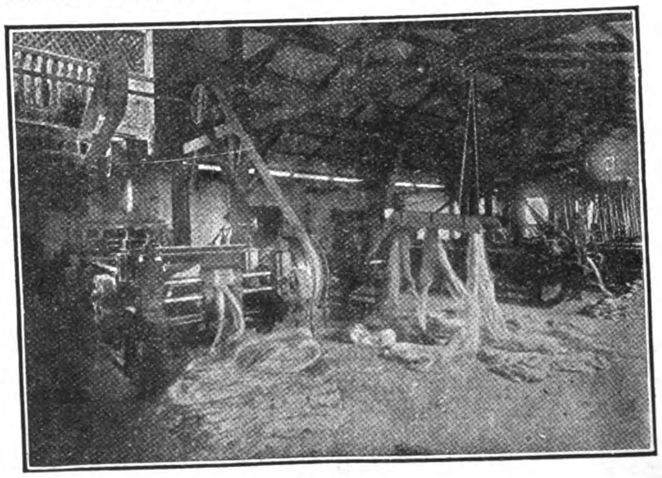

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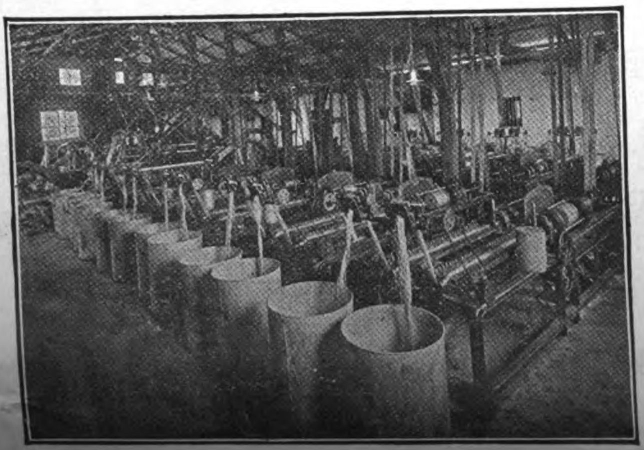

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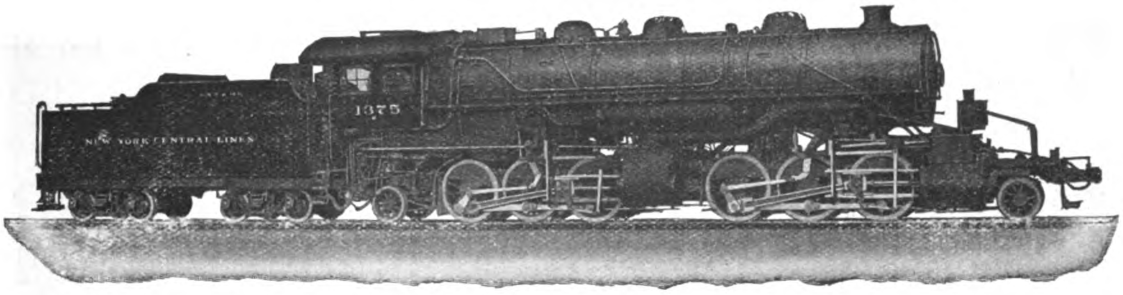
# MALLET LOCOMOTIVES

## DEVELOPED BY TESTS



MALLET LOCOMOTIVE, BUILT FOR NEW YORK CENTRAL & HUDSON RIVER RAILROAD

**Total Weight of Engine, 354,000 Pounds; Weight of Drivers, 301,500 Pounds; Diameter of Drivers, 57 Inches; Boiler Pressure, 200 Pounds; Cylinders, 21½ and 34 × 32 Inches. Maximum Tractive Power, 67,500 Pounds**

Twenty-six Mallets are handling the entire slow freight traffic on Pennsylvania Division of the New York Central & Hudson River Railroad. They have increased track capacity 40 per cent without double tracking; reduced overtime 80 per cent; and decreased motive power investment $78,000.00.

This Mallet design was developed by experience and exhaustive tests. Each feature of the design, and the economical performance as a whole, was thoroughly analyzed. The tests, resulting in this particular design, were made by experts from two of the largest railroad systems, in conjunction with our own engineers. The analysis of the results therefore lends exceptional weight to the final conclusions. These conclusions were not based on one test only. The investigation extends over two and a half months. Each improvement recommended was made, and tested separately, and its value definitely determined.

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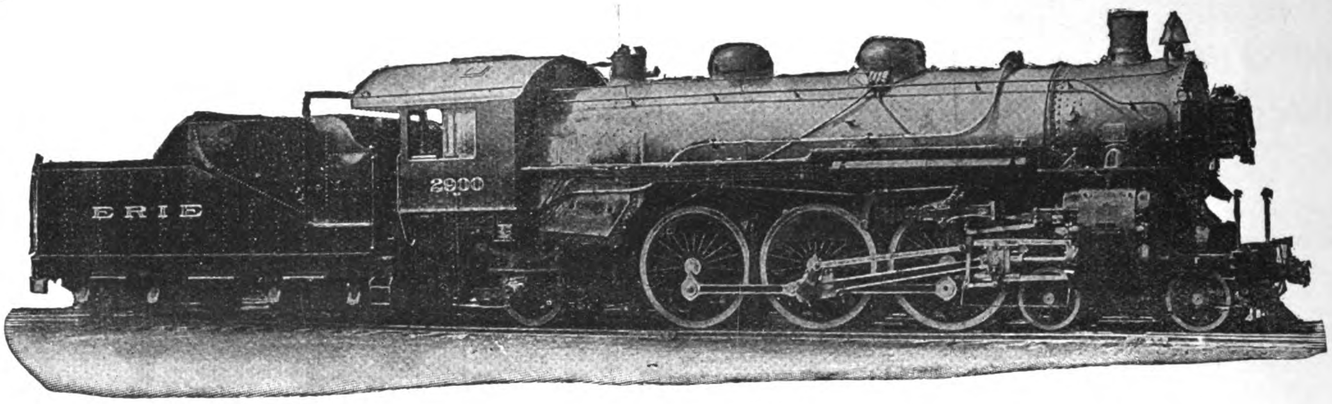


**Heavy Pacific Type Built for Erie Railroad**

## LIMA HEAVY PACIFIC TYPE

This locomotive combines the latest improvements and developments in design, materials and economic devices for saving fuel, etc.

Built for the **ERIE RAILROAD** for heavy fast passenger service where maximum capacity was desired.

General Dimensions as Follows:

Cylinders, 27 × 28 inches
Driving wheel base, 14 ft.
Total Wheel base, 36 ft. 2 inches
Drivers, diameter 79 inches
Boiler, straight locomotive type
Boiler diameter 79 inches
Weight on drivers, 176,000 lbs.
Total Weight, 287,000 lbs.
Tractive Power, 40,700 lbs.
Factor Adhesion, 4.24
Superheater, Schmidt
Valve motion, Baker

Our **PLANT** is equipped with the latest and most improved machinery, which enables us to build any type or size locomotive required.

Write our Agents for any information you desire and a copy of our catalogue.

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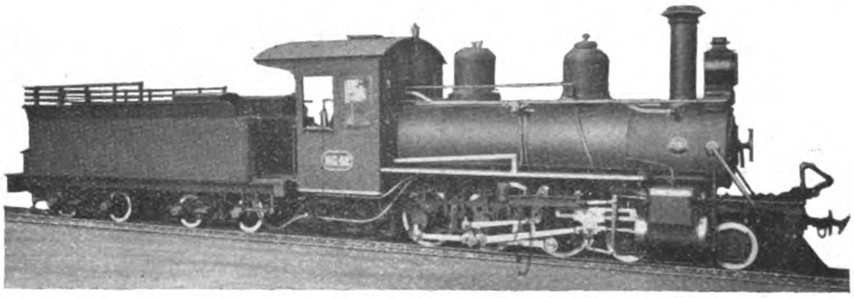
# LIGHT LOCOMOTIVES

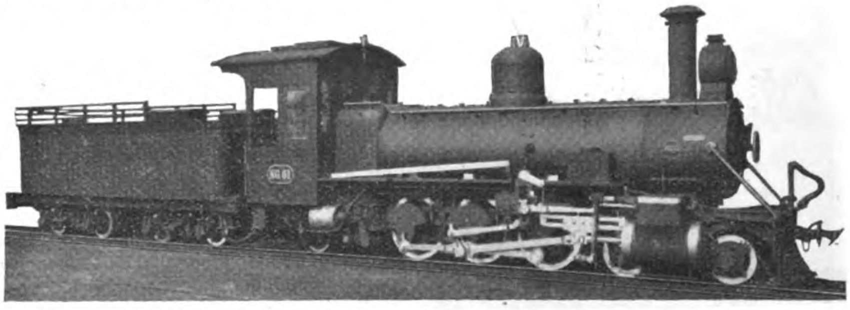


TEN-WHEELED LOCOMOTIVE, UNION OF SOUTH AFRICA.

| | |
|---|---|
| Cylinders, $11\frac{3}{4}'' \times 16''$ | Total heating surface, 424 sq. ft. |
| Driving-wheels, diameter, 33″ | Weight on driving-wheels, 36,400 lbs. |
| Steam pressure, 180 lbs. | Weight, total engine, 45,400 lbs. |
| Grate area, 75 sq. ft. | Tractive force, 10,200 lbs. |

Twelve light locomotives—six of the Ten-wheeled and six of the Pacific type—have recently been built by The Baldwin Locomotive Works for the Union of South Africa. The track gauge is 2′ 0″, and the engines are used on curves of 132 feet radius combined with grades of 1 in 36. These locomotives use coal for fuel, and are equipped with balanced slide valves, Walschaerts valve motion, copper fireboxes, firebrick arches, Baldwin steam brakes on the driving-wheels, and vacuum brake equipment on the tender and train. The Pacific type locomotives have Belpaire fireboxes. In both classes, the frames are placed outside the wheels in order to insure sufficient stability.

The Baldwin Locomotive Works has designed and built a great variety of light, narrow gauge locomotives suitable for meeting special conditions of service. Large numbers of these engines have been exported.



PACIFIC TYPE LOCOMOTIVE, UNION OF SOUTH AFRICA.

| | |
|---|---|
| Cylinders, $13\frac{1}{2}'' \times 18''$ | Total heating surface, 783 sq. ft. |
| Driving-wheels, diameter, 36″ | Weight on driving-wheels, 44,100 lbs. |
| Steam pressure, 180 lbs. | Weight, total engine, 63,750 lbs. |
| Grate area, 14.2 sq. ft. | Tractive force, 13,900 lbs. |

## THE BALDWIN LOCOMOTIVE WORKS

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## Schenectady, N. Y., U. S. A.

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If every machine in a cotton mill were run at its highest productive capacity—operated at a steady speed, to reduce wastage—and kept going without delays due to power causes, great profits could be realized. These conditions can be quickly and completely met by driving the machines with specially-designed G-E textile mill motors.

The subdivided electric-motor drive for cotton mills, developed by the General Electric Company (U.S.A.), brings electric power and the productive machine together—does away with long lines of shafting and many belts, thus practically eliminating the possibility of delays due to power causes. Motors are geared with silent gears to each loom.

The engineers of the General Electric Company (U.S.A.), installed the first electric drive used in textile mills and have supplied a great majority of those used since. This vast experience is shown in each part of G-E motor drives which are specially built for textile mills in practically every detail—special motors with waste-packed bearings, special controllers, special switches, etc. You are invited to avail yourself of this quick, highly-economical service to increase your production.

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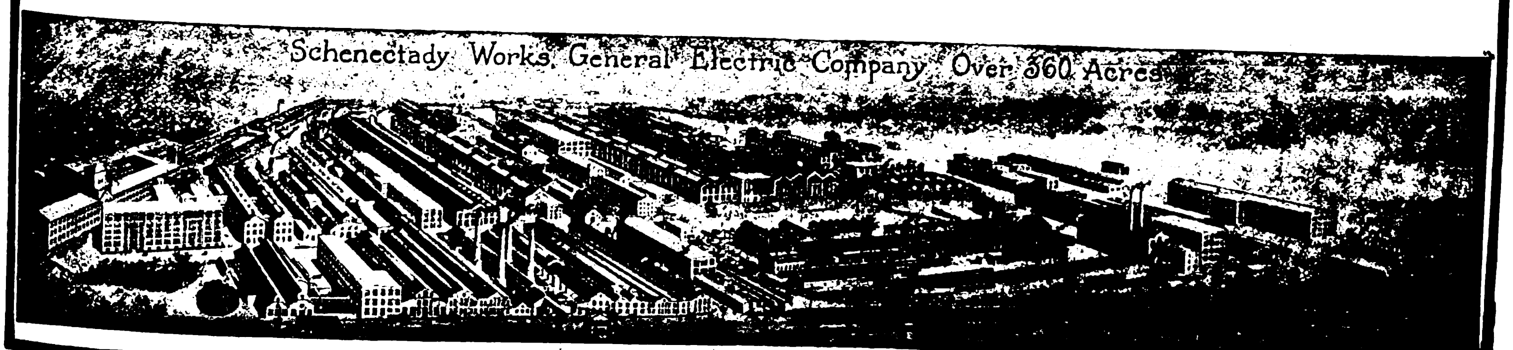

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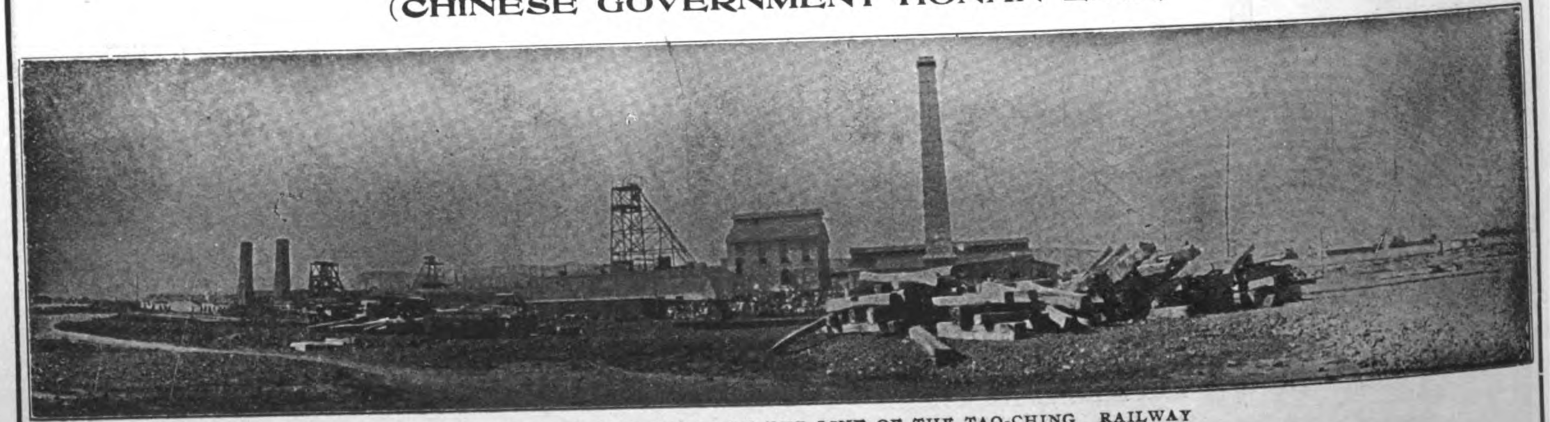
## THE TAO-CHING RAILWAY

### TAOKOU TO CHINGHUA

(CHINESE GOVERNMENT HONAN LINE)



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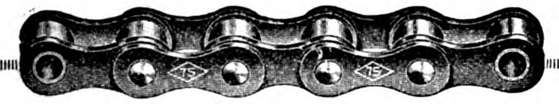
THE TRAINS OF THIS LINE CONNECT AT SIN-SIANG-SIEN WITH THE THROUGH SERVICE OF THE PEKING-HANKOW RAILWAY. IT TAPS THE GREAT ANTHRACITE COAL DEPOSITS OF SHANSI, AND CONVEYS THE PRODUCTS OF THE MINES TO THE NEAREST NAVIGABLE RIVER.



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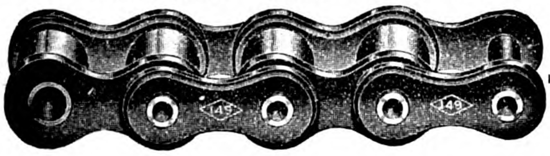

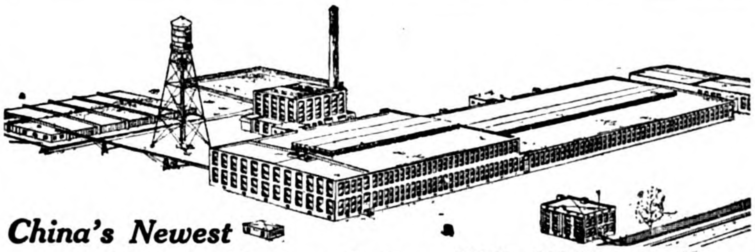

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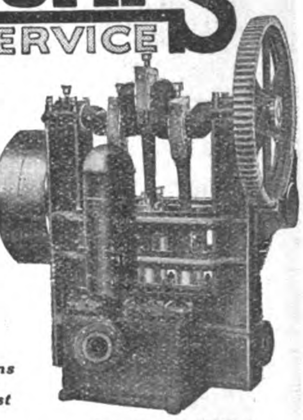
# GOULDS PUMPS
## FOR EVERY SERVICE

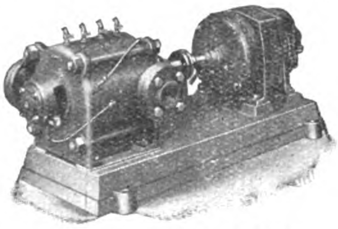
THE two new spinning mills now being built in Tientsin, China, will be equipped entirely with American made machinery of the highest grade. It is only natural that in choosing this equipment Goulds Pumps should be selected. We have furnished for these two mills two Figure 1009 7x10 Triplex Pumps and two Figure 3300 No. 2—two Stage Centrifugal Pumps.

Our long experience in building pumps for use in foreign countries has enabled us to become familiar with the pump requirements of all countries and to furnish pumps suitable for almost any conditions.



*Type of Figure 1009—7x10 inch Triplex Pump.*

*Bulletins on Request*



*Type of Figure 3300, No. 2—two Stage Centrifugal Pump.*

**The Goulds Mfg. Company**
**Main Office and Works:**
**Seneca Falls, New York, U. S. A.**
**Cable Address: "Galvis Seneca Falls"**
**A. B. C., Liebers, Western Union and Private Codes**

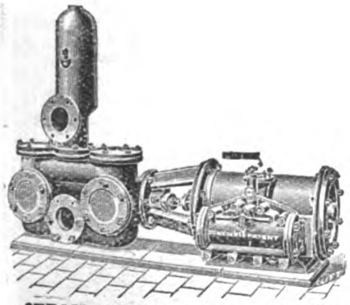
Agents: Andersen Meyer & Co., Ltd., Shanghai
Branch Offices Hongkong, Hankow, Tientsin, Peking, Changsha, Harbin

***WE MANUFACTURE***

# PUMPS

**FOR EVERY PURPOSE**

**To be worked by HAND, STEAM, BELT, WIND, WATER or ELECTRIC POWER.**



STEAM PUMP for General Purposes.

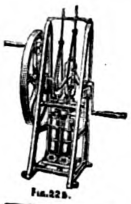
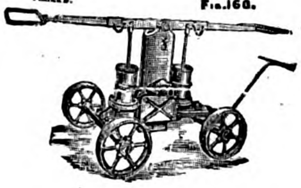
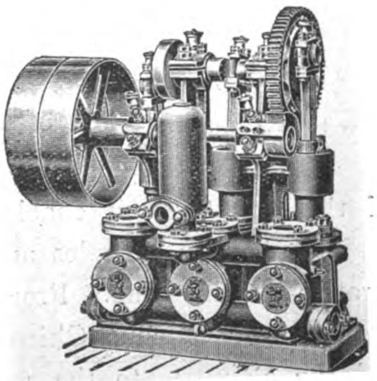
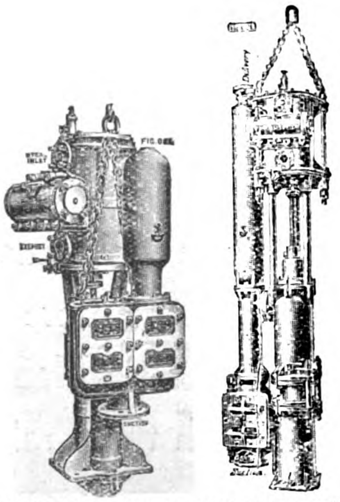


Fig.828.

Fig.168.







SINKING PUMPS for COLLIERIES, MINES, Etc.

Fig.191.

***Write for "Eastern" List.***

# JOSEPH EVANS & SONS
**(WOLVERHAMPTON) LTD.**

CULWELL WORKS,
**WOLVERHAMPTON, ENGLAND.**

Fig.188.

THE YELLOW RIVER BRIDGE ON THE PEKING-HANKOW LINE

CHINESE GOVERNMENT RAILWAYS

# PEKING-HANKOW LINE

"THE ROAD THROUGH THE HEART OF CHINA"

**Avoid the Cold and Rough Weather in the Sea Trip between Shanghai and the North by the more comfortable Route up the Yangtsze to Hankow, and from there via the Ching-Han Railway to Peking, where through connections for Europe are made with the Trains de Luxe of the Government Railways of North China.**

This line passes through the Heart of the Country and enables the traveller to and from Europe to catch a glimpse of Old China. Ancient walled cities, temples and pagodas are seen from the comfortable seats of the weekly trains de luxe operated by this line. From Peking, the great capital of the oldest civilization in the world, the train departs from the famous Chien-Men and carries the traveller through the historical and legendary portions of the Country, to the modern industrial center at Hankow—the Chicago of China. Connections are made with the Cheng-Tai Railway at Chengtingfu, with the Tao-Ching Line at Sin Siang-sien, and at Chengchowfu with the Pienlo Line.

A weekly express train de luxe leaves Peking every Tuesday, and Hankow every Friday, making the trip of over 700 miles in less than thirty hours.

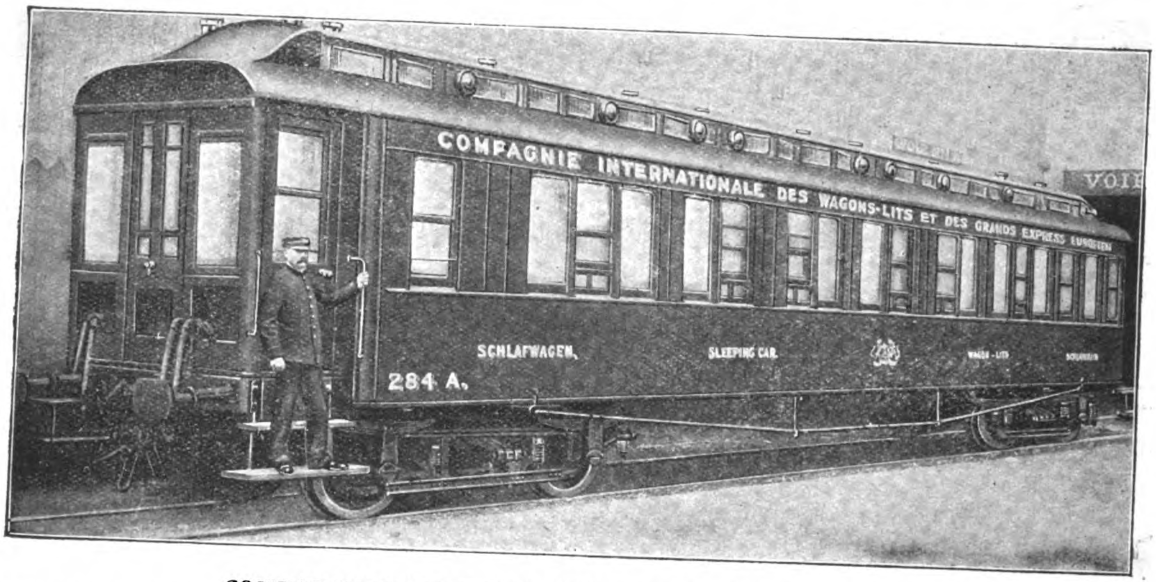
For information apply to any office of the International Sleeping Car Co. or Thos. Cook and Sons.

# American Car & Foundry Company

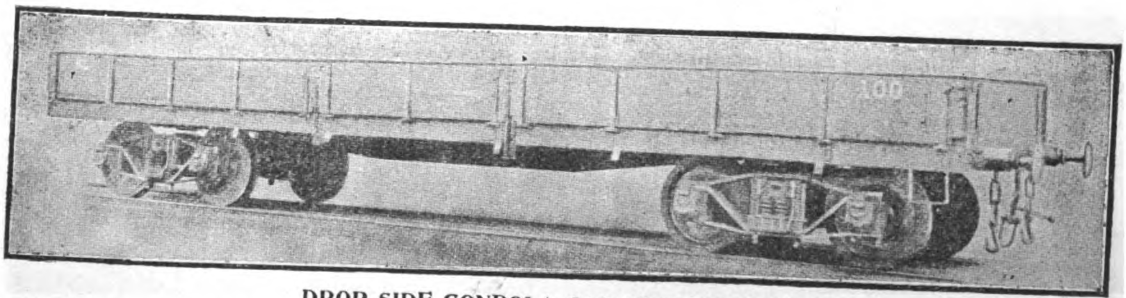
GENERAL OFFICES
CHICAGO 165 BROADWAY ST. LOUIS
NEW YORK

## CAR BUILDERS

OUTPUT { 150,000 FREIGHT CARS / 1,500 PASSENGER CARS / 2,000,000 CAR WHEELS } PER ANNUM




COMPARTMENT SLEEPING CAR FOR EUROPEAN SERVICE
Gauge 4'-8½" (1,435 M.); Body Length 59'-6" (16,430 M.); Capacity 20 Persons; Weight 80,000 lbs. (36,400 K.)



DROP SIDE GONDOLA CAR USED IN BRAZIL
Gauge 5'-3" (1,600 M.); Body Length 39'-4" (11,988 M.); Capacity 60,000 lbs. (27,300 K.); Net Weight 33,140 lbs. (15,000 K.)

Export Representative

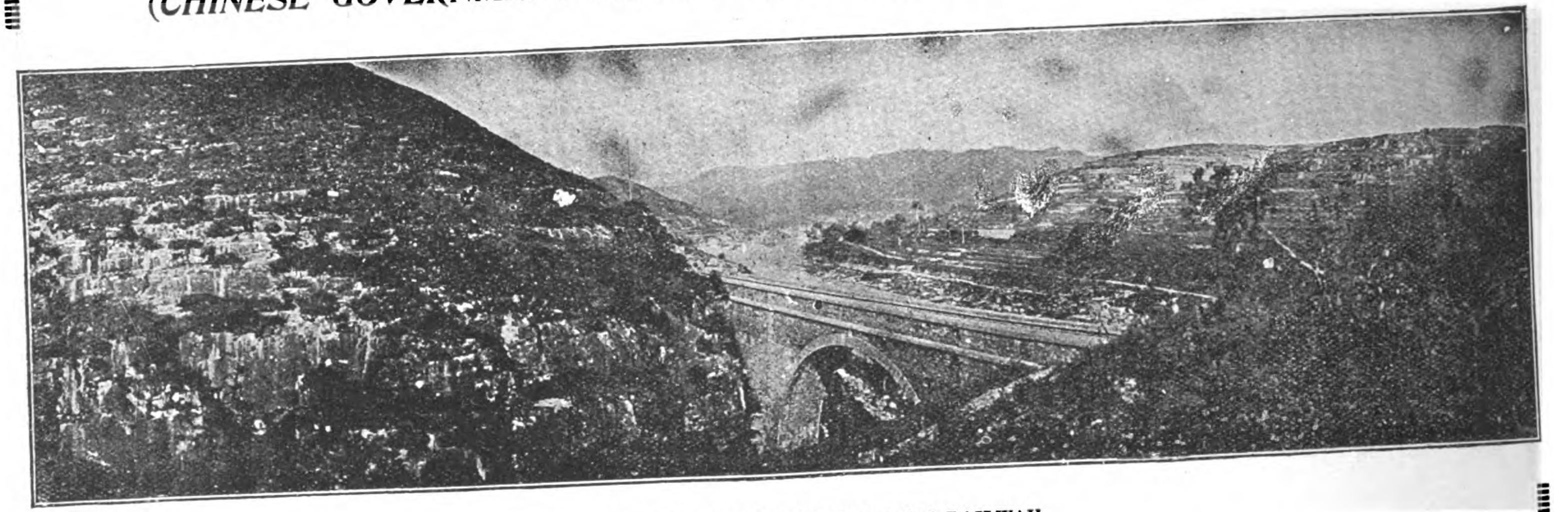
## American Car and Foundry Export Company

165 BROADWAY NEW YORK

# Chinese Government Railways

## The Cheng-Tai Railway

### (CHINESE GOVERNMENT SHANSI LINE—CHENGTINGFU TO TAIYUANFU)

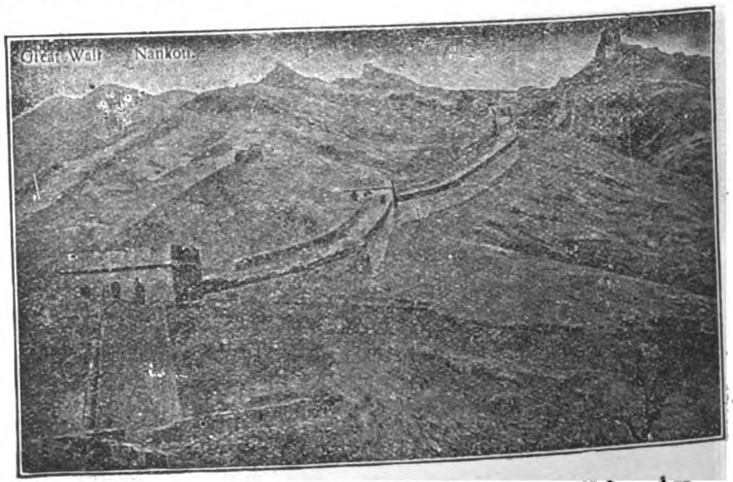


VIEWS ALONG ROUTE OF CHENG-TAI RAILWAY

The trains of this line connect with the through service of the Peking-Hankow Railway, affording Travellers the opportunity of seeing the most picturesque part of China. The line passes through a mountainous section of country, rich in Mineral Resources to the Provincial Capital of Shansi at Taiyuanfu. This interesting city is a great educational center, and famous for the fine quality of its artistic embroideries.

## The Peking-Kalgan Line

### "THE ROAD TO THE GREAT WALL"



This line follows the ancient caravan route and military highway from Mongolia into China by the way of the historic Nankow Pass. This pass is the Key to Peking, and Kalgan is the gate of the Country. From here the great camel caravans set out on their long journeys across Mongolia to Siberia and Central Asia. This old frontier mart, retaining its time-honored characteristics, one of the most interesting sights of the Old World, is made accessible by the new railway. The line also carries the passenger in two hours from Peking to Nankow, when the Great Wall of China and the Ming Tombs may be seen. A foreign hotel is operated by the railway authorities at Nankow, where chairs and guides may be secured for the Tombs.

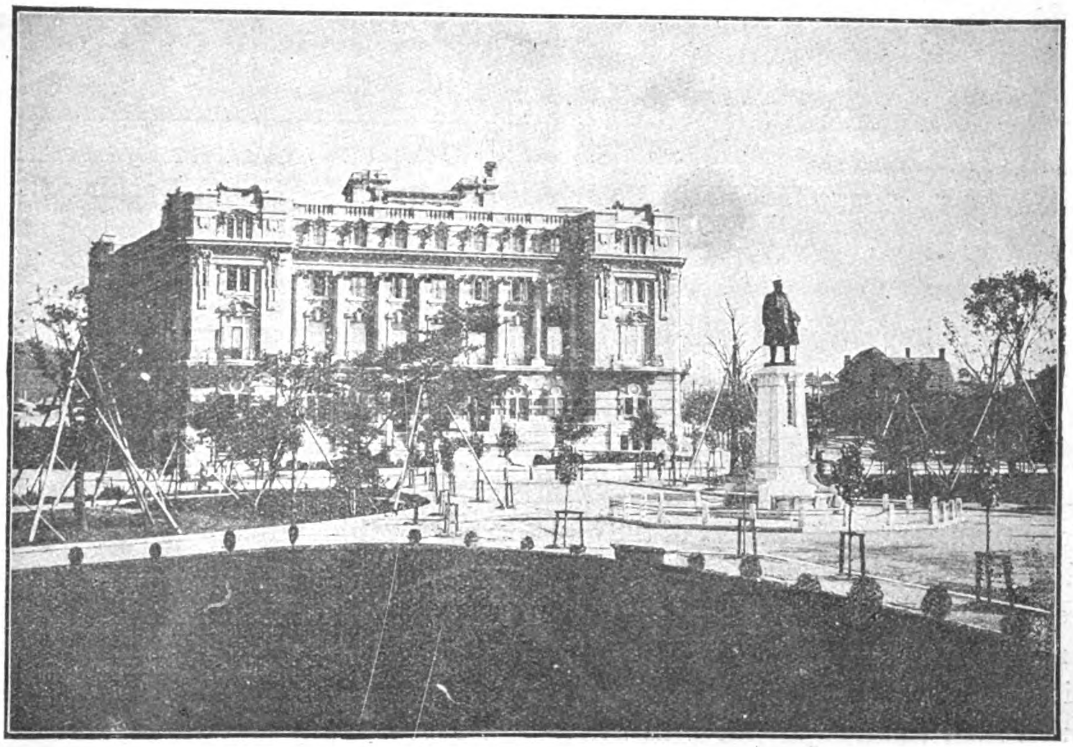
# Why not Spend This Year's Holiday in South Manchuria?

Magnificent Climate, Beautiful Scenery, Historic Battlefields,
Hotel Accommodation of the Best, Comfortable Travelling.
Good Shooting, Capital Fishing, Fine Golfing, and Sea Bathing ad lib.,
Combined with the Distinctive Quaintness of the Country undergoing the most
Striking Evolution of Modern Times.

## What more do you want?

All this and much more can be obtained in South Manchuria at moderate outlay,
and you will return from the trip charmed, revived, and
invigorated as never before.

**Ask the Travel Offices what they think**



**Of this Holiday Scheme.**

YAMATO HOTEL, DAIREN

In addition to its Train and Steamer Services, the South Manchuria Railway Company provides Modern Hotels on European lines at Dairen (whose phenomenal rise as a City and Port affords interesting study), Hoshigaura (the finest seaside resort in North China), Port Arthur (where the ruined forts are maintained just as they were left at the close of the Russo-Japanese War), Mukden (the Manchu Capital where the picturesque Imperial Palaces and Tombs may be inspected), Changchun (the key of Manchuria and the junction for three Railways), and gives equivalent to European Hotel accommodation at its Club at Fushun (one of the most important Collieries in the World).

Information on any subject and a beautifully Illustrated Guide Book supplied gratis by the

## South Manchuria Railway Company,

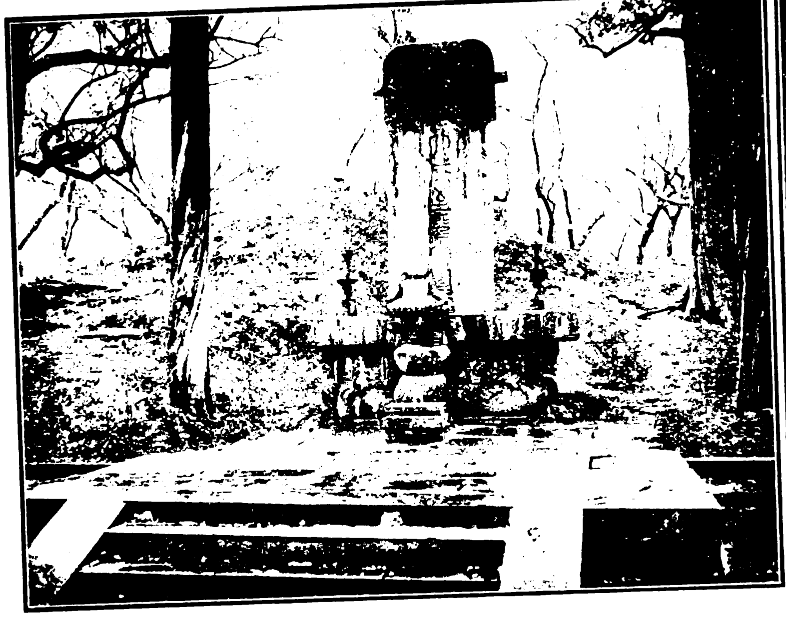
**DAIREN.**

Telegraphic Address: **Mantetsu.**

Codes: A.B.C. 5th Edition, A. 1., & Lieber's.

# CHINESE GOVERNMENT RAILWAYS

# TIENTSIN-PUKOW LINE


The Tomb of Confucius

Confucian Temple at Chüfu

**Mukden-Peking-Kalgan-TIENTSIN-TSINANFU-HSUCHOWFU-PUKOW-Nanking-Shanghai.**

**all by rail only.**

Being the **quickest, surest and most convenient** connection between Shanghai on the one and Tientsin, Peking, Kalgan, Mukden and the **Siberian route on the other side,** this railway represents **a saving of many hours, of many troubles,** worries and inconveniences for the busy merchant, the home tripper on short furlough.

The tourist, the globe trotter travelling with more leisure and bent on seeing things, it takes right away from the stereotyped banality of the great ports, takes him through many provinces of the vast republic and shows him **something of the "real" China,** of its people, its history and its beauty.

Express trains equipped with sleeping and buffet cars run once a week each way between Pukow (Nanking) and Tientsin connecting with the through service of the South-Manchuria and Trans-Siberian Railways.

Through mail trains equipped with **buffet cars run daily each way** between the before mentioned termini.

The crossing over the Yangtsekiang between Nanking and Pukow **is effected by** means of a modern 100-tons twin-screw ferry boat.

Special facilities and **liberal allowances** for passengers' baggage.

Best of **meals and wines supplied** on the trains.

Sanitation under the personal supervision of a **qualified medical officer.**

For further particulars apply to THE TRAFFIC MANAGER, Head Office, TIENTSIN or to the Agencies of Messrs. Thomas Cook & Sons, The International Sleeping Car & Express Trains Co. or the Nordisk Resebureau.

Telegraphic Address: TSINPURY—Tientsin (Tsinanfu, Nanking, Shanghai).

Codes: A B C 5th Edition; Broomhalls' (with Suppl. No. 1).

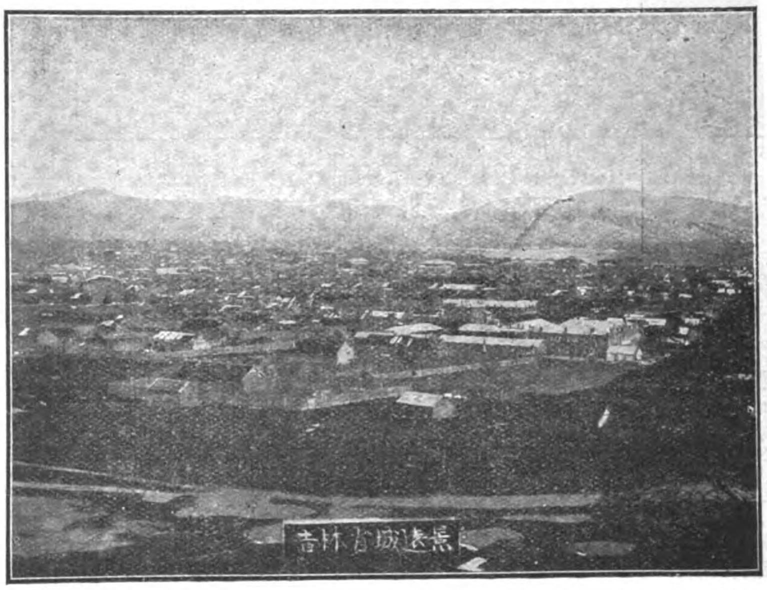
**Tientsin, May 1st, 1915. The Tientsin-Pukow Railway Administration.**

# 中華民國政府吉長鐵路行車時刻表

# CHINESE GOVERNMENT RAILWAYS KIRIN-CHANGCHUN LINE.

## TIME TABLE.

| DOWN TRAINS Daily Mixed | DOWN TRAINS Daily Mail | | STATIONS. | | UP TRAINS Daily Mail | UP TRAINS Daily Mixed |
|---|---|---|---|---|---|---|
| P.M. | A.M. | | | | P.M. | A.M. |
| 2.30 | 7.30 | dept. | TOUTAOKOU | arr. | 6.25 | 10.47 |
| 2.38 | 7.38 | arr. | CHANGCHUN | dept. | 6.15 | 10.37 |
| 2.45 | 7.41 | dept. | | arr. | 6.10 | 10.31 |
| 3.20 | 8.12 | arr. | KALUN | dept. | 5.40 | 9.57 |
| 3.25 | 8.14 | dept. | | arr. | 5.38 | 9.55 |
| 3.58 | 8.46 | arr. | YINMAHO | dept. | 5.06 | 9.22 |
| 4.02 | 8.48 | dept. | | arr. | 5.04 | 9.20 |
| 4.17 | 9.02 | arr. | HSIACHIUTAI | dept. | 4.50 | 9.05 |
| 4.22 | 9.04 | dept. | | arr. | 4.48 | 9.03 |
| 4.34 | 9.16 | arr. | YINGCHENGTZE | dept. | 4.36 | 8.50 |
| 4.38 | 9.18 | dept. | | arr. | 4.33 | 8.48 |
| 5.03 | 9.40 | arr. | TUMENLING | dept. | 4.12 | 8.24 |
| 5.13 | 9.50 | dept. | | arr. | 4.06 | 8.18 |
| | | arr. | CHAOCHIATIEN | dept. | 3.46 | 7.58 |
| 5.33 | 10.10 | dept. | | arr. | | |
| 5.57 | 10.31 | arr. | HUAPICHANG | dept. | 3.24 | 7.23 |
| 6.02 | 10.33 | dept. | | arr. | 3.22 | 7.20 |
| 6.18 | 10.46 | arr. | KUTIENTZE | dept. | 3.08 | 7.04 |
| 6.20 | 10.47 | dept. | | arr. | 3.07 | 7.03 |
| 6.38 | 11.03 | arr. | KIUCHAN | dept. | 2.52 | 6.45 |
| 6.43 | 11.05 | dept. | | arr. | 2.50 | 6.42 |
| 7.05 | 11.25 | arr. | KIRIN | dept. | 2.30 | 6.20 |



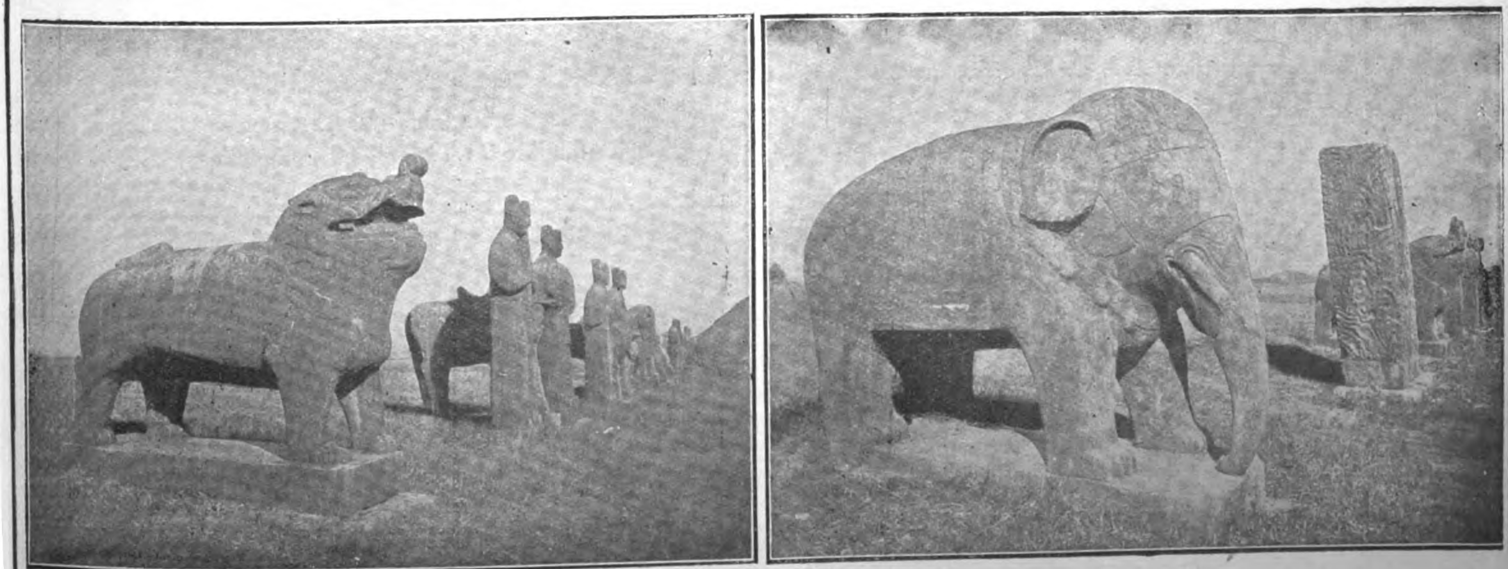
BIRD'S EYE VIEW OF KIRIN CITY

NOTICE:—"dept."=Departure. "arr."=Arrival.
1st May, 1915, and until further notice.

# THE PIENLO RAILWAY

## (KAIFENG-FU TO HONANFU)

## "THE FIRST SECTION OF THE PROJECTED CENTRAL TRUNKLINE"

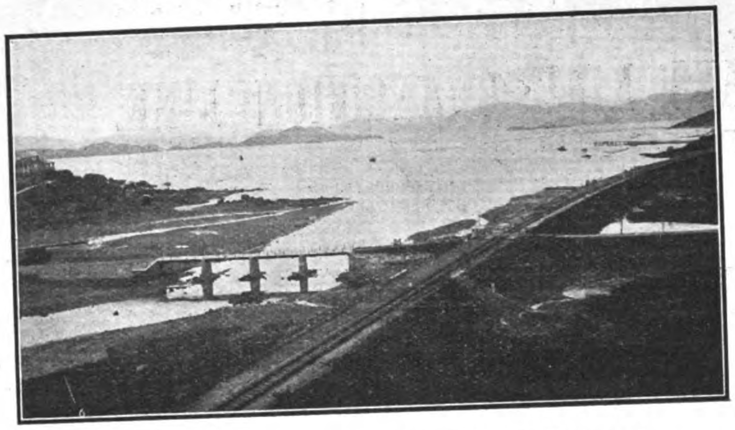


THE SUNG TOMBS NEAR KAIFENG-FU ON THE PIENLO RAILWAY.

The line connects with the through service of the Peking-Hankow Railway at Tcheng Tchéou, enabling the traveller to visit Kaifengfu, the provincial capital of Honan, and the old capital of the Empire at Honanfu.

# CANTON-KOWLOON RAILWAY

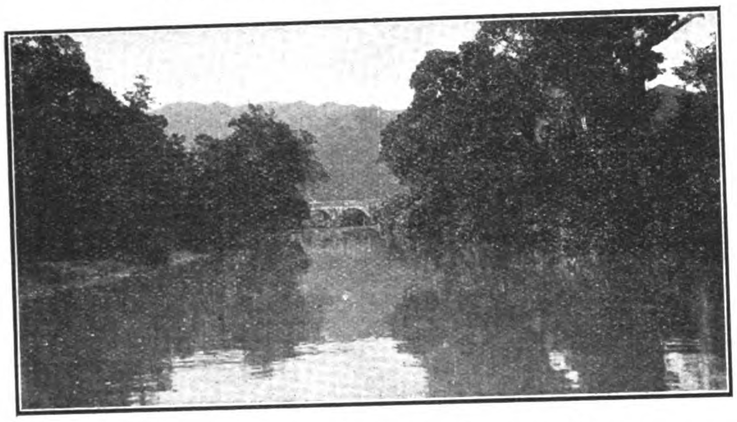
VIEWS ON THE BRITISH SECTION (22 MILES) VIEWS ON THE CHINESE SECTION, 89 MILES. (Chinese Government Railways)



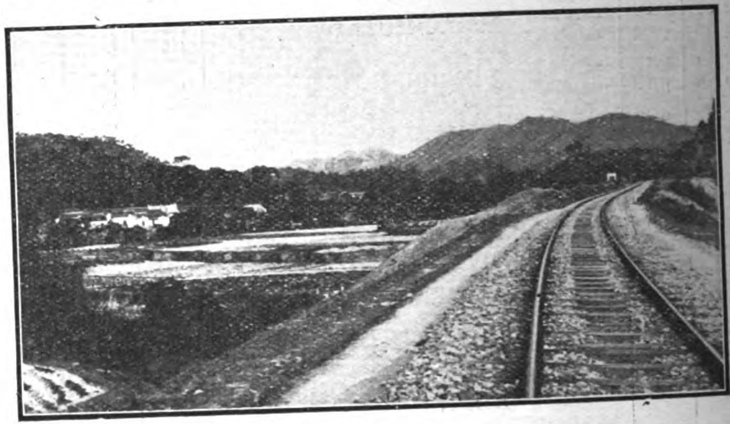
CANTON-KOWLOON RAILWAY—APPROACH TO KOWLOON

SCENERY NEAR CHEUNG MUK LOW—C. K. RAILWAY

**QUICKEST AND CHEAPEST ROUTE BETWEEN CANTON AND HONGKONG THROUGH VARIED AND BEAUTIFUL SCENERY**

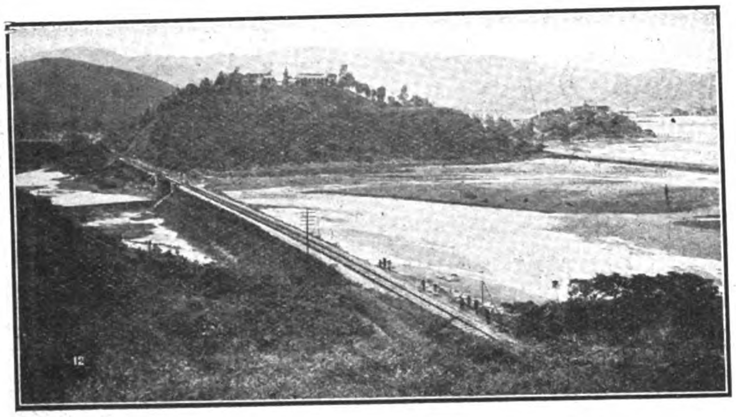


CANTON-KOWLOON RAILWAY—SCENE ALONG ROUTE

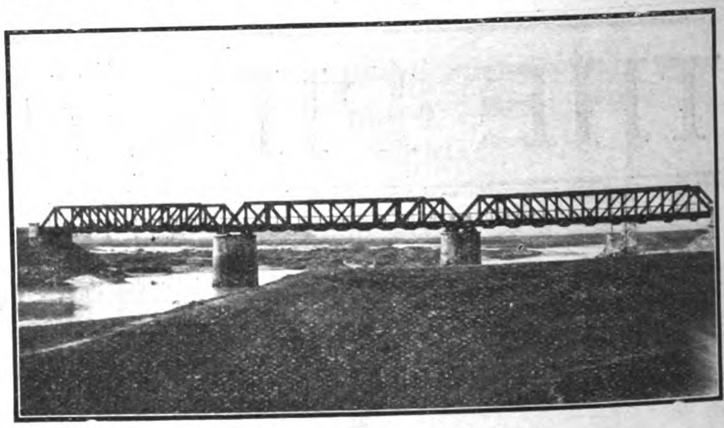


SCENERY ALONG ROUTE

**THREE EXPRESS CORRIDOR TRAINS EACH WAY DAILY—HOT MEALS AND OTHER REFRESHMENTS SERVED**

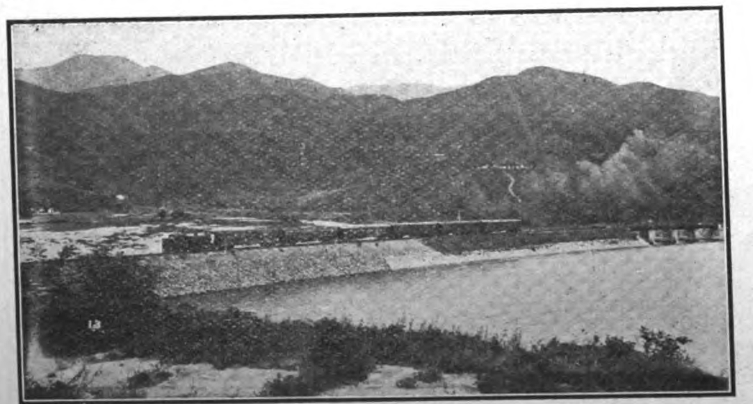


CANTON-KOWLOON RAILWAY—CROSSING TIDE FLATS



KAN SUI BRIDGE—C. K. RAILWAY

**3½ HOURS BETWEEN UP AND DOWN TRAINS FOR BUSINESS MEN OR TOURISTS AT CANTON OR HONGKONG**



CANTON-KOWLOON RAILWAY—EMBANKMENT APPROACH TO BRIDGE

GRAND CURVE NEAR SHEUNG PING

## TIME TABLE

Leave Hongkong (Kowloon) *8.05, 9.30 a.m., *12.10 p.m., & 2.30 p.m.
Arrive Canton (Tai Sha Tou) 11.45 a.m., 5.30, 3.50 & 7.15 p.m.

Leave Canton (Tai Sha Tou) *7.25, 8.35 a.m., *12.30 p.m. & *3.20 p.m.
Arrive Hongkong (Kowloon) 11.00 a.m., 4.35, 4.00, 6.55 p.m.

**Special terms and special trains for large tourist parties. For further particulars see advertisements or apply to**

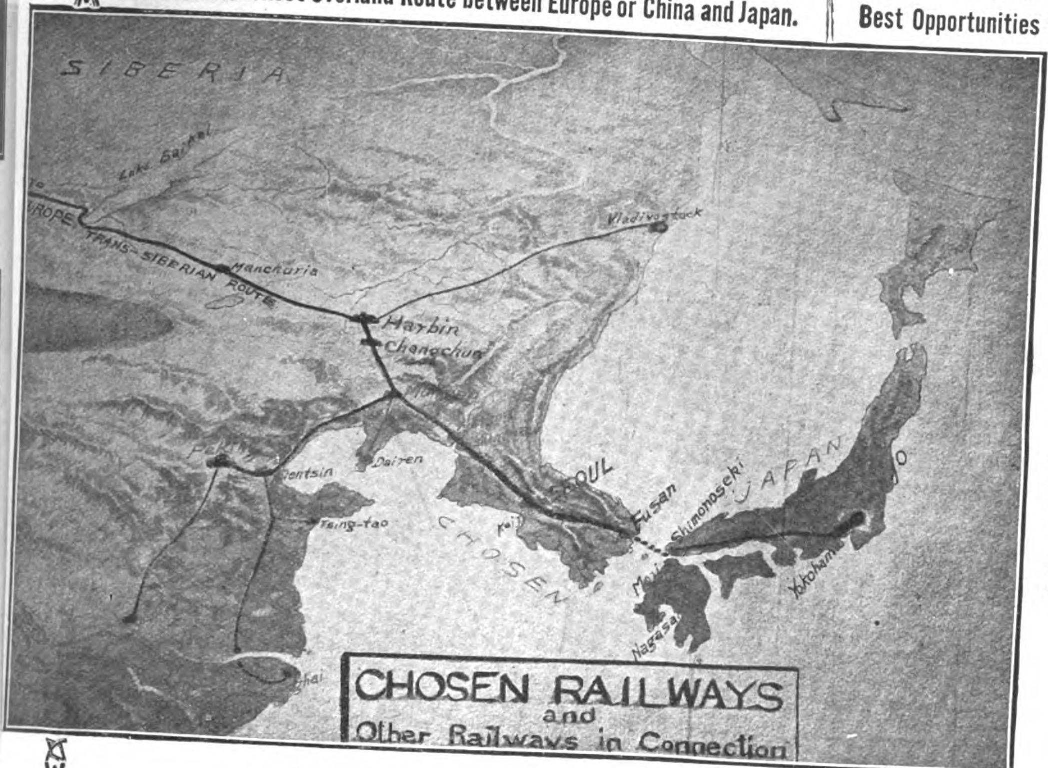
*Express

The Manager (British Section) Kowloon, HONGKONG. The Administration (Chinese Section) CANTON.

# Chosen Railways

**Most Important Link in the Round-the-World Routes via Siberia.**
**Safest and Quickest Overland Route between Europe or China and Japan.**

**Only 10 hours, Sea Passage between the Continent and Japan.**
**Best Opportunities for studying Unique Conditions in the Far East.**




## *Chosen-Manchuria Express*

**Fusan-Keijyo (Seoul)-Mukden-Changchun**

Weekly Service. Most Up-to-date Accommodation: 1st and 2nd Class Sleeping Cars and a Dining Car.

CONNECTIONS:

With the Trans-Siberian Express.
With the Tokyo-Shimonoseki Train de Luxe.
With the Peking-Mukden Train de Luxe.

## *Daily Express*

**Fusan-Keijyo-Antung**

Twice a day Service, taking all class Cars, besides 1st and 2nd Class Sleeping Cars (Keijyo-Fusan section only) and a Dining Car.

CONNECTIONS:

With trains on the South Manchuria Ry.
With express trains on the Japanese Rys.

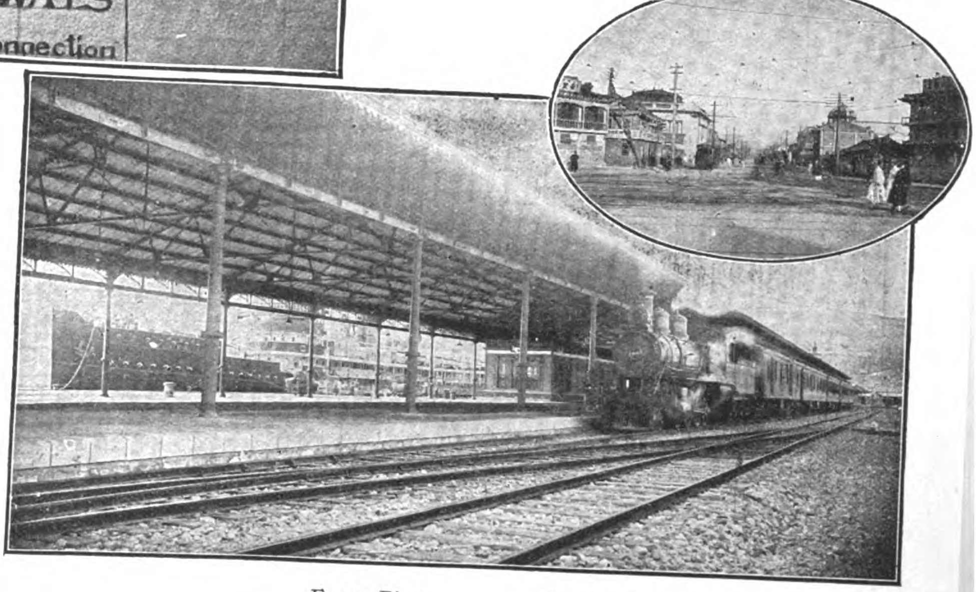
## *Through Traffic*

Stations open to through traffic are as follows:—

**South Manchuria Railway.**—
Dairen, Changchun, Mukden, Yingkou, etc.
**Chinese Eastern Railway.**—
Tsitsihar, Manchuria and Harbin.
**Chinese Government Railways.**—
Hsinmingfu, Shanhaikuan, Peking, Tientsin, Shanghai, Nanking, Tsinanfu, Hankow, Nankow and Kalgan.
**Russian State Railways.**—
Irkutsk, Odessa, Warsaw, Moscow and Petrograd.

**Chosen Railways.**—
Fusan, Keijyo (Seoul) Heijyo, † Jinsen and † Chinnampo.
**Japanese Railways.**—
(via Chosen)
Tokyo, Yokohama, † Nagoya, Kyoto, Osaka, Kobe, Shimonoseki, Moji and Nagasaki.

† No through traffic to or from points of the Chinese Eastern Railway and the Russian State Railways.



Fusan Pier

A scene in Keijyo (Seoul)

## *Ticket Agencies*

The International Sleeping Car Company; Messrs. Thos. Cook & Son; The Nordisk Resebureau.

## *Hotels*

Under the Direct Management of the Railway Bureau.

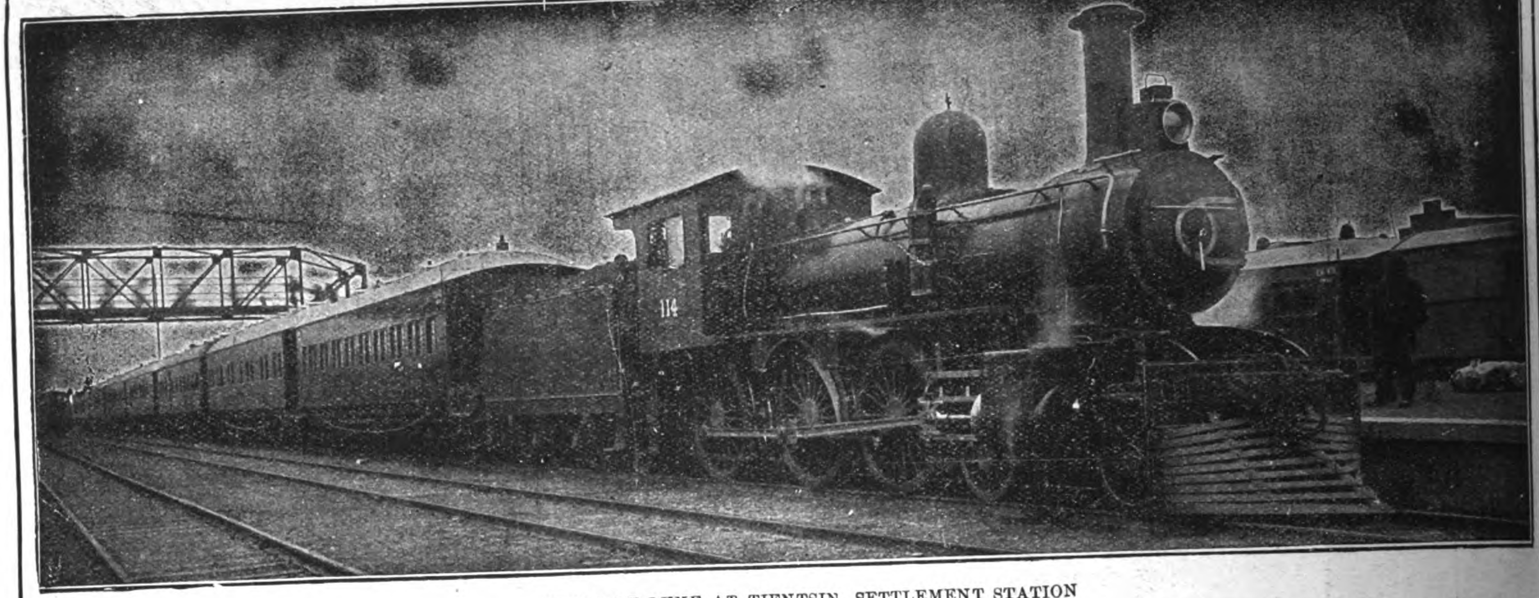
CHOSEN HOTEL AT KEIJYO (Seoul).—Cable Add: "CHOHO" 80 bedrooms mostly with bath; Motor-cars meet guests at the station.

STATION HOTELS AT FUSAN AND SHINGISHU.—The most convenient and comfortable stopping places on the upper floors of the two station buildings.

FOR FURTHER PARTICULARS PLEASE APPLY TO

# Railway Bureau of the Government-General of Chosen,

**Cable Add: "SENTETS."** **Ryuzan, Chosen.** **Code Used: A. B. C., 5th Edition.**



TRAIN DE LUXE AT TIENTSIN SETTLEMENT STATION

# CHINESE GOVERNMENT RAILWAYS OF NORTH CHINA

THROUGH SERVICE FROM PEKING TO MUKDEN, CONNECTING AT MUKDEN WITH THE SOUTH MANCHURIA EXPRESS FROM TRANS-SIBERIAN ROUTE: AT PEKING CONNECTION IS MADE WITH THE PEKING-HANKOW RAILWAY FOR HANKOW AND YANGTSZE PORTS, AND INTERMEDIATE POINTS REACHED BY THE CHEN-TAI LINE TO TAIYUANFU, THE TAO-CHING LINE, AND THE PEINLO RAILWAY TO KAIFENGFU AND HONANFU. CONNECTION IS ALSO MADE AT PEKING WITH THE PICTURESQUE KALGAN LINE, "THE ROAD TO THE GREAT WALL."

## THE RAILWAYS OF NORTH CHINA PASS THROUGH THE MOST INTERESTING PART OF CHINA

**PEKING:** THE CAPITAL, WITH ITS WALLS, PALACES, TEMPLES AND TOMBS.—**TIENTSIN:** THE GREAT TRADE CENTER OF NORTH CHINA.—**TONGSHAN:** THE LARGEST MINING AND INDUSTRIAL TOWN IN THE COUNTRY.—**SHANHAI-KWAN:** WHERE THE GREAT WALL ENDS AT THE SEA.—**NEW-CHWANG:** THE BUSY COMMERCIAL PORT OF MANCHURIA.—**MUKDEN:** THE ANCESTRAL HOME OF THE MANCHU DYNASTY. A MINIATURE PEKING, WITH ITS WALLS, IMPERIAL PALACES, TEMPLES AND TOMBS.

PEKING STATION

FIRST CLASS SLEEPING BERTH TRAINS DE LUXE

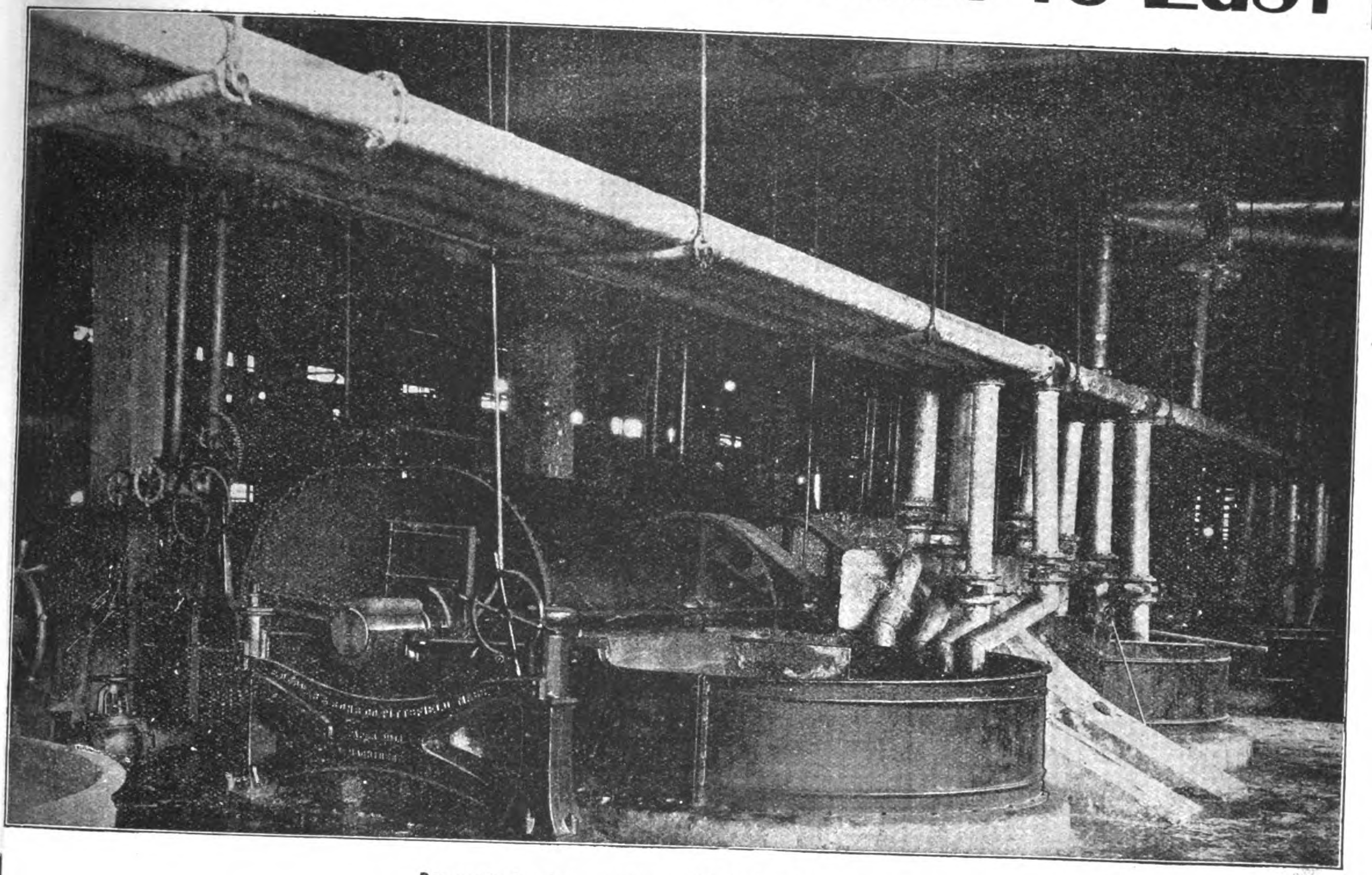
THE THROUGH TRAINS ARE EQUIPPED WITH BUFFET AND DINING CAR SERVICE, AND A COMFORTABLE, MODERN TRAIN DE LUXE OF COMPARTMENT SLEEPING COACHES HAS BEEN PLACED IN OPERATION THIS SEASON TO CONNECT WITH THE THROUGH SERVICE OF THE TRANS-SIBERIAN AND SOUTH MANCHURIAN RAILWAYS

For further information apply to any office in America or Europe of

**The Cie. Internationale Des Wagons-Lits, Thos. Cook & Sons, or Railways of North China**

**TIENTSIN, NORTH CHINA**
**By order of Directorate**

# The Iron That's Made to Last



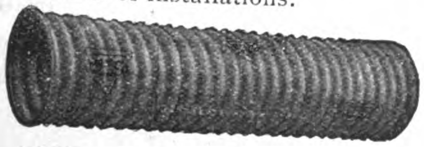
Demonstrates its superior quality in hundreds of uses.

# ARMCO IRON
## Resists Rust

Because of its unequalled PURITY and the SCIENTIFIC CARE given to every process of its manufacture.

### Armco Iron Corrugated Culverts

for highway and railroad drainage, have proven their convenience, reliability and lasting quality in thousands of installations.



Their corrugated form and interlocking joints give them immense strength and a ***resiliency*** which enables them to conform without injury to settling and shifting foundations.

***Send for Catalogue.***

The illustration is of a Pulp-Beater in a great paper factory. The hood over the rolls is of Armco Iron. When the machine was first installed this portion was of ordinary steel. In two years the fume-laden steam had corroded it to utter failure. It was then replaced with Armco Iron, and this after four years of constant service is apparently as good as new.

This is the material **par excellence** for Roofing and Siding Sheet Metal Work, Corrugated Culverts and all sorts of exposed metal installations.

THE AMERICAN
ROLLING MILL Co.

***Licensed Manufacturers Under Patents Granted International Metal Products Co.***

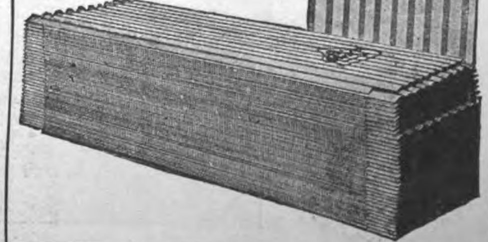
**Middletown, Ohio, U.S.A.**

**Cable Address: "Armco, Middletown"**

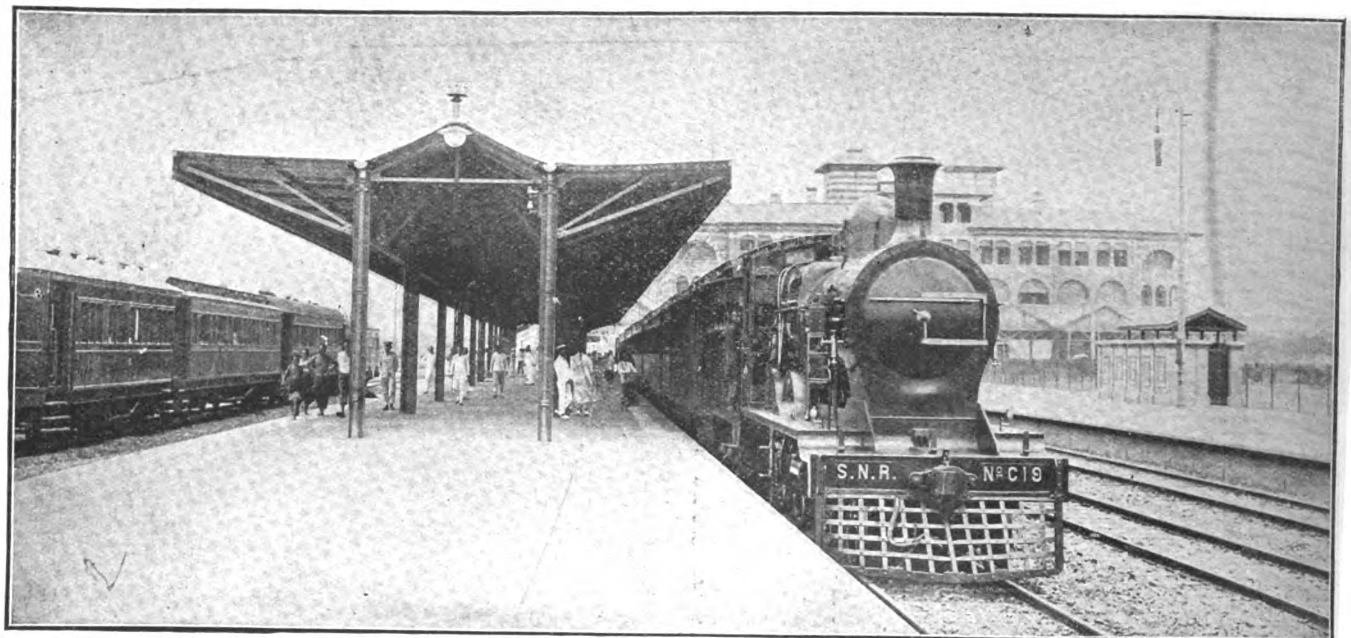
CHINA AGENTS
**THE CHINESE—AMERICAN Co.**
SHANGHAI
**ATLANTIC, GULF & PACIFIC Co.**
MANILA, P. I.

### Armco Iron Galvanized Corrugated Roofing and Siding

will certainly save money in the long run for those who have buildings to maintain in tropical climates or where they are exposed to dampness or salt air.



# The Line of A Hundred Pagodas

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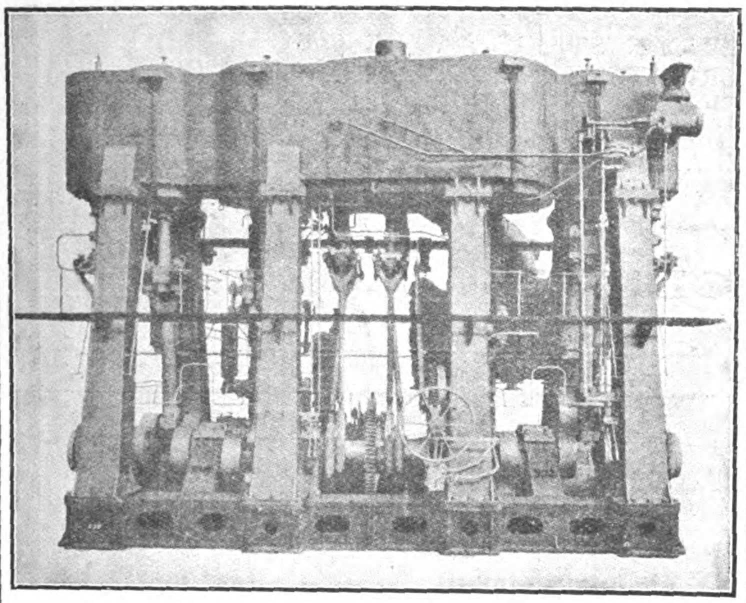

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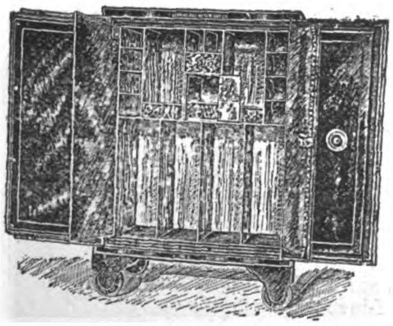

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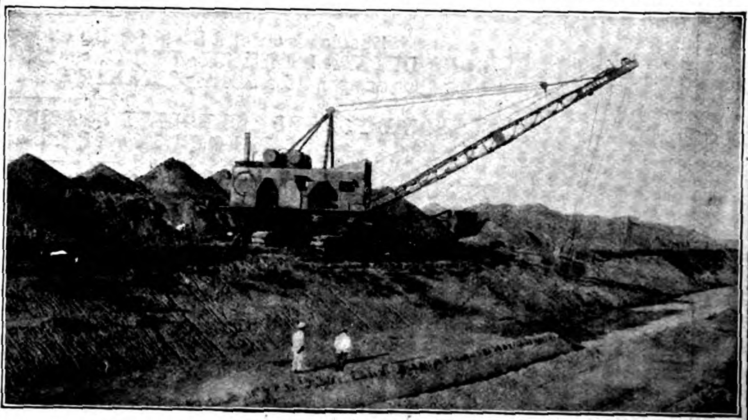

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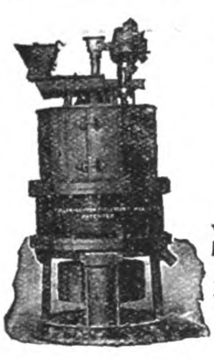

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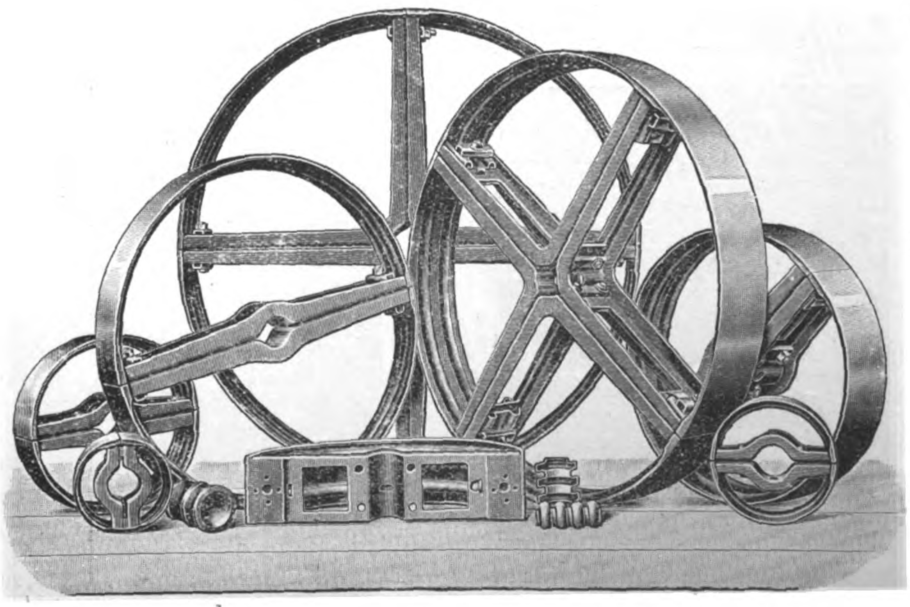

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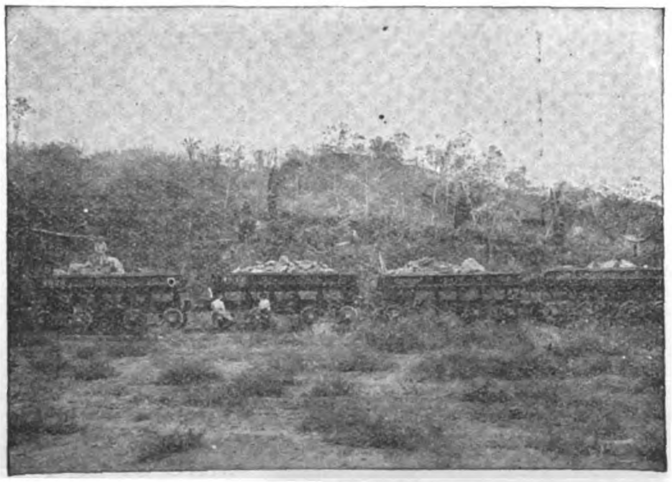
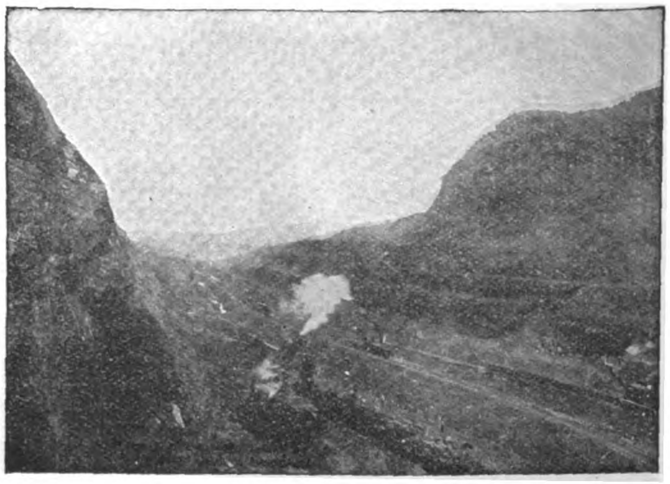


The Panama Canal was built with the aid of Western Air Dump Cars.



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THE FAR EASTERN REVIEW
COMMERCE :-: ENGINEERING :-: FINANCE

VOL. XIII. SHANGHAI, JULY, 1916 No. 2

# THE PROBLEM OF THE RACES
# THE FUNDAMENTAL ISSUE OF THE PACIFIC

*Foreward:* The main features of this article were published in THE SUN of New York City on July 25 a year ago, under the title of THE MENACE IN THE PACIFIC. It has been recognized by leaders of opinion in America as sounding the key-note of the racial issue, and indicates that Japan's insistance on the recognition of racial equality for her sons, and her refusal to admit the justice of the economic side of the question, together with her unchangeable military and naval programmes, is based on her determination to adhere to her family customs and theory of nationalism, which, when carried by her colonists to other countries, not only becomes a menace to the peace and happiness of weaker states, but paves the way for the ultimate ascendency of Oriental philosophy and civilization by the sheer weight of numbers. Until this problem is solved with justice to East and West, there can be no peace in the Pacific. As the press of Germany and the teachings of her learned professors, together with the boastings of her military leaders, paved the way for the present cataclysm in Europe, so the press of Japan, the statements of her high officials, the teachings of her educators and the jingoism of her militarists, are preparing the people for expansion and a war of the races. We cannot close our eyes to vital facts.

Japan desires her people to enter America on the same plane of equality as the white races of Europe. Her intense pride is wounded because of the discrimination against her subjects. Her national honor is involved. Unless the door is opened, the preservation of her honor demands that it be battered down by force. So Japan is feverishly arming, laboring night and day in the ceaseless work of enlarging, strengthening and polishing her already ponderous military machine against the inevitable day of conflict. Japan wishes equal recognition in America and the British Colonies with the people of Europe. Is it because her national honor compels this recognition or is it merely special pleading to obscure other and more paramount issues?

Japan is a very small country. It is already overpopulated and congested, and room must be found abroad for her rapidly increasing people. Japan proper, according to the highest authorities, has doubled its population in the last fifty years. It is now more than 55,000,000. In another fifty years it will be 110,000,000. In twenty-five years—within the lifetime of the present generation—Japan must find homes outside her jurisdiction for 27,500,000—where?

In these few words is found the paramount issue that confronts Japan and keeps her rulers awake of nights, and causes alarm and uneasiness in China and Russia. This great overwhelming fact so patent to her immediate neighbors, is however invariably obscured or ignored altogether in the many discussions and arguments bearing on Japan and her policies. A red herring has been drawn across the trail of this fundamental fact by the many plausible, logical and at times forceful arguments adduced by her astute statesmen and able writers in defense of her aims and ambitions. A small coterie of influential American publicists, educators and divines, who strangely enough are nearly all prominently associated with the peace and anti-armament movements and have been decorated by the Mikado, have been inspired by these specious pleas from Tokio, and vigorously uphold and defend Japan under any and all circumstances. By tacit consent there appears to be a delicate reluctance to discuss openly the existence of the deep underlying forces which lie at the root of Japan's problems. It is however absolutely essential that these matters be brought under the lime-light, to gather an intelligent appreciation of all the minor, troublesome questions which spring from the parent issue. Let us therefore sweep away all the irrelevant arguments and reasonings of Japanese publicists and examine those fundamental forces whose steadily expanding pulsations threaten to beat down the barriers of the West against the East. There can be no two deductions from a clear and honest presentation of the facts. Let the facts then speak for themselves.

There is an old saying that sex morality is a question of geography. The maxim is true. The high standards of morality on which the Christian civilization of Europe and America are based, perceptibly crumble away as one journeys eastward towards Asia. Religion, laws, custom, respect for women, the necessity of providing adequately for our progeny, combined with the higher standards and cost of living, have created artificial restraints upon the reproductivity of the white race. East of Suez "where there are no ten commandments" these Western standards and ideals disappear. Woman descends from her lofty and honored pedestal, and becomes the plaything of the stronger sex and the breeder of his children. As one reaches the Extreme Orient, the Christian conception of morals is superseded by an opposite philosophy. In its place is found an intense man-making mania, that logical expression of ancestor

worship which demands an unbroken line of male descendents to pay homage at the shrines of departed generations. Early marriages, polygamy, concubinage, female slavery and an utter absence of what the West would call an atmosphere of morality, all combine to create the facilities and conveniences for the rapid multiplication of the race. The peoples of the East breed with a happy disregard for the Western ideas of how a numerous progeny is to be reared and educated.

This phase of Chinese life, has been most perfectly described by Mr. L. Y. Ho of the University of Pennsylvania in the *Annals of the American Academy of Political and Social Science* (January, 1912). He says:

"It is the imperative duty of the children to make the parents happy and allow no semblance of sorrow ever to cross their path. In order to see that they are happy, they have to be at home. The unenlightened parents having nothing better to occupy their minds, indulged themselves in an intense craving to see grandchildren about them. Accordingly, they married their children early when the contracting parties hardly understood what matrimony was, much less the responsibilities therein involved. The outcome was the reckless production of weak offspring. The young husbands not knowing anything of the world, in many cases still in school, had to fall back on their parents for support—not infrequently permanent support. These same ignorant parents not satisfied with seeing the marriage of one generation, and its offspring, generally proceeded to marry their grandchildren as fast as they could grow, or as long as there was a cent in the leaking purse, or a chance to borrow, in order that they might be fructified and be sure before their death that the family worship would be carried on."

The same conditions with slight modifications apply with equal force to Japan.

Dr. Sydney L. Gulick, one of the most pronounced pro-Japanese publicists, in his work on *The Evolution of the Japanese* devotes two chapters to the "Moral Ideals" of the nation, and says;

"Concubinage and polygamy being thus sanctioned by the classics became an established custom in Japan. She (woman) is valued first as a begetter of offspring, second as a domestic......Public as well as secret prostitution has enormously increased during the last thirty or forty years."

These are basic facts. They are not my opinions or deductions. In this difference of sex ethics or philosophy lies the great problem that this generation or our children will be called upon to face.

The Christian nations of Europe, excluding Russia, in addition to the people of the United States, adhering to their conception of morals, require 90 to 100 years in which to reproduce or double their numbers. In France, with her super-civilization, the tendency is for the race to die out. These are also basic facts. The Oriental races practicing a different philosophy, double their numbers in from fifty to sixty years, despite the ravages of hunger, plague and pestilence, famine and flood, earthquake and typhoon, and merciless butchery in warfare.

In this short paragraph is embraced the real problem of the ages, the vital question that Western civilization, and America in particular is called upon to face. As long as there is land enough in the East to support the increase, the West will be in no danger, but as the years of the century pass, the pressure will break through all bonds, and, in the fight for the survival of the fittest, the weakest will go to the wall. Japan has arrived at the critical stage of her history. The pressure from within cannot be restrained. They must have their place in the sun. The same forces which impelled Germany to seek colonies and empire, and brought on the world war, are actively at work in Japan, only to a greater degree. America alone cannot see it. She dreams of Gentlemen's Agreements, peace and arbitration treaties, the Hague Tribunal, courts of international justice, leagues of nations, and other super-civilized ideals as the instruments which will do away with war. But as long as the old customs hold, as long as the present ratio of increase in the Orient is maintained, as long as there are millions being ushered into the world without provision for their future, there can be no solution to the problem. As long as we remain asleep, while the myriads of the East are arming to conquer their place in the Sun, it is idle and criminal to talk of peace and brotherly love. The millions of Asia demand territory, they must have it or die out, and other nations must be able to defend and hold what they have, or be swept away and engulfed by the rearing waves of Asiatic immigration.

America has been singled out because of her supposed weakness and defenseless condition as the great Western nation who will be challenged and compelled to open her doors to the peoples of Asia. The exclusion policy and the Monroe Doctrine bar the way to the golden lands of opportunity. A civilization whose ideals, customs and traditions are diametrically opposed to those on which our homes and culture are founded demands entrance to our shores.

Japan is knocking at our Doors. Timorously at first she pleaded for admission, but secure in our great size and strength we refused to listen. But the years have rolled by. America has become rich and apparently indifferent to world problems. Little Japan has faithfully followed the example of Germany. She has been steadily and silently arming, building up an immense machine to enforce the respect hitherto denied to her. America, over civilized, has slumbered, lulled into a sense of security by the soft and agreeable words of her peace-at-any-price and anti-armament advocates. Our altruism, our great friendship for all peoples, are held up as insurmountable barriers to any great conflict. We dream of Utopia and the abolition of war. "Our example will so shine," declares Mr. Bryan, "that the other great land-hungry, strong-armed nations of the world will become ashamed of themselves, and be led by the force of reason to lay down their arms and embrace our ideals."

But the tapping of Asia on the Door has increased in volume. The gentle and meek sound has changed into an irritable and impatient pounding. The butts of a million rifles clanging angrily on the parade grounds of Nippon resound above the clamor at the door. The request for admission will soon be changed into a peremptory demand. The business end of the million rifles, the frowning muzzles of the great seige guns and the splendid efficiency of a powerful navy, stand prepared to batter down the doors if the bars are not withdrawn. And America dreams on, confident in the logic and reasoning of her peace advocates to hold in check the flood without the gates, and ward off the blow that years have been spent in preparing.

Japan is hammering at the Door. Far removed from our sight she is preparing the great battering ram to break through. Japan demands compliance with the treaties. Race equality has developed into a point of national honor. The masses have been carefully educated for the last two years to consider the California discriminations as a badge of national humiliation.

Japan is preparing to go to war to enforce the equality of the races. Australia, New Zealand, British Columbia and the Pacific Coast States of America standing shoulder to shoulder proclaim loudly to the world that they cannot and will not permit the unrestricted entrance of the Asiatic. The Premier of British Columbia in terse and unmistakable language informed the Imperial Government of Great Britain, that as a self governing state, British Columbia would not tolerate any interference with its sovereign rights to enact such laws as it deemed appropriate for the restriction and exclusion of Asiatic immigration. The people of Australia and New Zealand remain firm as adamant in their fixed policy of *total* exclusion. They are colonies of the mighty British Empire. Britain's great strength protects them.

The Pacific Coast States are as determined to exercise their sovereign rights, and, treaty or no treaty, they declare their intention to enact laws for the preservation of their status as a white man's country. This conflicts with the general treaty between the Federal Government and Japan. Great Britain has also a similar treaty with her Ally, but its provisions cannot be enforced without disrupting the Empire. The Federal Government of the United States cannot interfere with the Pacific Coast States from enacting such laws as they may deem

appropriate for the preservation of their status, without provoking civil war.

Prohibited from forcing the issue with the British colonies because of the great might of the Mother Country, Japan is preparing to demand and exact from America that recognition of her equality which will open the doors to her excess millions. America is unprepared She has submitted to her rights being interfered with in China, and has permitted Japan to take over her place as Sponsor for the Open Door. She believes that all matters of national honor can be amicably settled by the logic of reason. The Japanese mind, sounding true to its Oriental instincts, cannot rise to these sublime heights of altruism and high-mindedness, and sees in our attitude only the shrinking of the coward. She cannot attack her mighty Ally, so purse-proud, defenseless, and, to her mind, pusillanimous America, whose national spirit the world believes has been undermined by years of luxurious prosperity and the teachings of her pacifists, must recognize her equality and admit her children to the Eldorado of their dreams.

Her position is correct under the treaties. It is recognized by all honorable Americans. There are those who, ignoring the vital underlying issues and seeing only the question of American honor involved in the treaty, maintain that if California persists in creating trouble by her stiff necked attitude, it would serve her right if Japan did get mad and land troops and punish her. "Why should California be permitted to drag the whole country into a war over such a small matter?" they contend. "If war should come as a direct result of California's discriminations against the Japanese in violation of the treaty, let California take the consequences." All they can see is the treaty. "Japan is right. Let down the bars. The West needs a few hundred thousand more Japanese to develop its resources, and Eastern capital is impatient for profits, denied by the labor organizations of the Coast. Let the thrifty, sober, hard-working and low priced Japanese labor enter, and do away once and for all with the possibility of war with Japan." And our sense of national honor compels us to listen to this advice and act on it.

But above the appeal to our national honor rises the instinct of self-preservation. This warns us in the most emphatic manner that equality of the races, will, within a generation transform the Pacific Coast States into a new center of Asiatic philosophy. Racial equality with its concomitant unrestricted immigration could have only one result. Within twenty-five years fully one half of Japan's constantly increasing surplus, or roughly 17,000,000, would swarm into this Promised Land. Once there, firmly rooted in the soil, their customs, traditions and philosophy would do the rest.

Yet we are in honor bound to comply in full with the terms of the treaty, and Japan stands ready with her huge and efficient military machine to exact when the time comes, unequivocal recognition of her equality. The proposal to limit future immigration from other countries to a fixed percentage of those already in the country, has its merits provided that Japan does not again take the position that such legislation while placing her on a plane of equality with other nations, in reality works out as a direct and pointed discrimination. Japan may accept it for awhile, but it can never serve as a permanent solution. With her it is a matter of self-preservation also. Expand or die, is the problem confronting her. True, her people can conform to Western customs and philosophy and so diminish the abnormal birth rate. This however is only an idle thought, as it may be expected that rising Japan will never consent to any interference with or modification of her established customs. The Japanese will continue to multiply. Race suicide or regulation of births is only for the highly educated and super-civilized Westerner.

There are many otherwise well informed Americans and Europeans, who, recognizing the importance of the vital issue, contend that the solution to the problem as far as we are concerned, is to permit Japan to have her way in the Orient, and, by dominating China, divert her surplus millions into the fertile and sparsely settled fields of Manchuria. With Korea under her control and a practical suzerainty over Manchuria and Inner Mongolia, Japan's attention would be diverted from America and the question solved. Analysis will however prove, that at its best, this is only a temporary solution or a mere tiding over the crisis.

China already has a population estimated at over 400,000,000. The man-making mania of the people is developed to the highest degree. The fecundity of the race and ratio of increase is the same as that of Japan, if not greater. The situation has been ably set forth by Mr. J. O. P. Bland in his *Recent Events and Present Policies in China*, where he devotes considerable space to an explanation of the fundamental forces at work in this country. He says:—

"Of these the chief is the procreative recklessness of the race, that blind frenzy of man-making born of ancestor-worship and Confucianism, which, despite plague, pestilence and famine, battle, murder and sudden death, persistently swells the numbers of the population up to, and beyond, the visible means of subsistence. By means of polygamy, early marriage and the interdependence of clans, the Chinese people struggle to fulfill at all costs the inexorable demands of their patriarchal system: bring their predestined victims of hunger and disease into a world that has no room for them; breeding up to a food limit which, amidst toil and penury incredible, has long since reached the breaking point. A nation which implicitly believes, and unanimously acts on the belief, that a man's first duty in life is to provide as many male heirs as possible for the comfort of himself and his ancestors, inevitably condemns the body politic to regularly recurring cataclysms....Even if China were governed as India is governed, its elements of disorder and unrest sheparded and controlled by the strong arm of centralized authority, the vast natural increase of its millions would speedily present a problem unsolvable except by the wholesale emigration which neighboring continents forbid."

The situation so ably described above exists also in Japan and Korea. The latest statistics of Korea, show what the real rate of increase would be if the strong hand of centralized authority brought internal peace and happiness to the millions of Chinese. For the Koreans under strong Japanese rule, are doubling their numbers in 24 years, or increasing eight times as rapidly as the white man in Europe. Already this irresistible expanding force is overthrowing the traditions and customs of time immemorial, and compelling the Chinese people to forsake their ancestral villages and seek new homes and the necessaries of life in the undeveloped lands beyond the Great Wall. The strip of agricultural and pastoral land bordering the Gobi Desert outside the Wall, is being rapidly colonized and brought under cultivation. The rate of progression into the desert is over a mile a year along the entire Mongolian border. Manchuria and Inner Mongolia offer the only sparsely settled and fertile lands in Asia where the Chinese people can expand and remain under their own laws and follow their own customs.

The Arctic altitudes of Tibet are uninhabitable. Mongolia proper is one vast dreary waste, and, at its best, in favored spots, is only suitable for the nomads who roam over the country. Chinese Turkestan is being slowly dessicated and the rivers engulfed by the ever encroaching sands of the desert. The only fertile region susceptible of cultivation in the Ili district has been earmarked for exploitation and ultimate annexation by Russia, despite the fact that the valley is already thickly settled by the industrious Chinese farmers. It will be then seen that the Chinese cannot expand beyond their own borders.

The growth of China is the constant nightmare of Russia. The rulers of Russia labor under no delusions. They are never asleep. They have watched the growth of the yellow races for many years and have been industriously preparing against the day when they will be called upon again to stand as the outer bulwark of the white against the yellow civilization. Russia knows that the clash must come. It is no academical subject for them; they are face to face with the stern reality.

Over 2,000,000 colonists from European Russia have been provided with homes and lands along the boundaries between Siberia and China to serve as the outer human barrier against the encroachment of the yellow man into the white man's preserves. Yet in spite of exclusion laws, labor edicts and other

harsh discriminatory measures against the entrance and employment of Chinese in Russian territory, they cannot be kept out. There is already one Chinaman for every Russian colonist along the border lands. The economic superiority of the former, combined with a keener intelligence, constitutes an advantage in the struggle for existence, before which the stolid Russian peasant has to go under. The fecundity of the yellow man is only approximated by the procreative powers of the Russians, who are also doubling their numbers in fifty years, and in that time will have to find room for another 150,000,000 people. Russia's only outlet is in Siberia and Asiatic countries, and her growth must be at the expense of China.

The nations of the world have closed their doors to the unrestricted entrance of the Chinese. The latter do not worry about it, as they prefer their own country and their own civilization. As long as they have room within their own borders in which to expand, there will never be a Chinese problem. But if they are to be deprived of these outlying regions remaining under their own jurisdiction, where they will be free to expand according to their customs, and be compressed within the already congested confines of the Eighteen Provinces, a problem will be created for the world to solve within our life time before which the Japanese question will pale into insignificance.

If we allow the same ratio of increase to the Chinese as to their co-religionists in Japan, it will be seen that in fifty years the population will ascend to 800,000,000. Added to the Japanese augmentation of 140,000,000 this will make a total of nearly a billion people. Where is the land to be obtained for these myriads? The earth will be called upon to provide for an increase of 470,000,000 Chinese and Japanese alone. In the next twenty-five years—within our life time—China will have to provide room for an increase of 200,000,000 in addition to Japan's 35,000 000. The only available fertile lands open for colonization within their own sphere are located in Inner Mongolia and Manchuria. Manchuria is 363,700 square miles in extent (North and South Manchuria combined) and already supports a fixed population of 15,000,000 or an average of 41 to the square mile. The most congested province of China is Shantung with 528 inhabitants to the square mile. If for the sake of argument we allow that Manchuria is capable of similar congestion, it would provide an outlet for another 177,000,000 which is 58,000,000 under the estimated increase, and, again for the sake of argument we may concede that these will be absorbed by Inner Mongolia and the other fertile and undeveloped corners of the country. In other words, the sustained increase of population in China and Japan at its present ratio for the next twenty-five years, will theoretically absorb all the available fertile lands of China, and the pressure will begin to exert itself along the entire Siberian border, and the long expected clash between the white and yellow races must take place.

It becomes clear on analysis that the domination of Manchuria by Japan cannot solve the question for the latter, unless they are permitted to purchase and control the land outright so as to forestall settlement by the Chinese. Right here we have one of the overwhelming necessities which forced Japan's recent demand on China for the privilege of owning and leasing land in Manchuria and Inner Mongolia. It throws the lime light on the far sighted statesmanship of the Japanese rulers, and once again proclaims loudly to the world that Japan is fighting for her existence. China is to be crowded out of her patrimony. Her birthright is to be taken away. The weak is to be pushed to the wall by the strong. It is the time old, immemorial struggle for the survival of the fittest, written in phrases of modern diplomacy.

The struggle between the Chinese and Japanese for the control of Manchuria and Inner Mongolia will be an epic in the world's history. The Japanese cannot thrive and exist in competition with the Chinese. The keen and merciless economic superiority of the latter will drive the former defeated from the field. Japan already has had a taste of this. Chinese coolies are not allowed to work in Japan, they are quietly and quickly hustled out. The economic issues raised in California by the employment of Japanese in competition with white labor, find their counterpart in Japan whenever Chinese have been employed in large numbers in the industries. The thousands of Japanese coolies who flocked into Manchuria in the wake of the victorious army were compelled gradually to withdraw and leave the field to the sturdy, rugged and better equipped Manchus. If the Chinese land-holders in Manchuria refuse to sell or part with their lands, Manchuria will offer no permanent solution to Japan's problem. Two hundred million Chinese will be in competition with 35,000,000 Japanese for the economic control of the province. Japan's only hope then would lie in compulsory sales or confiscation of Chinese properties. As this procedure is impracticable and almost impossible without resort to actual hostilities, Japan will either have to resort to the sword or admit defeat. With Manchuria barred as an outlet for her excess millions, where will Japan turn to in her desperate struggle for existence?

[The main features of this article were written at the time the Japanese ultimatum was presented to China in May of last year, and were published in the *New York Sun* of July 25 under the title "The Menace in the Pacific." It is interesting to read in an article on "The White Peril" that the above prediction is coming true. In the last number of THE FAR EASTERN REVIEW, the Japanese military author of "The White Peril," reflecting the sentiments of the war party in his country, already finds fault with the Chinese Government for attempting to conserve the patrimony of its own people. He says:

"The attitude of China, both high and low, seems to be growing from bad to worse of late. . . As a first step of its new colonial policy in preparation for the coming mixed residence, the Chinese Home Office (Ministry of the Interior) sent 800 peasants from Shantung and Chihli to various parts of East Mongolia to offset the possible growth of Japanese influence there. In September, the Chinese Government prohibited the free disposal of the land owned by Prince Ching. The major part of the land in Manchuria belongs to the members of the Ching dynasty, and Prince Ching is one of the greatest land proprietors, so that the above veto is practically an attempt to thwart Japan's desire to acquire any rights in Manchuria."

It is only a question of time, when the Japanese, thwarted in their designs to control the land of Manchuria, will again bring pressure to bear on the Chinese Government, in the further attempt to absolutely dominate this province. The economic struggle for the control of Manchuria is already on, and because the Government has sent 800 colonists from the congested province of Shantung into the only place where they have room for their surplus, we find the Japanese military writers using this as cause for friction. Manchuria and Mongolia are still Chinese territory, where the Japanese have simply acquired rights of residence. It has not been handed over to them, as yet. But the handwriting is on the wall. Where will the Chinese go, if they are excluded from their own province? For that is the only way that Japan can make a success of her colonization of Manchuria and Inner Mongolia. As the Chinese, Koreans and Formosans are prohibited from competing in Japan with Japanese workmen, so the same laws will have to be enacted in the new sphere, or the Japanese will go under before the intense competition of those they have despoiled.]

The Chinese are peculiar, likewise childlike and bland. But their peculiarities, childishness and blandness cannot be compared to the eccentricities and tortuousness of the Japanese mind and character. The Japanese are more than peculiar.

They are not pioneers. The spirit that animates the Anglo-Saxon to get out into the wilderness and combat nature, savage foes and wild beasts, to reclaim the land to civilization, appears to be lacking. They have Formosa which could provide homes for many more millions, but the savage head-hunters exercise a deterrent influence. The Japanese also dislike extremes of climate. Formosa is too hot. Hokkaido and Saghalien are too cold. They must have a temperate clime in which to be supremely happy. They don't want the Philippines. Wouldn't take them as a gift. "No, not even if America gave them a bonus of a billion dollars to go with them." It has become the fashion in Japan in the last year or so to emphasize this statement for the particular benefit of Americans. Yet strange to say they have flocked to Hawaii, and are now actively

organizing companies for the colonization and exploitation of the South Sea Islands conquered from Germany. In view of their over eagerness to settle in Hawaii and other isles of the Pacific, it is very difficult to understand just what is behind their professed reluctance to have the Philippines as a gift, as the same tropical climatic conditions prevail in all these lands. It forces one to the belief that the statement is widely circulated to allay any suspicions we may have of their ambitions. It would also tend to the belief that the Japanese prefer the places where they can rapidly prosper without the financial outlay and the hard labor incidental to pioneer work. As Japan lacks the capital for pioneer work, it follows that her people must enter territory which has already been opened and developed by others.

So we must face actual conditions. Formosa is too hot. Saghalien and Hokkaido too cold. Korea is too poor for any great colonization scheme. Manchuria offers but a temporary solution. Where then is Japan within the life time of the present generation to find homes for her excess millions? If there is no room on the mainland of Asia, and the people disdain the extreme hot and cold lands embraced within the Empire, and the Government is strenuously building up its army and navy, the question begins to assume considerable importance for America, and other countries bordering the Pacific. Where are they to go?

Canada, New Zealand and Australia protected by the mighty navy of Great Britian, answer, Not Here! Russia has answered in no uncertain tone by double tracking the Trans-Siberian and constructing the Amur railways, in addition to planting millions of Cossacks east of Baikal and making Vladivostok impregnable. These significant truths should compel Americans to indulge in a little thinking. Everybody else is wide awake and prepared.

As the far-seeing and astute statesmen of Japan scan the shores of the Pacific for a future home for their people, the great undeveloped and sparsely settled coasts of America beckon to them across the sea. This Eldorado flowing with milk and honey, and abounding in wealth and opportunities is unprotected. There is no army visible. What navy there is, is in the Atlantic, and the Panama Canal is not yet open for its passage. If only the equality of the races was fully recognized, millions of Japanese could swarm annually into and overrun the country beyond. The only barrier is what the Japanese delight to term "race prejudice." Stung to the quick by this assumption of pre-eminence and unwillingness to accept her people on an equal footing, Japan is determined to break it down. So she goes on arming and preparing her people for a clash.

Japan believes that war is her only hope. The lives of her future millions depend upon it. And the man who deludes himself into the belief that any compromise such as further Gentlemen's Agreements or other measures which operate against Japan's full and free equality and right to enter the country on the same level as the European, is criminally shutting his eyes to vital fundamental facts. All the diplomatic arrangements in the world cannot regulate the fundamental forces at work. Words of peace and friendship cannot stop the multiplication of the Japanese people. The struggle for existence will proceed. The weakest and least prepared will go to the wall. The clash may be postponed, but it is sure to come and within the life-time of the present generation. It is nearer perhaps than we imagine, if we accept at their face value the sayings and writings of the leaders of New Japan.

The report of the Japan Sociological Society, published in the December number of the *Japan Magazine* the message of Japan to the people of the West. It proclaims that the age old struggle for the survival of the fittest cannot be shirked, and within the lives of the present generation the clash must come. The preliminary skirmishes are now taking place under the cover of secret diplomacy. The rumblings in Asia, the cry of millions for the right to live are echoing above the soft polite utterances of the statesmen. It will not be long before the irresistible forces at work will break through all bonds and annihilate the feeble efforts of governments to keep them under control. Unless a fundamental solution is found, and found quickly, there can be no peace in the Pacific. Within the next fifty years the yellow races will come into their own; the Asiatic will overwhelm the whites and the civilization of the West will, in time, disappear. The law of nature will prevail. The rapidly multiplying Asiatic, acknowledging no legal, moral or religious restraints on their reproductive powers, will by sheer force of numbers smother the artificial civilization imposed on the Christian nations by law, church, custom, traditions and their adherance to a code of sex ethics which makes for birth prevention and race suicide.

"The Japan Sociological Society estimates that the earth is capable of sustaining comfortably about 2,300,000,000 according to the American standard of living; and if they adopt the German standard as many as 5,600,000,000 can well live on the earth, but if they live according to the Japanese standard 22,400,000,000 could easily find sustenance on mother earth. . . The present population of the earth is at present estimated at about 1,750,000,000 and, at the present rate of increase, in the next hundred and fifty years it will have reached about 10,000,000,000."

These are alarming truths. Their significance is lost on the American people and the people of Europe, who, surfeited with wealth cannot realize the intense bitter struggle for existence that is taking place in Asia. The Japanese know. Their island empire can barely sustain the already congested and prolific population, increasing at the rate of 1,125,000 per annum. Japan is facing a fact, an actuality. They must expand. They cannot and will not immigrate into those lands in Asia where they encounter a lower standard of living than their own. They insist that they must go into the lands of greater opportunity, into the white man's country on the other shores of the Pacific or into the lands of promise in the southern hemisphere which "God made for them, but which were stolen by the British before they were ready to take possession of their inheritance."

Their scholars are looking a long way into the future, and foresee the gradual rise of their race to the overlordship of the world. Japan can only expand at the expense of some other nation. She must take by force what is denied her by diplomacy. So her scholars almost unanimously advocate war as the only solution to their problem, and the government arms and prepares against the day when the very existence of its people will depend on the weight of its armaments and the valor of its soldiers.

In the above statement the leading scholars of Japan frankly acknowledge the justice of America's viewpoint on the issues created in California. The American government has repeatedly informed the Japanese Government that these so-called racial issues have their foundation in economic causes, and do not arise from race prejudice or an unwillingness to recognize the manhood equality of the Japanese. The Japanese government, however, in all its diplomatic rejoinders rejects this explanation and insists that our attitude is traceable to intense racial antagonism. The Japanese Sociological Society now reports that ten Japanese can thrive where only one American can live in comfort. They sustain the position of the American and invalidate the arguments of their own government in its many notes of protest.

Let us now analyze the concluding statement of this learned society. They say that the present population of the earth (1,750,000,000) will increase to 10,000,000,000 in a period of a hundred and fifty years. How does this compare with the facts? The population of the world in 1800 was estimated at 640,000,000; in 1900 it had risen to 1,543,000,000, or, roughly speaking, the population doubled in eighty years. If this normal rate of increase is maintained during the next hundred and fifty years the population of the earth will be a little over 6,000,000,000, or 4,000,000,000 less than the Japanese estimate. This indicates plainly that the Japanese scholars calculate that certain races will multiply much more rapidly than others, and leads to the question as to what races may be expected to expand two or three times more rapidly than others.

As previously pointed out, the white races, adhering to Christianity and monogamy, practicing a code of morals on which their civilization is based, require 90 years in which to double their numbers, while the super-civilization of France has actually tended to the gradual death of the people. The Mongolian races adhering to a different philosophy, in which ancestor worship, polygamy, concubinage and another code of sex ethics prevail,

will double their numbers in about 60 years. The Japanese in the last decade, have surpassed their previous records for fecundity, and are now doubling their numbers in 48 years. The Dutch statistics show that the Javanese are doubling their numbers in 52 years, while the latest Korean government reports disclose the phenominal increase of 17 per cent in four years, or a doubling of the population in twenty-four years, or eight times as rapidly as the white races. The increase in India and China is kept down by floods, famines, plague, cholera, poverty, infanticide, congestion and other causes. With modern sanitation, hygiene, flood prevention, extension of railways and other reforms which make for the elimination of these obstacles to natural increase, it will not be long before the lives of millions and millions now annually sacrificed will be saved. Where will these myriads find work and food?

For all practical purposes the statement may be made that the Mongolian races of Asia are now multiplying twice as rapidly as the white races. If conditions in Korea may be taken as a criterion of the fecundity of the Asiatics under favorable conditions, the future looms dark for western civilization. The Pan-Buddhistic races—Japanese, Koreans, Chinese, Hindoos, Javanese, Siamese and Annamites—may be said to number at present about 800,000,000; under favorable conditions in fifty years, they will increase to 1,600,000,000; in one hundred years to 3,200,000,000 and in a hundred and fifty years to 6,400,000,000. The white races now numbering also about 800,000,000 will increase to 1,600,000,000 in ninety years, or about 2,700,000,000 in one hundred and fifty years. Analysis of the statement of the Japanese society therefore discloses the truth that in one hundred and fifty years, they expect the Buddhist nations to outnumber the whites or Christians two and a half to one.

But they assure us that the earth can only support 2,400,000,000 people living according to the American standards. In fifty years there will be 1,600,000,000 Asiatics and 1,050,000,000 whites. In twenty-five years the earth must find room for 400,000,000 more Asiatics. Japan will require room for at least 30,000,000. Asia is already overflowing. Russia is doubling her numbers in fifty years, and in that time they must have room for another 150,000,000, and they are holding the best part of Asia as their preserves. The Buddhist nations cannot expand in Asia. They must go across the seas. Where?

What is the solution to this great world problem? While the white race in Europe is being weakened by the greatest conflict in history, the peoples of Asia are multiplying more rapidly than ever. Their demand for a place in the sun will become louder and stronger during the next decade. Will the civilization of the West open wide its doors for the unrestricted entrance of those whose family traditions and sex ethics will overwhelm them in time, or, will the Eastern civilization under the leadership of Japan, decide to change its old customs and accept the ethics of the West as the basis of their new life?

Has the East the right to adhere to customs and practices which promote abnormal fecundity, and then demand the further inalienable right of invading and settling in other lands whose inhabitants have imposed artificial restrictions on their powers of reproduction? Are the races of Asia to continue to exercise their Right to Spawn and demand unrestricted entrance into the lands of their more prudent neighbors? If this is the conception of the Japanese jingoes and militarists, there is only one answer to this problem. The great war of the races will then be inevitable. The weak will go down before the strong. Victory of the East, will mean the gradual disappearance of western civilization, overwhelmed and swallowed up by the weight of numbers.

The issue is not one of racial equality. It is simply a great economical problem, the same identical problem which Japan faces when her sons come into competition with Korean, Formosan, Chinese or other Asiatic labor, and, as Japan has been compelled to enact laws for the protection of her own people, the white men have had to protect themselves against the economic superiority of the Japanese. If the Japanese would forsake their old customs, traditions and ideals on sex matters, and be willing to sever their allegiance to the Mikado, when they migrate to new lands, and become patriotic citizens of those countries which extend them hospitality, the great racial problem as far as they are concerned, would disappear, and the glad hand of fellowship would readily be extended to them, for the many manly qualities they undoubtedly possess. The remedy lies at their own hand. Their most enthusiastic advocate and admirer, Dr. Sydney L. Gulick, in his book on *The Evolution of the Japanese* points the way.

"*Strict monogamy, with the equality of duties of husband and wife, is the remedy for the disease," he says.*

The full, logical expression of Oriental sex philosophy lies before the eyes of the people of Japan, and can be read in the last annual report of the Governor General of Korea. There we have the full effect on the population of early marriage, polygamy, concubinage, slavery and prostitution run wild, and without the plagues and pestilence, floods and famines and other visitations of a merciful Nature which in the past have placed a check on the increase. Seventeen per cent in four years is the tale, which means a doubling of the population in 24 years, or eight times as rapidly as the white races of Europe. Mr. Bland's picture is here reproduced, and if China were governed as India or Korea, the gravity of the problem would soon become intensified and unsolvable, "except by the wholesale emigration which neighboring continents forbid." Is this the picture that the militarists of Japan have in mind, when, after imposing their will upon China, they will start out to conquer the world?

Again we ask, what is the solution to the problem? The Japanese apparently have none other than expansion by the sword. I have been accused by the Japanese publicists in the United States of being anti-Japanese and of offering no solution to the issues. I would suggest the adoption of the remedy proposed by Dr. Gulick. This is fundamental. Then let the Japanese Government appropriate some of the millions now being poured into the maw of the army and navy departments to reclaiming the lands of Korea, in the same manner and with the same spirit that the American authorities are bringing under cultivation the deserts of the western states. A few millions expended in serious development and colonization work in the Hokkaido, Formosa and Korea, would provide homes for another 50,000,000 Japanese. Hokkaido alone will support many millions. The rigor of the climate there is no worse than the winters of Canada or the American northwest, to say nothing of Alaska, which has been developed by the hardy Anglo-Saxons in search of homes. A modification of the laws which will permit Japanese emigrants to other countries to renounce their allegiance to the Emperor, and become citizens or subjects of other States, is imperative to a solution of the problem, if Japanese are to be welcomed as settlers in other lands. No occidental government will tolerate dual nationality in the future, after the lessons of the last two years.

As long as the Japanese Government is dominated by a military clique, and spends every yen it can raise or borrow on the expansion of armaments, and her publicists and leading statesmen preach the doctrine of the predatory State, and openly covet the lands and possessions of others, and, at the same time refuse to modify their customs or permit Japanese to change their allegiance, the problem can only be solved in one way. The result will be, that alliances or no alliances with the powers of Europe, the time will arrive, when, for mutual protection, the present friends and well wishers of Japan will be drawn together by religious and racial interests to protect themselves and their posterity from the menace of Asia under the overlordship of Nippon. The tone of the Japanese press and the preachings of her professors and militarists have sounded the warning. There is a solution to the problem, but not along the lines advocated so openly in the Japanese press.

GEO. BRONSON REA.

# NIPPON UEBER ALLES?

Geo. Bronson Rea

For the past eighteen months I have been trying in a modest way, working against the combined opposition of the Japanese Publicity Bureau and its decorated American auxiliaries, to enlighten the people of the United States on the fundamental problems and issues of the Pacific. These issues are embraced, first, in the determination of the Japanese to adhere to their family traditions and compel other nations to recognize the equality of their offspring within the white man's domains, "if not by peaceful means then by force of the iron hand and the mailed fist," and, second, to carry out the policy laid down years ago by Count Hayashi, to "take advantage of the opportunity that must some day occur in the Orient," and, by dominating China, "place meddling Powers in their places, as and, occasion presents, meddle in the affairs of others."

Naturally, such temerity on the part of a mere journalist, aroused the ire of the well organized and highly paid group of official Japanese publicists in America, and the coterie of peace and anti-armament beneficiaries of the Carnegie Endowment Fund, together with educators, eminent divines and sundry publicists, nearly all of whom proudly wear the decoration of the Mikado.

When the semi-official *Japan Year Book* for 1914 tells us **"that the object of expansion of national armament is primarily to guard our interest in China and Manchuria,** *and next to be prepared against a possible emergency with the United States of America,*" I interpret the words as meaning the United States of America is held as the imaginary enemy of Japan.

When the semi-official *Japan Financial and Economical Monthly* reluctantly makes the admission that:—

**"Although our Foreign Office has done its best under the circumstances the internal conditions of America make a peaceful solution of the problem impossible,"** I again interpret the words literally, as expressing the real sentiment of the ruling classes, which was further emphasized at the time by the *Kokumin*, the most influential daily in the Empire, in the following words; **"As long as Japanese are subjected to discriminatory treatment in the United States, there is no hope of any permanent friendship between the two nations."**

Count Okuma, the Premier of Japan, and the official mouthpiece of the Government, declared that "to know one's enemy and know one's self is a strategic maxim that should always be acted upon," and then proceeded to explain that the enemy was located in the West, and the bad feeling was engendered by racial prejudice. Of course, this may have referred to Germany, but coming as it did, at a time when the California matter was uppermost in the thoughts of the Japanese, it is idle to speculate as to what particular nation the good Count had in mind as the enemy.

What did Count Okuma mean when he wrote his great "uplift" article on the two civilizations? He pointed out that the "civilization of the East was superior to that of the West," and "now that the East had learned the secrets of the West, the East would again come into its own. *Japan is now cleaning house in preparation,*" he concluded. What did Count Okuma mean when he penned the following lines on the Mission of Japan:—

"The mission of Japan is to bring about international civilization.

"Japan alone has been able to meet occidental civilization and utilize it without detriment to her own, thus harmonizing the two.

"Japan has faced the flood and has not been overwhelmed. She has revealed marvelous powers of adaptation and assimilation. If she maintains the method and the pace she has begun, Japan stands the best chance of all nations to become the harmonizer of the east and the west.

"It is not out of any notion of self-importance or racial conceit that we feel the responsibility resting upon us as a nation. The facts are before us and we must face them. We did not create them or manipulate them to place ourselves in so great a position.

"It is the outcome of obedience to the laws of the universe. It is because our capacity for adaptation is so vast that this opportunity and privilege is thus thrust upon us.

"I am only sorry that so many of my countrymen are as yet blind to the meaning and duty of this great responsibility laid on Japan.

"They are too indifferent and prone to lives of ease. Too easily content are they with the empty title of a first-class power, and lack the spirit essential to tackling and dealing with this all-important problem. Such a mistaken attitude must be uprooted socially, politically and in every other way.

"A nation recreant to its divine mission is lost.

"Our military and naval power will amount to nothing if we fail in our duty to humanity.

"It will profit us little to acquire all the learning of the west, if we have nothing to offer in return; it is more blessed to give than to receive.

"If Japan performs her great mission of bringing east and west into profitable and friendly communion, she will have done the world an invaluable service, sufficient to make up for all the west has done for Japan.

"Western nations have already confessed their failure to be able to assimilate oriental civilization. Japan alone can digest the two.

"Thus the whole world pouring its best into the alembic of our minds will have it transmuted for service elsewhere.

"If Japan rises to her duty and her opportunity there is no telling to what greatness she may attain; whereas if she is indifferent to it she can never hope to be a great nation.

"I firmly believe that our people have the capacity to do this worthy service for mankind, and I urge them forward towards accomplishing it."

Is this Nippon ueber alles?

This has been characterized by the Japanese press propagandists in America as a great "human uplift" document, but it is well to remember that the same doctrine is being preached in Japan by other eminent leaders, as the ultimate goal of their "heavenly gift of militarism." The following choice selection from the writings of Japan's Grand Old Man, leaves nothing to the imagination: **"We must at all costs fight against the Kaiser's spirit of conquest until we have crushed it........Our attitude towards the American people will be the same. We will attack any mistaken ideas or policies without mercy."** And more recently the Premier of Japan said:—

**"It would be proper for us to look on the California question as a preliminary test to sound the capacity of the Japanese whether we are susceptible of still further development. Our future destiny may be said to depend on its successful solution......If the result be unsuccessful, we Japanese may hereafter have no outlet on the Pacific side, notwithstanding the rapid increase of population at home."**

In response to the invitation of the Peace Congress held in Oakland in November last, Count Okuma (as President of the Japan Peace Society) cabled that "*peace was a fallacy as long as one race considered themselves superior to another,*" and in his speech before the Diet on December 7 ulto. he warned his hearers that "*not a day can be lost in carrying out the naval*

*repletion program,*" while Admiral Kato, the Minister of the Navy, said about the same time that "*the naval program must take precedence over all others.*

A general review of the Japanese press for the last two years would indicate that the soul of New Japan as interpreted by her foremost statesmen, publicists and professors, dreams solely of conquest and the expansion of the race by means of the sword. As a writer in the *Chuo Koron* puts it; **"Owing to the cramped position of Japan, society is unable to expand; thus creating misery and making peace uglier than war." He believes "Japan must rise above her present position, if she is to be happier and make life worth living,** *and that she can only do by war.* **It is all very well for countries surfeiting in wealth, like England and America, to talk about peace, but what Japan most needs is to break the bonds that restrict her expansion and make the Pacific the center of her activity, and establish her own colonies as vents for immigration. Until this chance to expand comes, pessimism cannot be expected to disappear from Japanese society."** Or as the *Yomiuri* expresses the same thought: **"It is a mistake to charge Germany with unjustifiable intrigues and a depraved mind because of her endeavors to expand. A nation should always look to its own interests, and, if possible, should even cultivate a determination to conquer the world. The survival of the fittest is the first law of nature; heaven supports the fit to the destruction of the unfit."**

The Japanese press reeks with articles and statements similar to the above, while her publicity agents in America blindly supported by their decorated dupes, vehemently insist that Japan is the most peacefully inclined nation in the world, and it is a heinous crime for any one to misinterpret the statements which appear in the vernacular press. There is no higher authority on Japan than the *Japan Chronicle*, and its veteran and able editor, Mr. Robert Young. In the June 29 number of the *Chronicle* there appeared an editorial on the "Militarism of Japanese Publicists." It should be read by every editor in the United States, as it corroborates all that I have been trying to make clear for the last eighteen months. The following extract is interesting and illuminating:—

**"It appeared from a general review of Japanese opinion published in these columns recently, that there is an almost complete absence of any realization of the mischief-making wrought by militarism itself, and as complete an ignoring of the strategical security which Japan enjoys.** *In the collection of opinions gathered, there was only one writer who deprecated an aggressive militarism as the best policy for Japan. Even so, the anti-militant party may be said to be over-represented in the collection, since it was hard to find even one, though more would have been given had they been discovered, if only for the sake of showing a variety of opinion.*"

**"Mr. Nakashoji is the Head Jingo. He wishes Japan to develop her army and navy until her 'heavenly gift of militarism' renders her more formidable than ever........This doctrine 'reaches its logical consummation in Mr. Arai Teijiro's conception of Japan as the Ruler of all the Powers in the World,' promoting the welfare and freedom of all the nations of the globe." Mr. Young remarks that this has a fishy smell, and cites Poland, Servia and Belgium as enjoying them at the present moment, and, we may add, that Korea and Formosa are standing object lessons of how Japan will promote the welfare and happiness of other nations if she gets the chance.**

**Mr. Young concludes that "Mr. Arai Teijiro is, after all, the most logical of them all. He sees that the policy advocated must set before itself the ultimate domination of the world. That is an old ambition that has always led to ruin."**

It is well for Americans to recall that the Head Jingo is that same Mr. Nakashoji, ex-minister of communications, who in March of last year became so wrought up over the fortifying of the Panama Canal, and who wrote in the *Dai Nijon* as follows:—

**"What is the mission of the Panama Canal?" And, answering the question he says: "Seeing that its opening has hastened the solution of the Pacific question, and that numerous forts are being built at both ends for its defense, I cannot help but to think that a great Power disguised as the Republic of Panama has suddenly arisen in Central America."**

**"When the war is over America will discard the Monroe Doctrine for Pan-Americanism as a new principle of twentieth century politics.** *That the racial competition will be prevalent in the future is too plain to need elucidation.* **In the face of this state of affairs, the Japanese people have been providentially dispensed to harmonize the civilizations of the East and the West and benefit 1,000,000,000 people of Asia thereby.**

**"It must not be forgotten that it is important for them to join hands with the Russians, Britons and Chinese and obtain a predominant position for solving the Pacific question.** *But luck will never smile on the idle; therefore the people of Japan must take due measures for accomplishing the object.*"

What is the Pacific question that the Head Jingo refers to? The naval and trade supremacy which will open the way for the acquisition of colonies for the surplus millions of Japan, and the battering down of the barriers which obstruct their entrance into the domains of the white man in Canada, America, New Zealand and Australia.

Typical of the "peace loving propensities" of the Japanese is an extraordinary article which appeared in the last number of *Dai Nippon*, a monthly magazine which advocates a "Greater Japan" policy. The article is entitled "The Once-in-a-Century Opportunity about to be Missed." The article reflects the views of the military party and laments that now that peace talk is in the air, Japan may lose her golden opportunity.

**"That Japan has occupied Tsingtau and picked up a few rocks in the Pacific is altogether too little for this Empire, considering the magnitude of the epoch-making war. But if the war is to continue for some years yet, we have some hope of making up for lost time. Anyhow we should not stop with what we have already done; it is not too late to begin afresh the activities in the cause of the Empire......We must set our minds on fulfilling at least the three following conditions:—**

**(1) In the solution of all problems relating to the Orient, Japan must be dictator.**

**(2) Japan shall maintain an honorable position, independently of Great Britain, and thus keep all her international rights and interests.**

**(3) All anti-Japanese problems shall be swept from the face of the earth.**

**We should make Britain open the doors of Canada, Australia and New Zealand to our trade and immigrants; we should make France and the Netherlands open Indo-China and the Dutch East Indies respectively to our trade and immigrants, and we should make the United States abandon all attempts to reject Japanese immigrants......But in order to carry our purposes to a successful conclusion we must have military power and readiness. We should be prepared** (1) *to open war with the United States during the present war, and* (2) *to cope with the possible pressure after the war of the British navy. War with America need not be averted absolutely. The American navy today is more powerful than ours, but when her naval expansion scheme is carried out, the disparity between the two nations' naval strength will have become so great that there can be no chance of Japan's challenging the United States with any hope of victory. If we must fight, we should fight now. So in case we receive undue interference from the United States, we should be resolved to take up the American gauntlet, at whatever cost.*

*As regards our provisional attitude towards the British navy, it is of course proper that Japan should confide in the good will of the Alliance. But if it should happen that Britain crosses Japan's interest, we must adopt the policy of bringing pressure to bear on the British navy by assisting the German navy. A combination of the German and Japanese navies would be a match for the British navy, and this should be borne in mind. . . . . The once-in-a-century opportunity may pass at any time and we hereby exhort the Government and people to resolute exertion in the cause of the Empire.*"

Such articles in one of the leading magazines of Japan, bearing the stamp of authority, and coming after Count Okuma's tardy defence of the alliance with Britain, compel one to give pause and ponder. It reminds one of the utterance of Dr. Toyokichi Iyenaga, head of the Japanese publicity bureau in America, when, in an interview published in the *New York Times* last March, he declared, "*if Britain proves lukewarm to the desires of Japan, it may well be that she will fly to the arms of Germany.*"

One of the leading Jingoes of Japan is Mr. Kazan Kayahara, the "Maximilian Harden of the Japanese press." Mr. Nakashoji is only a pussy-footed pacifist compared with the fiery editor of the *Third Empire*. Mr. Kayahara is *some* warrior. It was he who declared that "America is a woman's country who wants peace at any price," and who advocates the use of the "iron hand and the mailed fist" to enforce the admission of Japanese into the white man's countries in the Pacific. Herr von Kayahara is a disciple of Bernhardi with an overwhelming admiration for the Teutons and a hearty contempt for the Honorable Allies of his country. He insists that Japan must expand to the southwards into Australia, "*the land that was destined by God for the sons of Nippon, but which was stolen by the British before the Japanese could take possession of their inheritance.*"

In the June number of the *Chuo Koron*, he returns to his favorite theme and asserts:

**"Japan's diplomacy must always be guided by her internal conditions. Japan is called upon to solve the question of the disposal of her surplus population, her most urgent problem. The climates suitable for Japanese emigration are the United States, Canada, South Africa, South America, Australia and New Zealand" or, if you please, the domains of the white man. "China, India, the Malay Peninsula and the South Seas are not well adapted for Japanese emigration," he opines.**

Then after a rather complicated remarking of the map of the world to the satisfaction of Japan, Herr von Kayahara once more shows his love for the Honorable Ally by declaring:

**"As for Japan, Australia will be large enough for the accommodation of any number of immigrants Japan may care to send there. This will dispose of the question of Japan's surplus population once and for all. Herein lies the necessity of an understanding between Germany and Japan. Unless Japan gets hold of a sufficient area for the disposal of her population, all talk of an alliance or non-alliance is meaningless. China and India will serve no purpose to Japan except as producers of raw materials and consumers of manufactured products."**

Herr Kazan von Kayahara is not alone in his predatory instincts. He finds a boon companion in international highway robbery in the person of Mr. Takekoshi, the well known Japanese publicist and author of *Japanese Rule in Formosa*. Mr. Takekoshi is the one Japanese writer who has succeeded in having his war talk taken seriously. In the early months of the year he threw a journalistic bomb into the quiet,stolid ranks of the peaceful Hollanders, by advocating the seizure of the Dutch East Indies by Japan to ensure the latter's strategical security. Unlike the Americans or the British, the Dutch accepted the article as an indication of Japan's future policy, and they have been ever since actively reinforcing their army and defences in Java and Sumatra, and preparing to hold their own against the "highwayman of the Pacific," when he pays them a visit. He can't fool the Dutch. A few extracts from Mr. Takakoshi's article taken from the summary published in the *Japan Magazine* will help to throw the lime-light on this new doctrine of Japanese militarism:—

**"He starts out with the contention that Japan must by all means seek extension of territory to meet the demands of her ever increasing population. . . . Nations sometimes acquire territory by what is called peaceful penetration, but Japan may have to adopt aggressive measures, and be called warlike by western nations, who have already taken their full by warlike means. It is easy to be peaceful when you have all you want, but it was not by peaceful means that the British Empire became so vastly extended. If the Japanese wish to become as powerful as western nations they will have to adopt the same policy of expansion as western nations followed until they got enough and then began to talk peace.**

**"Japan should look for her outlet southwards. . . . It is futile to prosecute a policy of expansion in Manchuria.** ***While holding what we have there, we*** **should aim chiefly toward the south. The islands we have taken in the south are only rocks and of no value.**

"*Japan must command the Sunda Straits, Sumatra and Java. She must occupy and fortify these islands until no European fleet can menace the Far East. The people of these islands are her own kindred. They are now in Dutch hands, but if that country cannot civilize them and use them to protect the Orient, they become a menace to us, as they are now to Britain in sheltering German spies who are operating in India.*

**"THUS JAPAN WOULD BE JUSTIFIED IN OCCUPYING THEM FOR HER OWN PROTECTION. Holland has not fully occupied them; they are mere protectorates; and Japan can conclude treaties with the rebel chiefs of the islands, in the same way as Holland is trying to do, or has done."**

The doctrine advocated by Mr. Takakoshi is of particular interest to America through its direct bearing on the Philippines. If Java and Sumatra are a menace to the strategical security of Japan, and it becomes necessary for the latter to take over control of the islands and fortify the Sunda Straits, how much more of a danger to Japan's strategical position are the Philippines, especially if they are granted immediate independence! If such a predatory doctrine is once accepted, where will it end? When the Dutch East Indies and the Philippines are dominated by Japan in the interest of the peace of the Far East and the strategical security of Japan, the next menace to her security will be Hawaii and Alaska. This doctrine is the logical evolution of the past policy of the Japanese Government. Korea was annexed because it was a menace to the security of Japan; then the control of Manchuria became essential to safeguard her position in Korea, and, as Japan's grip on this Chinese province was firmly clinched, it became imperative to extend her sway over Inner Mongolia in order to protect her interests in Manchuria. The doctrine has now been boldly expanded until the Japanese press and Government loudly insist that the peace of Japan can only be assured by their full control of the affairs of China. When Japan has consolidated her hold on China, and controls the infinite resources of men and wealth of this country, it will become necessary then to dominate India to preserve the tranquillity of Asia. In this connection it is interesting to recall the price that Baron Shibusawa, through his mouthpiece Mr. Kinnosuki, asked America to pay for the abandonment of Japan's insistence on the entrance of her people into America. In a recent number of the *American Review of Reviews*, Mr. Kinnosuki was very candid on this matter, and concluded his article in the following words:

**"Besides, this answer to the Far Eastern question solves also the California problem. Let American capital and Japanese energy develop northern Manchuria and** ***Yunnan*****, and you will see with what an indecent lack of manners 'the politest race on earth' would turn their backs on the smiling foot-hills of California and the thirsty cities of Arizona."**

What is this sudden interest of Japan in the province of Yunnan, far removed from the other spheres of her activities? It is only the logical working out of the "Greater Japan" policy outlined above. The preponderance of Japanese interests in this French "sphere of influence" would pave the way for further expansion to the southwards into Indo-China, complete the ring of Japanese bayonets around China, and, what is more to the point, would establish their control over the southwest mountain passes into Britain's Indian Empire beyond. This will be made clearer by reading the words of Professor Niita of the Imperial University, published in one of the leading Japanese papers early in the year:

**"Independence of India cannot be expected in a short time. After Japan's power has increased a great deal, she may think of extending her protecting hand to India."**

Japan's interest in India is constantly growing. As the "Protector of the colored races of Asia" against the rapacity

"of the white man" the ground must be carefully prepared for that leadership which every Japanese dreams of. An illuminating article appeared in the February number of the *Japan Magazine*, entitled "India and Japan" from the pen of Mr. T. Yamagami. Its significance should not be lost:—

**"There is no doubt something in the oft expressed opinion that the Englishman at home and the Englishman in India are quite different persons. In England one looks for and usually finds a real gentleman of honor, but three or four years in India sometimes brings a change. It is of course the fashion for subjugated nations to speak evil of their conquerors; so one must not be surprised at the degree of Indian criticism levelled at British authority. But where there is smoke there is fire; and if there be some ground for the present degree of anti-British sentiment in India,** *Englishmen must look to what they do in that country; and Japan, as an Ally, has a prefect right to join in the discussion."*

"*Those Japanese who assume that the Indians are capable of rising against the British Government under German leadership and compelling interference on the part of Japan, in accordance with the terms of the Anglo-Japanese Alliance, are quite mistaken. The only real danger to India, so far as it affects the terms of the alliance, is by attack from without; so far as internal troubles go the terms of the alliance do not apply. . . .* **Without self-government peace is impossible in India.**

**Between Japan and India there exists a profound sympathy in religion, literature and tradition and we are accustomed to regard Indians as kindred. . . . Too long indeed Japanese statesmen and scholars have been indifferent to India. . . . . If Japan is to be expected to help in guarding India she will expect greater freedom in that country. . . . The recent action of the Government in acquiescing in the order to deport Indian refugees from Japan will injure our trade relations with India, and our Government should have been more circumspect in heeding it."**

The point of this article will not be lost upon the reader. The terms of the alliance do not apply when internal disorders or rebellion breaks out in India. Remembering the unofficial activities of Japanese *provocateurs* in creating unrest in Korea and China it is not surprising that the British authorities keep a watchful eye on the same gentry in India, which causes Mr. Yamagami to regret that **"there is also a lamentable disposition on the part of the authorities in India to regard Japanese in that country as so many spies; there is always a certain degree of suspicion attaching to any one taking up a study of India on the spot. Europeans having made their own missionaries spies in the countries where they labored, fancied the same thing about our Buddhist priests studying India. Our traders and travellers have also come under the same suspicion. England should not have entered into an alliance with us if she cannot trust us more than this. We cannot be asked to assist in taking care of a country we are forbidden to know anything about."**

In view of the demands of Japan last year, which embraced the right to propagate Buddhism in China, and to send Buddhist priests throughout the country with the same privileges as foreign missionaries, and thereby proclaiming herself "the champion of Buddhism," it would seem that the British authorities in India do not intend to permit these political emissaries to stir up that unrest from within, which might occasion an outbreak that falls outside the scope of the alliance, and so permit Japan to "extend her protecting hand" to her "down-trodden co-religionists." If unrest in China is a menace to the peace of Japan, and requires her to keep a huge army and navy ready for immediate intervention in the affairs of this country, it is plain, that to preserve the peace of Asia, "*Englishmen must look to what they do in India,*" or Japan will be justified in intervention and extending a protecting hand to the Indians, if there is any great disturbance arising out of England's failure to rule the country wisely. The episode of the disappearance of the two Indian political refugees from Tokio on the eve of their deportation to India at the request of the British Government, must not be overlooked in any consideration of Japan's policy to establish herself as the champion of the Asiatic races, and pave the way for that great Pan-Buddhistic Empire which is the ultimate goal of her present policy.

The Japanese conception of their ability to "whip all creation" is well illustrated in a recent speech by General Tanaka, Assistant Chief of the General Staff. He points out the Allies have made no impression on the Western front and Germany is now dominating Western Europe.

**After paying his respects to the Allies, he says that "Japan has to struggle with Germany forever, for on the face of the whole earth there is no country except Japan which is able to try conclusions with Germany. Japan's mission is to drive this powerful nation to the wall. The most important thing necessary to defeat the enemy, is neither shell nor iron, but our flesh and blood," he concludes.**

This from the Sub-Chief of the Japanese General Staff is a "glowing tribute" to the valor of Japan's Allies and the heroism displayed by the French at Verdun. What France and Britain are unable to accomplish along the Western front would be child's work for the soldiers of the Mikado, is the only inference to be drawn from this statement. This trait of the Japanese character is again unconsciously disclosed in an article in the *Japan Peace Movement* magazine, written by Dr. Tanaka, the Minister of Education and former President of Waseda University. The militaristic spirit of Japan and the popular belief that the people are the "chosen of the Gods" and invincible in battle, form the subject of the article, though to the credit of Dr. Tanaka, it must be said that he deprecates militarism and aggressive policies as leading to world confusion and tending to place Japan in a difficult light. But that the spirit exists is attested to by the following extract:

**"To try to remove the prejudice of others while harboring prejudice oneself is the limit of inconsistency. Looking at ourselves, we Japanese cannot say positively that we have no racial prejudice. From one point of view, we have a tendency to look at ourselves blindly as the 'select people of God,' as the Germans do. There seems to be too much self-confidence in us.** *Then the self-confidence of the Germans is general, while that of the Japanese is restricted to warfare.* **By the favor of heaven we have been victorious in the past and have no experience in defeat. This conception seems to be very dangerous for us." Dr. Tanaka closes his article by urging his countrymen "to strive earnestly for peaceful achievements in commerce and industry."**

Or, as Mr. Hirabayashi Heitaro, writing in the March number of *Japan and the Japanese* puts it:

**"It is a disgrace to civilization to allow such a thing as the exclusion of people of different race to remain in vogue. Some one must break down this unfair barrier. Except the Japanese there is no other people in sight who can undertake the mission. Should every available peaceful means fail to secure the desired end, then it may perhaps be time to talk of exploitation of colonies by the use of force."**

After reading the above opinions reflecting the soul of New Japan, the conviction is reluctantly forced on the reader that Japan is arming to conquer lands as colonies for her surplus millions. China is to become a vassal state, the Dutch East Indies are to be seized to ensure the strategic security of Japan, and, by the same logic the Philippines must fall under her sway as soon as they are granted independence by the United States; Australia is to be separated from Britain, as God intended this wonderful land as the inheritance of the Sons of Nippon; Indo-China is to be penetrated from the Chinese province of Yunnan; and, when Japan is strong enough, she will extend her protecting hand to India, and throw her legions into the domains of her Ally through the southwestern mountain passes of China, the only land route through which India can be safely invaded. As for the United States, whose Monroe Doctrine and exclusion laws bar the way to expansion in America and who still upholds the sanctity of treaties as applied to China, she must be attacked without mercy for her mistaken ideas and policies, and preferably now, before the great war ends and while Japan has some chance of success. Alexander the Great, Julius Cæsar, and

(*Continued on Page 61*).

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## CHINA'S RIGHT TO EXIST

**"Sooner than be a silent witness, which means in effect a willing accomplice, to this triumph of force over law, and of brutality over freedom, I would see this country of ours blotted out of the pages of history."**

These soul-stirring words will ring down through the ages of time as the loftiest expression of Anglo-Saxon manhood and ideals. Uttered by the Premier of Great Britain in his famous Guildhall speech of September 10, 1914, they have resounded throughout the world as the battle cry of England. This clear declaration of red-blooded manhood has thrilled the hearts of true men the world over, and quickened the pulses of liberty-loving Americans and set their hearts beating in unison with those of their brothers of a common stock who are waging the fight for the sanctity of treaties and the preservation of the national life of the smaller and weaker states.

Neither can we forget that three weeks prior to the outbreak of the war, Sir Edward Grey, defending the policy of the Foreign Office in China on the floor of the House of Commons, told his critics that;—

"YOU CANNOT APPLY ONE PRINCIPLE IN ONE PART OF THE WORLD AND ANOTHER IN ANOTHER."

The great principles that Britain and her Allies are fighting to maintain in Europe, the principles that the manhood of our Western civilization are unselfishly laying down their lives to perpetuate, have been cynically violated and vitiated by their Oriental Ally in China. The twenty-one demands of last year and the treaties and Notes extracted from defenseless China by the armed might of Japan, cannot be forgotten.

China's right to exist as an independent state and work out her own salvation in her own way, without outside interference, is as dear to the hearts of her people, as is the desire of Belgium, of Servia, of Poland, and other Western states to maintain their national life and independence. China has the right to expect that the principles for whose maintenance Europe is now being deluged in blood, will be extended in the same just spirit to her case. China expects the recognition of the sanctity of the many treaties and conventions entered into by other Powers for safeguarding her integrity and independence, in the same spirit that the world has acknowledged the binding quality of the treaty guaranteeing the neutrality of Belgium. She expects that the powerful nations of the Western world will stand by her in sympathy, forbearance and patience while she puts her house in order and passes through the period of evolution from medievalism into modernity that all other nations and peoples have emerged from with their national independence intact. She expects that the Powers will support her throughout this period of transition in the same spirit of friendliness that they showed to Japan, when, fifty years ago, she passed through her great civil war and crisis. China expects justice.

America has officially placed herself on record that she cannot recognize the impairment of existing treaties as applied to China. Americans are satisfied that the life blood of Britain and France will not be shed in vain, and, when the time comes, these nations, in the interest of the future peace of the world, will also live up to their promises, that principles cannot be applied in one part of the world and ignored in another. Otherwise the great war, the great sacrifice, will have been made in vain.

If, on the termination of the war, and at the general peace conference, the doctrine of the predatory state is not repudiated, if Japan's aggression on peaceful and defenseless China is approved, if it is established that the sanctity of treaties do not apply to this pacific nation, and she is handed over bound hand and foot to the overlordship of Japan, the future of other pacific and defenseless nations is clearly forshadowed. If China is thus dealt with, so will other weaker nations pass under the tutelage and domination of predatory Powers. We refuse to believe that this doctrine will be endorsed and perpetuated.

The future peace of the world hinges on the attitude of the Powers towards China. If might is to be always right; if the weak are to be always the prey of their stronger neighbors, if

China passes under the domination of Japan, with all that this implies to the security and the peace of others, if the treaties wrung by force from defenseless China are to hold good, then the way is paved for greater cataclysms and horrors. For, as the Open Door and the independence of China are shattered, it will only be a question of a very short time when the Monroe Doctrine will be put to the test, and unless America is fully prepared, she in turn will have to fight for her existence. The pace has been set for us. We must arm, and arm quickly, and be prepared to fight for our life.

## OUR PHILIPPINE PROBLEM

The Far Eastern Review maintains an honest difference of opinion with the present administration concerning the Philippine problem of independence. With a full knowledge of the international political forces at work in the Far East, we adhere to the viewpoint that independence of the Islands at this time or in the near future simply means that the new republic would be absorbed by some other Power soon after the Stars and Stripes were "piped down" at Corregidor. To scuttle and run away from our obligations at this time is an act of cowardice, and would be so considered by the other nations of the world. If independence is to be conceded to the Philippines and the United States is to preserve its prestige, it should only be done at some time in the future when our military and naval program has so far advanced that there can be no misinterpretation of our action. We cannot live up to our promises and be just to our wards by scuttling, because the Islands temporarily, are a strategic weakness to our own security.

On the withdrawal of American protection from the Philippines they would automatically fall under the new, all embracing Asiatic Monroe Doctrine of Japan, and, if the newer doctrine expounded by Mr. Takekoshi reflects the sentiment of the military party in that country, the Islands under their own government, would immediately become a menace to Japan's strategic security. The inability of China and Holland to adequately guarantee this strategic security of Japan because of their military weakness, is employed as the argument to justify Japanese domination of the former nation and seizure of the Dutch East Indies. If the latter are already considered a menace to Japan's security, how much more of a danger would a weak independent Filipino republic be, and how long would it be before the flag of the Rising Sun would float over the flagstaff on the Luneta, marking the next resting place of the Golden Kite on its southward flight in search of new homes for its young? The Democratic administration has handled the Philippine question solely from the standpoint of party politics, and an honest endeavor on the part of the President to give expression to the Baltimore platform on which he was elected. The international forces at work in the Far East have been overlooked and ignored. It did not take long for Mr. Bryan to ascertain that the European Powers looked with disfavor on the Democratic plan to grant independence to the Islands under a string of neutralization treaties. Thanks to the recent revolt of the Tammany delegation in Congress, whether prompted by politics or religion, the country has been saved from an exhibition of weakness that would have needlessly sacrificed the national prestige, without any real or lasting benefits to the Filipinos.

However mistaken the Philippine policy of the Democratic party may be from the viewpoint of international politics, President Wilson is to be congratulated on his selection of men to fill the higher insular offices. The appointment of Hon. Eugene E. Reed to the Insular portfolio of Commerce and Police, brings to the Islands a man whose experience eminently fits him to handle the difficult problems of the office.

Mr. Reed is a successful business man and contractor. His home city of Manchester, N.H., has repeatedly shown its appreciation of his high executive ability by electing him to the office of Mayor for several consecutive terms. They then sent him to Washington, the first Democrat from New Hampshire to grace the Halls of Congress for many years, while his party has regularly elected him as its standard bearer in the National Democratic Committee. Mr. Reed has a past record to be proud of. His real record lies ahead of him in the Philippines.

## THE REAL SPIRIT OF AMERICA

Have the profits from war orders blinded the American people to their obligations to civilization? Have the American people surrendered their ideals for the dollar?

I sat in a great hall in Chicago last January, and listened to the inspiring words of the President of the United States, and, with the rest of the audience was profoundly moved, when he declared:—

**"I suppose some of them think that we are holding off, because we can make money while the others are dying; the most cruel misunderstanding that any nation has ever had to face, so wrong that it seems almost useless to try to correct it, because it shows that the very fundamentals of our life are not comprehended and understood.**

**They do not realize that back of all our energy, by which we have built up great material wealth, and created great material power, we are a body of idealists much more ready to lay down our lives for a thought than for a dollar."**

In these elevating words which thrilled the audience at Chicago, President Wilson broke the seal of silence and answered the gibes and insults hurled at the people of the United States by thoughtless belligerents in Europe who have benefited by our neutrality and whole-hearted assistance. Because we have patiently borne with the many infringements on our rights, and refrained from openly taking sides in the struggle for existence in Europe, and have amassed wealth at the expense of those who are fighting and dying for their principles, we are charged with surrendering our ideals for the sake of profits. It is a terrible indictment. Americans have borne it patiently. But is the indictment just? Does the evidence justify the charge? *It does not.*

At another time and at another place I again listened to the clear, emphatic words of one who spoke for the great banking interests of America. The speech was brief and to the point. It carried conviction. The speaker was Mr. Willard Straight, Vice-President of the American International Corporation. He said in effect:—

**"American banking interests hold that the immense profits from the sale of munitions and commissions on loans, represents the life blood of the Allies. We maintain that this great wealth must be held as a sacred trust fund to be employed when the time comes, in co-operating with the Allies to reconstruct their industries and reestablish their trade abroad. These profits are not to be selfishly employed in undermining the trade of the Allies in foreign fields or capturing their markets while they are powerless to compete and hold their position. Nor will American financiers take advantage of the critical needs of the Allies, to exact political advantage or pledges in exchange for their help."**

There is nothing to be added to these words. Mr. Straight voiced the sentiments of the true un-hyphenated American. For Americans have lived up to their traditions, and in adhering to the cause of civilization have willingly, gladly and unselfishly extended financial support to the Allies, when they had full knowledge beforehand that the funds so advanced were to be indirectly but none the less surely diverted into channels that might lead to their own undoing in the future. On the surface the American loans or credits to Great Britain and France might appear to be sordid business transactions to facilitate the piling up of enormous profits for munition makers, but if carefully analyzed, it will be seen that behind these financial arrangements, there shines the real soul of America, and reveals that traditional spirit which unselfishly sacrifices its own interests for the greater cause of friendship and humanity. If we could tear away the veil of diplomacy and get behind the screen of international finance, the scene disclosed would for all time absolve Americans from the taunt of sordidness and the accusation of selling their ideals for the dollar.

G. B. R.

## GOVERNMENT SUPERVISION OVER FOREIGN LOANS

The consummation of the pact between Japan and Russia, ostensibly entered into for the maintenance and defense of their respective interests in the Far East, but in reality directed against a third party, may well prove to be the instrument that will mark a turning point in American state policy. Who is the third party? Japan and Russia are already allied against Germany and are signatories to the general agreement to prosecute the war to a successful finish. No additional alliance against the common enemy is necessary, and, if there was, there would be no need for diplomatic reserve at this time. The only logical deduction is that the understanding is directed against the Power who has refused to recognize Japan's impairments of solemn treaties as applied to the Open Door and the integrity of China. Americans must accept the statements which appeared in the Japanese vernacular press a year ago, that the "third party" is their own country. In view of the financial support extended by America to the cause of the Allies, which helped to make possible the financial recovery of Japan and the rapid expansion of her arsenals and armaments, the new alliance may well lead to the adoption of government supervision over future foreign loans.

When England began to marshal her financial resources and take stock of her foreign investments after the outbreak of the war, the unpleasant truth was disclosed that for many years she had been indirectly advancing the funds for the expansion of armaments whose avowed object was her own undoing. German industries and commercial enterprises at home and abroad had been financed in the London market, thus facilitating, as far as was possible, the concentration of German resources for the enlargement of their military and naval establishments and the storing of huge reserves of ammunition. The deep rooted antipathy on the part of British bankers and merchants to direct interference on the part of the government in business, made impossible that co-ordination between diplomacy and finance which obtains in France and Germany under the regulations conferring on the Foreign Offices supervision over foreign loans. This wise policy operates against French or German money being employed by others to undermine national trade or political policies in foreign fields. With splendid confidence in her impregnable financial supremacy, Britain refrained from enacting similar measures for her own protection. She awakened too late to rectify her error. She is now paying the price.

The financial center of the world has temporarily shifted to New York. The American financier like his British cousin, is stubbornly opposed to official intervention in matters of business; he resents any restrictions on the scope of his operations. As the lessons of the past have been taken to heart by Britain, so the lessons of the last year compel intelligent measures to be adopted in America, by a wise and patriotic co-ordination of statesmanship and finance, working in harmony with those entrusted with national defenses.

The time must shortly come, when, to safeguard national and industrial policies in foreign fields, the American Government will be obliged to follow the precedent created by France and Germany, and since adopted by Great Britain, and formulate an intelligent policy towards foreign loan transactions, withholding diplomatic support if the higher interests of the nation are in any way jeopardized.

The world knows what Japan's policy is in China; the United States government has placed itself on record that it cannot recognize the impairments of the treaties obtained by Japan under compulsion from China; we are constantly being reminded by the press of Japan that vital issues remained unsolved, and that there is a formidable party in that country favoring hostilities and expansion by conquest, and we have the authority of the Japan Year Book that her armaments are directed against the United States, yet, in sympathy for the cause of the Allies Americans silently acquiesced in loan and credit transactions which have indirectly placed Japan in a position to negotiate a treaty with Russia aimed at their own undoing. The spectacle is presented on one hand of a nation loudly demanding adequate defenses, which program is opposed on the floor of Congress because of its excessive cost, and on the other of indirectly financing a possible enemy. Americans hesitate to appropriate funds for their own defense, but hand them over without question for a possible antagonist to hasten the day when she will demand satisfaction for imaginary wrongs.

The damage is already done. It cannot be rectified. It could not have been otherwise. Americans will never request any political advantage or understanding for what has already passed, but with the signing of the new Russo-Japanese understanding, directed against her peace and happiness, the time has arrived when government supervision over foreign loans has become absolutely essential to their national security.

G. B. R.

## STATISTICS OF GOVERNMENT RAILWAYS IN CHINA

The first fruits of the reform in the compilation of Chinese railway statistics and accounts has been issued by the Ministry of Communications at Peking in the form of a preliminary report concerning the operation, finance and working of the Government railways during the first half year ending June 30, 1915. Following this, another semi-annual report will be made to cover the half year ending December 31, 1915.

The new classifications and the series of forms of reports represent the work of the Commission for the Unification of Railway Accounts and Statistics, created by Mr. Chu Chi-chien, former Minister of Communications, under the advisership of Mr. Henry C. Adams. The recommendations of this Committee were adopted with little alteration, and put into effect by Mr. Liang Tun-yen, on January 1, 1915, and ably carried out under Dr. C. C. Wang, Director of the Division of Railway Accounts and Statistics.

The purpose of the Annual Report is to summarize all the reports of the several railways in such a way as to give the Minister such information as may be necessary to enable him to discharge the duties imposed upon him as the official head of the Chinese Government Railways. It is aimed at making it possible to read from the condensed summaries contained in the Report the financial standing and operating results of each individual Line. By examining the statistical tables, it should be possible to compare the efficiency and economy of one railway administration with that of another, or of the administration of home lines with that of other countries, or of any or all of the Government railways with an arbitrary standard set up as a test of local management. The annual Report taken in connection with the monthly and special reports should help the Ministry to answer such questions as may be submitted by the local Directors as well as to devise ways and means for the better management of the different properties.

In devising the form of the Annual Report as well as in compiling it, it has been constantly kept in mind that the railways concerned are Government lines. It is the universal experience of all countries, that in order to get the best results out of the policy of Government ownership, the accounting integrity of the various lines should be strictly maintained. For instance, if advances are made from the surplus of one line to cover the deficit of another, the deferred asset or the transfer of surplus on the one hand and the accounting liability on the other should be clearly set up in the accounts and recorded in the annual reports of the respective lines. The same thing should also be done with the financial transactions between the Government and the several railways so as to keep the complete integrity of the finances and accounts of the different organizations. As the revenues of some of the railways are pledged as security to bondholders according to the loan agreements and considerable difference exists among these agreements, the maintenance of the integrity and individuality of the accounts of each line becomes especially important. Each line has its own history and its own

legal status; and to some extent, each will require its own operating policy. The fact that complete accounting autonomy for the several properties that make up the Government system of railways is essential in order to guard against a confused state of mind on the part of those responsible for the operating and financial policy of these railways, is, therefore, accepted as the controlling principle for drafting and compiling the Report. The policy followed in devising the form of the Annual Report and in the adoption of the accounting classifications which form the basis of the Report, is a conservative one. It aims at insuring the safety and prosperity of the railways.

Lack of space prevents us giving full extracts from this admirable report, but we hope to give a complete summary in our next issue.

## A TASK FOR THE NEW JAPANESE MINISTER TO CHINA

The appointment of Baron Hayashi, formerly Japanese Ambassador to Italy, as Minister to China is an event of more than passing importance. The retiring Minister, Mr. Hioki, will chiefly be remembered for the part he took in the negotiations which led to the Sino-Japanese Treaty of May, 1915, a treaty forced upon China by a threat of war. Mr. Hioki personally was well-liked by most Chinese who came in contact with him, but he is inevitably associated in the mind of the people generally with an event that was regarded as a national humiliation. The terms of the 1915 Treaty were resented by the Chinese in both north and south, and their resentment took the practical shape of a partial boycott of Japanese goods and services.

Most of the bitterness then engendered has passed away, and if no fresh occasion is given for Chinese resentment there is no good reason why the relations between China and Japan should not be as friendly as they should be between neighbours so close and with so much in common. Everything depends upon Japan. If the Japanese desire to gain the goodwill of the Chinese they have only to adopt a policy of conciliation instead of intimidation. The adoption of such a policy could not possibly be interpreted as a confession of weakness. In a military sense Japan is so immeasurably stronger than China that the adoption of a policy of conciliation could only he regarded as an intimation that Japan, conscious of her strength, was above the necessity of emphasizing its existence by resorting to bullying and brow-beating. On both high and low grounds the pursuance of a conciliatory policy would react beneficially on Japan's interests. A nation can only achieve and maintain the esteem of other nations if it shows that it has a soul above mere aggrandizement. Cultivation of the will to conquer may make a nation feared, but cultivation of the will to help will not only make it respected, but will increase its own self-respect. The spiritual gain to Japan if she become a counsellor and friend of China would be immeasurable. On lower grounds, the gratitude and goodwill of a country that presents possibilities of commercial expansion such as are found in China are an asset that cannot be regarded lightly. Moreover it would be disingenuous to pretend that other nations have been favourably impressed by the policy that Japan has hitherto adopted towards China. Even by those with whom she is most closely associated politically she is regarded with suspicion, if not distrust. The diplomatic methods she adopted when she compelled China to accede to the demands she presented in January, 1915 were characterized by duplicity. Japan deceived the other Treaty Powers in regard to the scope of the demands, and enforced their acceptance by China by threatening to invade the country. It cannot be wondered at, in such circumstances, that Japan's international reputation suffered severely. If, however, she shows, by fair and considerate treatment of China, that she is anxious to retrieve her character, she will largely dissipate the suspicion with which she is admittedly regarded throughout the world.

To Baron Hayashi has come the opportunity of inaugurating the new policy. According to his published utterances he realizes to the full the evil effects that have been wrought by the arrogance and contumely with which China has been treated by Japan in the past. Judged by his professions Baron Hayashi is in direct disagreement with that school of Japanese thought which considers that it is Japan's manifest destiny to establish her suzerainty over China. In his opinion the independence of China should be respected, and she should be aided and encouraged to reorganize and reform. If Baron Hayashi has convinced his Government that the course of conciliation that he advocates would make for Japan's benefit, and if he signalizes his occupancy of the post of Japanese Minister at Peking by winning the goodwill of the Chinese people, he will achieve fame among Japanese statesmen second only to that of the great Prince Ito. Baron Hayashi has long been absent from China, and it is, therefore, to be expected that he is unaware of the precise causes of the almost universal dislike entertained for his fellow-countrymen by the Chinese. It is not proposed in this article to set out those causes at any length, but it is desirable to call attention to two or three things, which are working vast injury to the reputation of Japan. First, and perhaps most important, is the practically unrestricted trade in morphia that is being carried on by Japanese in Manchuria and Shantung. Japan took part in the Opium Conference in Shanghai in 1909, and was a party to the International Opium Convention of 1912 by which the Powers concerned bound themselves to prevent the smuggling of morphia into China from territories under their control. Every Power except Japan has faithfully kept its engagement. Japan, on the other hand, has allowed an enormous trade in morphia to be carried on by her subjects, and she has sustained the ignominy and disgrace of being branded in an official Chinese publication, compiled on behalf of an international organization working for the Chinese Government, as a country whose pledged word is valueless, and which is willing to permit a trade of a most demoralizing character to be carried on under the protection of the extra-territorial privileges enjoyed by her subjects. We direct the attention of Baron Hayashi to the following extract from the report on the foreign trade of China for the year 1915 prepared by the Statistical Secretary of the Chinese Maritime Customs.

"Another and more serious result of the prohibition of opium has been the spreading of the morphia habit, which has led to the development of one of the most profitable trades in the country. The importation into China of morphia and instruments for its injection is absolutely prohibited except by foreign medical practitioners and foreign druggists for medicinal purposes and under special rules, but the drug is so easily smuggled that the prohibition is practically a dead letter. Morphia is manufactured chiefly in Great Britain, Germany, and Austria, and is sent to Japan by registered post via Siberia. It is released by the Post Office in Japan after payment of import duty, which is refunded on re-export to Korea or Dairen, and now presumably to Kiaochau. No refund of duty can be claimed on re-export to China, because the importation into China is forbidden. Large quantities of morphia are introduced into Manchuria, where the evil habit is spreading rapidly, and Shantung is now in a favourable position to obtain the drug; while the commencement of morphia manufacture in Formosa leads to the expectation that the province of Fukien will not be neglected. In Harbin the Russian authorities take vigorous steps to prevent the sale of the drug, any Russian subject found in possession of the poison being sent to prison, while Chinese offenders are handed over to the Chinese authorities. But the Russian police cannot arrest Japanese without the consent of the Japanese Consul. In the Japanese Railway Settlement of Changchun the traffic goes on quite openly. The Japanese dealers employ Chinese agents, who carry a quantity of filled syringes and give injections in quiet corners and back streets for 3 or 4 cents. In this way the deplorable morphia habit is being rapidly spread, and its effects are much more worse and much more quickly apparent than those caused by opium smoking, as the victim soon becomes incapable of work of any kind. It has been estimated that the annual profits of this disastrous traffic do not fall far short of £1,000,000."

Baron Hayashi can certainly feel no pride when he reads this damning indictment. If, as is to be hoped, he makes independent inquiries, he will find that the case against Japan has been understated and that official countenance is indirectly given

to the dehumanized criminals who are engaged in the trade.

Another matter that Baron Hayashi may with advantage investigate is the illegal trade in copper cash being carried on in Shantung. The fortune of war having placed Japan in control of the Customs Office at Tsingtau and of the Shantung Railway, great numbers of Japanese agents have for months past been buying up copper cash in the rural districts in Shantung, melting it down and shipping it to Japan. This is not a direct violation of the law, as the export of copper is not prohibited but the melting is illegal. The trade is carried on absolutely openly, and reports of the value and quantity of cash exported to Japan are given in the Japanese newspapers just as if the trade were legitimate. Japanese authorities assist Japanese law-breakers by allowing them to transport the cash along a railway controlled by the Japanese Government and by giving clearance papers to vessels leaving Tsingtau with consignments of the copper for Japan. This is no slander by persons evilly disposed towards Japan. The facts are published openly in the Japanese Press, even the percentage of profit accruing to the railway company being given. Baron Hayashi has, therefore, to envisage the fact that the Japanese Government is not only protecting its nationals against punishment for law-breaking in China, but is actually an accomplice. The profits derived from this illegal trade are, of course, enormous. The cash costs the Japanese dealers $310, Mexican currency, per ton. When it is melted down the amalgam contains 55 per cent of copper, 39 per cent of zinc, 4½ per cent of lead and 1½ per cent of other impurities. After being refined in Japan, the pure copper is sold back to China at a price reaching $1,400 per ton (although it may be mentioned that the market price in London is about $1,200 per ton). The position may be briefly stated thus. The Chinese sell the Japanese the cash for $310 per ton. The Japanese refine the amalgam and sell the copper back to China, *to be transformed into copper cash*, for $1,400 per ton, and the lead and other metals extracted form an additional profit. Even after paying a "squeeze" to the Chinese mint authorities the Japanese make an enormous profit. Last year, according to Japanese reports, 45,000 tons of copper cash were purchased by Japanese in Shantung. One semi-official Japanese paper in recording this fact calmly mentioned that the "visible supply" remaining in Shantung amounted to 500,000 tons. This is such a glaring abuse of the privileges of extra-territoriality that Baron Hayashi, if he sincerely desires to prove that Japan is animated by friendly feeling for China, may be expected to take steps to put an end to such a grave scandal.

There are numerous other activities of Japanese subjects in China which arouse the resentment of the Chinese, and which discount the claim of the Japanese to be a law-abiding and honourable people, but we will content ourselves with drawing Baron Hayashi's attention to one more matter, which though small in itself has been the cause of much material loss to the Chinese and much greater moral loss to the Japanese. In any part of China where foreigners reside the Chinese almost invariably refuse to let or lease buildings to the Japanese. This is because a large proportion of Japanese, once they have obtained possession of a house, refuse either to pay rent or vacate the premises. No redress can be obtained from the Japanese authorities, and often the unfortunate Chinese actually have to pay the Japanese a solatium for handing back the premises to the rightful owner. In one instance, in Peking, the Chinese house-owner succeeded after protracted negotiations in inducing the Japanese tenant to leave. When he went to take possession of his house, however, he discovered to his amazement that the Japanese had *sold* the house to another Chinese. The house-owner sought for redress from the Japanese authorities, but was stalled off from time to time and the matter has not yet been settled.

Baron Hayashi will readily recognise that this exploitation of the Chinese by his nationals under the cloak of extra-territoriality not only prevents the bonds of friendship between the two countries from being drawn tighter, but causes other foreigners in China to hold the Japanese in very low estimation. The systematic exploitation of China's weakness by taking unfair advantage of the rights of extra-territoriality is carried on *by Japan alone*. When Baron Hayashi verifies the facts above set out, as he can easily do, he could do his country a vast service by summarily putting an end to the activities of those unpatriotic Japanese who, for personal gain, are trailing the honour of their country in the dust.

## ANGLO-FRENCH-AMERICAN CO-OPERATION

In another article, reference is made to the words of Mr. Willard D. Straight on the subject of American financial co-operation with Britain and France. This question of American co-operation will become one of the great factors in the settlement of *post-bellum* questions, and make for a peaceful solution of other world problems, especially those affecting the future status of China. In discussing the real attitude of the leading American bankers on this important subject, it is essential to refer again to the activities of the Japanese to induce Americans to co-operate with them in the "peaceful exploitation" of China.

It will be remembered that last November, Baron Shibusawa, the venerable philanthropist and financier of Japan, made a special visit to the United States for the purpose of having a personal heart to heart talk with our prominent men on the issues between the two countries, and, what was the most important, to induce American capital to work in conjunction with Japanese brains and in the development of China. The theory was perfect. He was respectfully received, wined, dined and feted, and Americans were permitted to listen again to the usual flow of after dinner oratory anent the traditional friendship between the two nations, and how profitable it would be if Americans would employ Japanese managers and other skilled assistants when they invested their money in Chinese enterprises.

Americans were invited to become the financial ally of Japan in the exploitation of China, that commercial partnership that was originally conceived by Count Okuma and proffered to Great Britain to complement and strengthen the existing political alliance. As the British financiers politely rejected this new doctrine so the Americans courteously declined the invitation to become Japan's partner in China. It was at one of these grand banquets arranged in honor of Baron Shibusawa at the Hotel Astor in New York, that Mr. Straight, voicing the sentiment of the leading American bankers, announced the new policy of Wall Street in connection with those nations whose sacrifices had made possible the huge accumulation of wealth in America. If, as Mr. Straight pointed out, "these profits represent the life blood of the manhood of Britain and France and are to be held as a sacred trust," the words convey the idea that the money will be employed to enable the survivors to prosecute the war to a successful termination, and, when the struggle is over, to assist them in reestablishing their industries and foreign trade.

As London and Paris have in the past contributed their millions to the development of America, and, as American enterprises and foreign loans have been successful, largely because of British and French co-operation, so in the future, now that the tables are turned, will Wall Street stand behind those whose wealth has helped to make America what it is to-day.

It was this sentiment which failed to penetrate the minds of the Japanese. The echoes of the demands upon China were fresh in the thoughts of Americans; they remembered that Japan in her might, had cynically ignored previous understandings, and anulled the American agreement for the financing of the Chinchow-Aigun railway and the Bethlehem Steel Corporation loan for the construction of a Chinese navy yard in the Province of Fukien; they recalled that Japan had endeavored to supplant her Ally in the Yangtsze Valley and deprive her of valuable railway rights; they could not so easily forget those other demands aimed at the conversion of China into a vassal state of the Mikado, and they realized that a financial alliance with Japan could only result in further encroachments on the trade of those who were unable at that time adequately to protect their interests in China.

"Finance us in *Yunnan*, and you will see how quickly we will drop the California question," boldly proclaimed Mr. Kinnosuki, the spokesman for Baron Shibusawa in the *Review of Reviews*. The Japanese overreached themselves. They failed to understand the fundamentals of American thought and sentiment. Here was the leading Japanese publicist in America, the dean of their publicity propaganda and intimate of Japan's most beloved philanthropist and humanitarian, publicly advocating that America should finance Japan in a Chinese province, recognized amongst the Allies as the special sphere of activity of France; this at a time while the devoted armies of the latter were winning the admiration of the world, and of ages to come, for their indomitable defense of their native soil against the murderous onslaughts of the legions of the Crown Prince at Verdun. "Lend to us the profits you have made from the heroic sacrifices of France, so that we can enter into the province of Yunnan and supplant them while they are still fighting for their existence; co-operate with us in Yunnan, so we can become entrenched in that corner of China and command the mountain passes into the Indian Empire of Britain beyond, while she can interpose no objection; do this for us and we will get out of California, bag and baggage, and leave you in peace," Mr. Kinnosuki proclaimed in effect, to the American people. Is it any wonder that the mission of the good Baron was a failure? If Mr. Kinnosuki had paid the slightest attention to the message conveyed to the Japanese by Mr. Straight at the Hotel Astor banquet, their keen intelligence would have told them that American financial co-operation was being reserved for the benefit of those whose sacrifices and devotion to the principles of liberty gave them a first call on the wealth of the United States.

It is inconceivable that the Japanese Government was cognizant of, or approved of this slip of its veteran publicist in America, or that he in any way interpreted the real sentiments of Baron Shibusawa. It can only be explained as the undiplomatic utterance of an over-zealous publicity agent. On the other hand, it is well understood in America, that Mr. Kinnosuki was the mouthpiece of Baron Shibusawa, and carried on the work for co-operation after the latter had departed for Japan. His message to America is clear and to the point. It speaks for itself. Mr. Kinnosuki's cold-blooded proposition to America as the price for the termination of the immigration issue, admits of no two interpretations.

Although there were other excellent reasons why Americans could not entertain the overtures of Baron Shibusawa, it was this slip of Mr. Kinnosuki's which effectively nullified the object of his mission and made impossible any further consideration of a proposition for American co-operation with Japan in the Far East.

This may be recorded as one expression of American co-operation with Britain and France. Although American financiers may be willing to advance funds that could be diverted to Japan in order that the latter might benefit in a military sense, they will not be a party to any transaction that will turn over the profits derived from the sale of munitions and supplies to Britain and France to assist a commercial or political competitor to oust them from their special spheres of activity in other parts of the world.

It is perhaps too early to indicate precisely in what manner America will co-operate with Britain and France to re-establish their enterprises abroad. For the present, it stands to reason that the leading financiers friendly to the cause of the Allies will hold the major portion of their resources to facilitate the indispensible financing of urgent war orders, not only in England and France, but also in Italy and Russia. Until the termination of the war, co-operation along other lines is difficult, as the exigencies of the situation compel the investment of huge sums of American capital to create a merchant marine to carry the enormous tonnage of exports to all parts of the world, now held up for lack of bottoms.

It is natural that Britons in the Far East should consider their own interest first, and hope for American financial co-operation in the many legitimate British enterprises now at a standstill for lack of funds. This matter has received careful attention from leading financiers in New York, and it is entirely probable that when the time is opportune, a satisfactory working arrangement will be agreed upon to help out this situation. For the present the war requirements of the Allies must receive first attention. It is true that American capital is seeking an outlet in South America and the Far East, but in view of America's position in this field, this activity carries no menace to the interests of Britain or France. The activities of the American International Corporation and its subsidiaries who have entered the field, are directed by Mr. Willard Straight whose sentiments on friendly co-operation with Britain and France are already on record. The new firm of Gaston, Williams and Wigmore, who are now entering the China field, are animated by the same spirit. This great concern owes its present prosperity to its untiring efforts to furnish the Allies with much needed supplies. The main truth that should strike home, is that the real American sentiment is overwhelmingly in sympathy with the cause that the Allies are fighting to uphold in Europe, and the spirit of friendly co-operation as announced by Mr. Straight is a reflection of those higher ideals on which the fundamentals of a common civilization are based.

G. B. R.

## ALLIANCE DIRECTED AGAINST AMERICA

Before Japan can "face the stormy seas of the Pacific" and settle the so-called racial problems, and acquire an outlet for her surplus millions, it was essential to her chances of success that her differences with her old enemy, Russia, be amicably compounded. The world cannot forget, that hardly had the ink dried on the Portsmouth Peace Treaty, Russia began to prepare to regain her lost prestige. The double tracking of the Siberian Railway, the construction of the Amur line, the strengthening of the fortifications of Vladivostok, the forced colonization of the country east of Baikal, had only one object. Russia's activity compelled Japan to feverishly increase her army, or face defeat. It is well to recall an interview with General Hunterberger, ex-governor of the Russian Maritime Provinces, published in a Japanese paper only a few days before the outbreak of the European war. It throws a side light on the recent alliance between the two nations. General Hunterberger said:—

**"Peace between Russia and Japan can only be maintained by keeping the armaments of both countries in balance....** *The population of Russia will be brought up to more than 300,000,000 in another fifty years, and the only outlet is Siberia and other Asiatic countries. Their prospective competitors are the Yellow races whose incoming at present is far greater than the Russians in the Maritime Provinces.* **Japan and Russia are facing each other in Manchuria and the tendency is for the two to come into collision sooner or later. Japanese give free vent to this sentiment in public speeches. Though Russia should refrain from aggression, repletion and expansion of armaments must not be neglected for a moment. Russia should always be prepared to face invasion by Japan in the event of a European war. Peace can only be strengthened by keeping the armaments of both countries on an equal footing."**

This statement discloses two basic truths which cannot be ignored in any serious study of the new alliance. Russia's great growth of population, and the need for territory, is one, and the fact that up to that time, Russia was the hypothetical enemy of Japan, is the other. However, in the years following the Russian war, Japan had to face new problems arising out of the racial questions in the Pacific, problems which wounded her pride, and instilled a desire for revenge. The Japanese statesmen were in a dilemma. They dared not attempt to solve the problems in the Pacific, while Russia stood ready to take advantage of her exposed flank by attacking her position in Manchuria and Korea. War in the Pacific over the racial issues, meant that the Russian legions would again swarm down into Manchuria, and Japan would once more be face to face with a struggle for national existence.

The European war, and Russia's great need for arms and munitions created the opportunity for Japan to compound her differences with her old enemy, and clear the stage for the solution of the Pacific problems. So, for the last year, the Japanese press has been vigorously advocating an alliance with Russia to clinch the advantage already obtained. It is well to go back for a year and read the inspired utterances of the Japanese press to gather the full significance of the new alliance. It will be disclosed that the Japanese cynically admit that the alliance is primarily directed against America. Readers of the *London Morning Post* will remember the remarkably well written series of articles published during the early part of last year from its well informed special correspondent, then in Tokio. How they passed the censors in Japan and England is a mystery. In April of last year, he devoted a letter to the agitation in Japan in favour of the Russian alliance, and said:—

**"The Japanese press is full of the subject of the proposed alliance. Japanese diplomats in Petrograd have written home favorably of such a possibility, and the leading men of Japan are open in its advocacy. A significant aspect of the proposed alliance is that it is not merely for mutual protection but aimed particularly at a third party.** *Such is the assertion of the vernacular press.* **Who the third party is, need not now be guessed, though such a diversion would be easy."**

Press dispatches from Tokio published in New York on April 15 of last year summarized the state of feeling in Japan on this important development. British and French papers discussed it within the limits of the censorship and the obligations of friendship for their present allies. The German press repeatedly referred to the trouble in store for America from this quarter. *Le Temps* editorially referred to the new factor in world politics, and said that "the main features of the new alliance would provide for a free outlet for Russia by the Dardanelles, and a dominant influence in Eastern Asia for Japan."

The sentiment of Japan may be summed up in the following words from a speech made by Mr. Shimada, the leading orator of Japan, and Presiding officer of the Lower House of the Diet:

**"There is no reason why we should not enter into an alliance with Russia. As the alliance should not only be for the protection of mutual interests, but have a third party as its objective, it might be better to hold it in abeyance for the present so as to avoid creating misapprehension."**

The situation has not changed. The same sentiments prevail in Japan, only the feeling against America has grown more intense, as the necessity for expansion has become more urgent. It is foolish for Americans to close their eyes to the facts. No amount of diplomatic verbiage can disguise the real import of the understanding. A Russo-Japanese alliance aimed at the United States has been consummated. The armaments of Japan are being expanded to acquire colonies and to enforce the racial equality of Japanese in America and the British possessions in the Pacific. The utterance of the Japanese statesmen, publicists and professors cannot be misinterpreted. The wind all blows from one direction.

# THE AMERICAN LOANS TO THE ALLIES

The Japanese press has given wide publicity to the statement that the new alliance was entered into by Russia as part compensation to Japan for the latter's supply of arms and ammunition. In other words, the Japanese confess that they have taken advantage of Russia's plight to extract political profit in advance of the termination of the war and the general peace settlement.

While Japan has been pressing home an alliance directed primarily against America as the price for her supply of munitions to Russia, let us analyze the American loan or credit of $500,000,000 to Great Britain and France.

Since the outbreak of the war, Russia has been compelled to purchase the bulk of her military supplies from Japan. Her requirements were enormous, as she was as unprepared in this respect as were her Allies. Her own store of reserve ammunition was expended in the first phases of the war or during the initial drive into Galicia. At this juncture, taking advantage of the life and death struggle in Europe, and seizing the opportunity she had waited for so many years, Japan proceeded to advance her special interests in China by the presentation of the now notorious twenty-one demands. Her army and navy were mobilized to support her ultimatum and overawe defenseless China into submission. This led to an interruption in the steady flow of war munitions to Russia at the precise time when she had to meet the mighty onslaught of von Hindenberg's legions on the plains of Poland. The result is history. The heroic Russians fought with their bare hands, with iron bars and other crude weapons, and were mowed down like wheat under the scythe. For lack of arms and munitions, Poland was lost, and the Baltic province invaded. The forces of the Czar were beaten back, broken and shattered.

I passed through Petrograd when the streams of wounded Russians were pouring into the capital from the eastern front, and at the time when the Duma and the Russian press were wildly exclaiming "*Where are those Japanese munitions?*"

Japan's diversion from the paths of international rectitude in her unwarranted aggression on weak and defenseless China, had a direct bearing on the crushing defeat of her Ally. Not only did Japan selfishly seek her own advantage in China at the expense of her Allies, but, in what was the darkest hour of the war for Russia, she failed to make good on munitions. While the Germans were battering away at Libau and pushing ahead along the whole Galician front, and the Russians were being driven back for lack of munitions, Japan was concentrating all her efforts upon pounding "by peaceful means" her defenseless neighbor, China. It may be convenient for Russia to have a short memory while the war endures but there are others who have followed the record.

This lack of munitions and the urgent necessity of arranging adequate credits for their purchase, led to the hurried trip to Paris of M. Bark, the Russian Minister of Finance. The fate of Russia and the cause of the Allies hinged on a constant and abundant supply of ammunition for the armies of the Czar. The resources of America were then taxed to the limit for the benefit of France and Britain. Russia could be more readily supplied from Japan, but the latter's capacity was limited and under Government control. Japan furthermore lacked the ready funds wherewith to enlarge her plants and increase her output. Unlike America, Japan could not of herself finance these enlargements and erection of new plants to meet the huge requirements of Russia, and Russia's finances could not stand the immediate strain. She also had to be assisted. So in August of last year, the British and French governments guaranteed to the Japanese Government the costs of the necessary arsenal extensions and erection of new munition plants. Faced with this additional financial burden, the British and French governments applied the following month to America for a loan or credit of a billion dollars, in part, to finance their own orders in the United States, and, as the facts would indicate, to facilitate the release of their own funds for the payment of Russia's war orders in Japan.

Had the American loan been a failure, could Britain and France have carried Russia and provided the funds for the creation of a mammoth munitions industry in Japan? Analysis

of the situation would indicate that the American loan and other credit arrangements by the American bankers had a direct bearing on the ability of England and France to finance Russia in Japan. If stretched to a final conclusion, it would tend to strengthen the statement, that American money made possible the creation of this new industry in Japan. A leading financial authority of Wall Street several months ago estimated that the American bankers up to that time advanced over $2,000,000,000 gold in loans and credits to the Entente Allies, and under the new arrangement of credits advanced on American securities held in London and Paris, at least another billion of credits has been arranged.

The profits from the war orders placed in Japan have been enormous. If due allowance be made for the repayment of advances made for the expansion of existing plants and the erection of new ones, a handsome profit will remain. The Japanese Government at the very outset, declined to permit private firms to undertake any of these orders, establishing a rigid monopoly for the benefit of its own arsenals and workshops. In a special correspondence published in the *New York Times* under date of Tokyo, August 31, appeared the following illuminating information:—

"The fact that the Imperial Government has declined to allow any private concerns to undertake the manufacture of munitions of war for Russia, but has undertaken this part of the order itself is regarded as significant of the policy which aims to utilize the occasion for permanently enlarging the nation's arsenals. This opportunity of enlarging the arsenals and placing them on a war footing without attracting the notice of taxpayers is a matter of quiet satisfaction to those charged with national defense. Certain business corporations, not willing to lose this opportunity of contracting for profitable orders, are urging the authorities to accord them a share, but as far as ammunition is concerned the Government appears to be determined to retain that as an official undertaking, as hitherto.

"There are not wanting those who criticise the Government's readiness to undertake these orders, but the reply to this criticism says that the increased revenue from exports and supply of war munitions should place the nation in a better financial position *and render naval expansion more easy.*"

When it is remembered that 82 per cent of the industries of the Empire are controlled by the Government, it will be seen that for all practical purposes, the huge profits from these lucrative war orders are diverted through different channels into the government coffers. The rapid inflow of money in payment for war munitions and supplies resulted in the accumulation of an idle surplus in the banks, causing the lowering of interest on deposits four times in six months. Due to the combined excess of exports over imports and to payment for Japanese munitions in London, Japan's gold reserve at home and abroad has now reached $300,000,000 gold. If the war lasts another year, these official profits may easily ascend to over $500,000,000. The Japanese Government is now on the road to prosperity.

*The arsenals that Japan demanded that China should pay for last year, have been presented to her by Britain and France and the profits from the munition orders have provided the urgent funds to press to completion her ambitious program for the expansion and repletion of her navy.*

With this brief glance into Japan's financial position as the result of profits from exports of munitions and war supplies, it is interesting to read the following extract from an interview given out last October to the Japanese press by Mr. Taketomi, the Minister of Finance.

"The deficit in the revenue for the current fiscal year has already amounted to over $5,000,000. It is chiefly due to the decrease in the revenue from all taxes, stamps, and from *Government controlled undertakings. The Imperial Railway Board must redeem next year loans to the amount of $15,000,000 gold in Britain, but the Treasury is too pressed for available funds to carry out the redemption. Therefore, the authorities are inclined to convert them into new bonds. Should the conversion be impossible amidst the war, the Government will issue short-term bonds at home and pay back the loans in Britain. In this connection, however, the public is requested to remember that the Government will never dare to float loans at home only to redeem national bonds abroad.*"

The above statement is the most powerful light that, up to date, has been thrown on the workings of Japanese finance. Mr. Taketomi, addressing himself to his own countrymen, tells us that owing to lack of funds in the Treasury from ordinary revenues, Japan was unable to meet her obligations in the redemption of $15,000,000 of railway bonds maturing this year in London, and, conversion being impossible owing to the war, recourse was necessary to a domestic loan. This loan has since been floated in Japan. The question naturally arises; what has become of the huge profits accrueing to the Government from the manufacture of war materials?

Mr. Taketomi tells us plainly that they were not being paid into the treasury, or there would be no necessity to worry about the redemption of $15,000,000 railway bonds in London this year. There is only one deduction to make. These huge profits are being created into a special fund for a special purpose, and remain under the control of the army and navy authorities who operate the arsenals and government workshops. Remembering the answer to the criticisms directed against the Government entering into this business, to the effect that the profits would render naval expansion more easy, and the speech of Count Okuma to the Diet, "that not a day can be lost in pushing through the naval repletion program," it is not difficult to guess what the specific purpose is.

The logical conclusion drawn from the preceding facts, indicates that the $500,000,000 American loan and other credits to Britain and France, released the funds in those countries, not only for the expansion of Japan's arsenals and munitions-producing plants, and the placing of orders equalling the full amount of the loan, but has provided the Japanese Government through its monopoly of this business, with enormous profits, which are being diverted to the rapid repletion of its armaments, cynically admitted as being directed against the nation whose friendship and sympathy for the cause of the Allies, made it possible.

The facts presented above are irrefutable. The deductions are obvious and unshakable. Americans had a precise knowledge of the menace to their own peace and happiness involved in the loan to the Allies which presented Japan with her arsenals and provided the funds for the rapid *repletion* and expansion of her already formidable fleet. Instead of interfering with or hampering the loan, the national banking laws were interpreted to facilitate advances to Foreign Governments far in excess of the legal limit imposed for the protection of depositors against loans to individuals or corporations. The American bankers in charge of the negotiations were also fully informed as to the meaning of the loan. Yet, with a precise knowledge of what it all meant to our own security, with a full realization of the attitude of Japan and the significance of her then mooted alliance with Russia, the American financiers never hesitated. Americans lived up to their traditions and ideals. No favors were asked nor were any offered. When America is brought face to face with the issues in the Pacific she is ready to face them alone. There are no strings tied to the American assistance to the Allies.

Japan's armaments, with her new-found strength, will be first directed against China. The national life of this defenseless nation will be snuffed out *a la* Korea, and the government will pass under the tutelage of Japan preparatory to its final absorption. If American help to the Allies has in any way contributed to this situation, the Allies are in honor obligated to unite their protest with that of America to save this unfortunate nation from the aggression of Japan. That is all. Our own issues we can face alone. This is the answer to the criticisms heaped upon us by those who fail to understand or appreciate the fundamental impulses which stimulate our national life and ideals.

In conclusion, it may be well to invite the attention of those who see in the new Russo-Japanese Agreement another guarantee of peace in the Far East, to the utterance of Baron Kato published in the *Japan Chronicle* of May 18th, ulto. "*The present rapprochement with Russia has been made possible largely*

*because Japan was the ally of the Power supporting Russia on the West and providing her with the means of making those purchases which have had so much to do with the warmer feelings which Japan has rather suddenly conceived for Russia.*" It will not escape the intelligence of the Japanese jingoes, that the Power providing Russia with the funds for the enlargement of Japan's arsenals, is in turn under heavy obligations to that "third Power" against whom the Russian alliance is directed. But the "third Power" has not pressed its friends for assurances of political support or sought to reap any political advantage in return for its assistance. The "third power" has full confidence that in the final "show down" her traditional friendship and thorough understanding with Japan's allies in the West will outweigh and nullify the recent understanding between Japan and Russia, when it operates to the disadvantage of those common interests in the Pacific, that some day will have to be solved. And, as the Honorable Ally of the West has fought the battle for a common civilization in Europe, the "Third Power," if the time comes, will shoulder the burden for the further preservation of those ideals and standards on which our common civilization and homes are founded.

We further invite the careful attention of the Japanese jingoes to the fact that their new-found friend and Ally, has been, and will be for many years to come, a large borrower of funds for public improvements and exploitation of vast natural resources. Russia's old Ally and banker will be unable to carry the load in the future, and, realizing this, Russia has already started a press propaganda in the United States to create a favorable sentiment for the investment of American capital in Russian bonds and securities. Russia's great need for capital, may bring about an understanding with her other allies and America, which will convert the recent agreement into another piece of paper to be consigned to the diplomatic waste basket. The American loan to Russia of $50,000,000 gold, in addition to a credit of $75,000,000 for the use of the Russian Government at Petrograd, announced in dispatches from New York, dated June 16, would seem to be one of the first steps towards a more thorough Russo-American understanding, and, notwithstanding that this transaction was free from politics, on its face, it must counteract in part the Russian pact with Dai Nippon. The attitude of America as contrasted with the selfish political policy of Japan is emphasized by the statements of the Japanese vernacular press. The *Tokyo Asahi* in April last explained that the arrangement for the transfer of the Russian Chinese Eastern Railway south of the Sungari to Japan was because of Russia's inability to pay cash for war supplies purchased in Japan. Which led the *Japan Chronicle* to observe:—

"In putting forth this explanation, the *Asahi* sets the policy of its country in an unfavorable light. Japan is an Ally of Russia in the great war that is being waged. The Allies have agreed to pool their resources, with the result that Britain has lent 316 million pounds sterling to the other Powers of the Alliance, while they on their side, have provided men and maintained operations on land until Britain, in addition to keeping the seas clear, could increase her expeditionary force to the dimensions of a great army. The statement in the *Asahi* implies that Japan is taking a different course, and in return for the supply of munitions to Russia demands, in lieu of immediate cash, what is virtually a political advantage. We should be sorry to believe that this is the correct interpretation of what has taken place, as it would be far from creditable to Japan."

In its editorial of May 18 on "Alliance Projects and Baron Kato," the *Japan Chronicle* again referred to this situation in the following terse terms:—

"When it came to the flotation of a Russian loan for the modest sum of Yen 50,000,000, there was a poor response, though it was obvious that its success would promote Russo-Japanese trade, and the underwriters were left with the greater part of the issue on their hands. Since then has developed the spectacle of Japanese manufacturers not caring to accept Russian orders at all. How different is this from the eagerness exhibited a year ago! It is openly stated if they get a British guarantee for payment, though it be a private one, they will go ahead for all they are worth, and with an easy mind; but they are not inclined to accept Russian Government paper. . . It is not very encouraging to a prospective Ally to discover such a reluctance to accept a bond for a few millions, when there was such enthusiasm to be linked together in much greater responsibilities. And again, though, as we are often told, the essence of a contract is reciprocity, a common impecuniousness means meeting one's Ally on a level which Japanese statesmen would not altogether appreciate. It may be a one-sided reciprocity where one side borrows and the other side lends, but it is one that has been keenly appreciated in the past and probably will be again in the future."

We may be mistaken, but the signs all point to the fact that the alliance was one forced on Russia by Japan at a time when the former had no option but to comply, and the political advantages thereby secured against the "third party" have already been offset by the financial "alliance" between the latter and Russia heralded by the recent loans and credit, and being daily strengthened by a press propaganda in America, seconded and supported by the great financial interests of Wall Street.

## RINDERPEST FACTS *VS.* THEORY

Rinderpest, scourge of the tropical agriculturist, has broken out of control in the Philippines and cattle are dying by scores daily. This is the second time that the plague has menaced the Islands, the first being in 1902 when upwards of 490,000 cattle died and almost as many farmers were reduced to beggary, for no one who has ever watched the tropical farmer churn his little plot of ground into a mud puddle a foot deep before planting, can doubt the utter and complete interdependence of man and beast in the production of the daily rice. Then, the Americans had been in control only four years, three of which had been spent in making that control secure, and some allowance must be made for lack of experience. The present epidemic, however, cannot be so readily excused since eighteen years experience, years in which was brought about the control of the disease, was available.

The Government had evolved a plan by which rinderpest was gradually being blotted out, a plan which depended absolutely for its success on complete centralization of control, and one which permitted no interference by the Filipino politician. This plan was based upon the limitations of the Filipino as actually demonstrated in the past. The Filipino had proved incapable and was utterly disregarded when it came to saving him from his own inability to protect himself. Working on this basis of fact, rinderpest was brought under control.

One of the first acts of the new administration in the Philippines was to remove the control of animal diseases from the Bureau of Agriculture and place the enforcement of the law in the hands of the provincial governors, the theory being that as the Filipino was to be made independent at the earliest possible moment, all possible power should be placed in his hands. And what easier dole of power than to permit him to assist in a matter so closely allied with the prosperity of his country. The suppression of rinderpest had been a gradual process under the Bureau of Agriculture, but the steadily decreasing number of towns from which rinderpest was reported showed that the ultimate end was also sure, even if slow of attainment.

To be sure the provincial authorities often clashed with the agriculture inspectors. Sometimes the officials of the municipalities were under suspicion of having assisted owners of infected herds to remove them from the ken of the inspectors, but even with this friction and the difficulty of working efficiently without official co-operation, rinderpest was steadily losing ground. That the drastic methods necessarily employed by the bureau did not meet with the approval of the particular Filipino farmer whose herd was infected, goes without saying. The bureau insisted that the carcass of the carabao must be destroyed by burning, while the Filipino farmer could not see the harm in stripping the hide from the carcass and selling it. Cases have been known also of the flesh of the plague stricken animals having been sold for food and at least one instance is known of the exhumation of a carcass and an attempt to sell it in the market.

What possible considerations led to the order removing the control of rinderpest from the bureau's hands, has never been stated. At any rate, the order was made and its effects after 18 months are just beginning to be appreciated by the powers that be and even the governors of the provinces are becoming alarmed over the rapid spread of the disease, although they do not consider that their failure to carry out the full provisions of the law has anything to do with the case. Their failure to justify the confidence placed in them by Governor General Harrison is not admitted, nor does the Governor General himself, if his annual message to the Philippine legislature is taken into account, consider that the Governors are in any way at fault. The message states:

> Rinderpest and the locust plague are still with us, as they have been for so many years in the past, and you (legislators) are requested to give further study to plans for the final elimination of these grave menaces to agriculture. The experience of many years in the Philippines has demonstrated the fact that **quarantine alone is not sufficient to eradicate rinderpest from the islands although the spread of the disease is undoubtedly greatly restricted by the efforts put forth by the people to that end.** Nevertheless, recent investigations of the subject indicate that a satisfactory solution of the question may be found in the simultaneous inoculation of the cattle. **Further and much larger appropriations for this purpose are therefore advised.**

This is exactly the stand taken by the Bureau of Agriculture officials several years ago—with some noteworthy differences. The bureau insisted that any quarantine to be effective must be absolute. The answer of the new Government was to put the quarantine into the provincial officials' hands with the result that rinderpest now is in danger of getting utterly out of control. For years the bureau has been hammering away at the Assembly for adequate funds with which to immunize the cattle of the Islands, but without result. Now comes the Governor General and adds his plea to that of the bureau. In response the Assembly cut the totally inadequate item of Pesos 100,000 down to a beggarly Pesos 25,000.

The latest moves in the rinderpest campaign have been the circulation of a pamphlet telling what rinderpest is, among the people of Luzon where every farmer knows from bitter experience gained in 1902, exactly what the disease is and what it means to him. This was the first move. Next a conference of Governors was called to consider the gravity of the situation. Part of this session was behind closed doors with Vice-Governor Martin as the chief speaker. He is said to have threatened that measures similar to martial law might be instituted in case the disease was not speedily put under control.

One of the more enlightened Governors suggested that immunization of cattle be made obligatory upon the owners throughout the islands, but other Governors thought such a measure might be so unpopular among the people as to be impossible of realization. About the only measures that met with unanimous approval were that the legislature appropriate Pesos 1,000,000 to be used in immunization and that a prize be offered for a sure cure for rinderpest. Thus the whole conference simmered down to the usual principles of the Filipino politician which are that the government must do for the people whatever the people are not willing to do for themselves and that the measures to be taken must be nice easy ones lest the people disapprove and visit that disapproval upon the party in power.

Some idea of the gravity of the situation may be gained from the reports of the Bureau of Agriculture of cases that came under official cognizance, made public on June 1. In this the number of carabao dying during one week was given as 560, which rate if continued for a year would carry off 30,000 animals, causing a loss to their owners of at least Pesos 3,000,000 in the value of the animals and a further loss from lack of cultivation of more than 30,000 acres. When it is considered that the total deaths for 1914, when the bureau had full control, were under 3,000 animals or only one-tenth the loss under the present method, the unnecessary toll levied upon the agriculturists can be seen.

## PURSUING THE CHINESE TRADER

COMPETITION COMPELLING A CHANGE IN PAST PRACTICES

The policy of the China Coast merchant for several centuries has not been that of the fleet hunter who pursues his game, but rather that of the pompous person in an upholstered shooting box who waits languidly for the beaters and dogs to run something into the open. There has been dignity and conservatism to spare in the China trade, and a fair profit all around. There was little competition in the old days and life in the East was pleasant, placid and remunerative. The Chinese are unchanging because they are pleased with their own ways, and for the same good reason the business methods of the biggest firms on the China Coast have been as stereotyped as those of their Chinese neighbors. But in the last two years there has been a radical change in methods, and very recently an open revolution in the attitude towards the trade of China which has given the old-timers a series of severe shocks and has fired the newcomers with no little zest and enthusiasm.

In the old days, when one came to found a business in China, he built a house, an office, and a warehouse, and erected a ten foot wall around them. His next step was to employ a Chinese manager, known in the East as a "comprad re," to whom he showed the goods he had to sell, named the things he wanted to buy, and said "go to it," or the equivalent in the parlance of the day. This done the business was established and the founder proceeded to wear a path from his front gate to the Club. He never did any direct business with a Chinese buyer, or seller, he never learned a word of the language, nor a scrap of Chinese tradition. He knew nothing about the Chinese clerks or coolies in his employ, for they were the compradore's employees and the compradore was responsible for them. His duty was to check the goods which arrived from abroad, and ship the Chinese products which his compradore bought for him. He had no idea where they came from and did not care. That was the compradore's business.

There are scores of men in China to-day who have lived in the country 30 years, who do not know ten words of the Chinese language, who have no idea how many provinces there are or how they are governed, and cannot pronounce properly the names of the cities they live in, nor the names of their most intimate Chinese business associates. A knowledge of such things they have always regarded as a frivolous and superficial accomplishment, so the daily lives of the people from whom they are supposed to extract a profit are as much a mystery to them as the career of a Chinese washerman in New York is to his immediate neighbors.

The revolution has come since the war began, and the attention which the war has drawn to German trade in China is largely responsible for it. The staid and conservative, who believed that their businesses were so old and so firmly established that they could not fail, have been vaguely aware for some time that the Germans, and a few British and American firms altogether lacking in dignity, have accomplished as much in ten years by methods which were believed to be too contemptible and vulgar to deserve investigation, as the majority of the rock-founded, iron-bound, for-ever-and-ever 'hongs' had achieved in the last half century. They were vaguely aware of this before the war but they are sharply aware of it now, and the passionate yearning after new things displayed by the orthodox is almost as pathetic and as pathetically amusing as the Chinese nation's striving after modernity and a place in modern affairs.

The despised Chinese language has become a vogue in the Treaty Ports, and those who have been saying for twenty years that pidgin English could bring them into as close touch with the Chinese as they cared to get, now rise early to keep appointments with their instructors, to pry into the mystery of radicals, and chant over the all important intonations, before anyone else gets up. The British Chamber of Commerce has founded a Chinese language school, which all the staid, respectable firms have been in haste to support, and the great commercial factotums of Shanghai, whose gossip was once of races, lotteries and kindred

topics, now pound the table—or the bar as it may be—to emphasize their arguments for doing direct business with the Chinese, getting travellers into the country to advertise and sell European goods, and for making a study of the business morals and methods of the people with whom they have to deal. The Chamber of Commerce school also lays emphasis upon instruction in Chinese etiquette, and one now finds the 'taipans'—the managers—of the old school, drilling themselves in the manners of the Celestials, to which they would have given no more thought ten years ago than to the antics of monkeys or savages.

The new gospel of trade proclaims that it is vitally important to dispense with the Chinese manager, get into the country, find out what the Chinese people want from the people themselves, and how it can be got to them; and then proceed to put the goods required under the noses of their retail dealers. The compradore, useful as he has been to the foreign trader, never could and never would undertake more than a local wholesale trade. He sold and bought through his own little clique of wholesale merchants, who passed the European imports along to their little cliques of wholesalers in the interior and who in turn supplied their retailers. There was no attempt made to get the goods into the district where it was most wanted or most needed. No thorough canvassing or even distribution was possible. The compradore sold where he had connections, and his clients sold where they had them, and whatever part of the country they missed was missed. After four hundred years of European trade on the China Coast there is at least a third of agricultural China, excluding the dependencies, in which no European firm does enough business to be aware of it. Many of the big wool buyers in Tientsin, who ship abroad the fine wool of the Tibetan border, would have no idea where to go for the goods which their Chinese find for them if the Chinese staffs were to go on strike and leave the foreigners to shift for themselves. And there are scores of firms, great and small, who carry the burden of an incubus, in the form of a compradore whom they dare not discharge, whether honest or dishonest, because the whole trade has been built by him and would fall to pieces without him.

The most successful firms in China are the new houses which have come in prepared to find out for themselves what the country is like, which have spent fortunes, and have made bigger fortunes, by sending European travellers into the interior, to learn what each district produces, what it could produce, what it could use, and what it could afford to buy. In such work as this the Germans have come into more intimate relations with the Chinese than any other people. They have not only learned what each district produces, but they have developed new districts, taught the people to turn out new products, advanced them money to bring new land under cultivation, and have purchased their output when it was ready for the market.

The agents of proprietary lines have been the pioneers in selling directly to the Chinese, although without exception each agent, as he arrived in China, was solemnly warned by the oldtimers in firms and banks that he was sowing his company's money on a rock heap and would return a poorer and wiser man. One patent medicine house, for instance, has contrived in ten years to make China its best market, has had travellers in every province and dependency in the empire, has sold goods directly in districts which no white man, except an occasional explorer, had previously visited, and now has on file data on geography and trade routes which are embodied in no existing map and are unknown to the intelligence offices of the great powers. The gathering of this information has been expensive, but use of the data has netted the company a huge profit over all initial and running expenses. In like fashion sewing machines and cigarettes, soaps, medicines, and kerosene, have been advertised, sampled, and sold hundreds of miles from the railways and channels of navigation; and among the firms which have experimented seriously with direct selling there have been no failures.

There are nearly ninety daily newspapers published in China. Of these one conspicuously successful house, which has been in China just ten years, uses fifty, and ninety per cent of the firms which have been in China fifty years use none.

All these things are now patent to the orthodox; and the Chinese buyer, who had to go around to the back door of a 'hong' a few years ago and whisper that he wanted to see the compradore's third assistant if he cared to make a purchase, is now pursued by hordes of penitent salesmen, who scour the country, dictionary in hand, prodding an interpreter before them and dragging sample cases from shop to shop and from town to town.

The compradore is a passing institution, and the 'taipans' who do not know the names of the Chinese provinces and know no other trade route than the well worn trail to the Club, are passing down to extinction. The man who can order his meals or hire a cart in Chinese is worth 20 per cent more to a firm now than the man who cannot remember his Chinese name, and the time is coming when the man who can take a Chinese order without insulting his client, will be the only man that a firm can employ. Competition was keen before the war and it will be so much keener after the war that not even the ancient and venerable 'hongs' will be able to camp on the fringes of China and wait pompously for trade.

(**NIPPON UEBER ALLES**; *Continued from page 50.*)

Napoleon in their wildest dreams of Empire never had such a nightmare of world dominion as the present madness of the Japanese militarists.

The initial step in this great dream of conquest and overlordship of the world is the complete domination of China. With the enormous resources of China's population and wealth behind her, the Chinese millions drilled under Japanese instructors and led by Japanese officers, an effective army will be created, that when once placed in motion will shake Asia and Europe to their foundations. This is the "opportunity of a thousand years," the first step towards the ultimate goal.

The question arises, are the Japanese serious, or are these sentiments merely the outward manifestations of an intense national megalomania? The editor of the *Yomiuri*, one of the most level-headed journalists of Japan, inclines to the latter view. He says:

"**While it is all very well for nations like individuals to reach a period of self consciousness and cherish aspirations of their own greatness, it is at the same time possible to go to extremes in this direction. The people of Japan are too prone to bombastic notions. They contend that their country is a first class power and the leader of Asiatic nations, and seem to fancy that in actual strength and influence Japan stands on a level with England, France, Germany, Russia and the United States, while being far above such countries as Austria-Hungary, Belgium, Italy and Holland. . . . It is not sufficient for Japan to feel big in comparison with Oriental countries; she must get over her propensity to disputing with China, and cherish wider ideals, behaving modestly and realizing her place in the world. . . . Japan's racial standard of civilization must be elevated and her people more enlightened, while she refrains from big and empty words.** *A nation going about with a swelled head is a laughing stock to the world.*"

This is good horse sense. Would that there were more editors and publicists in Japan like the editor of the *Yomiuri*. He has accurately diagnosed the national ailment. There is a cure for a swelled head, and the jingo publicists of Japan seem determined to undermine the work of men like Baron Shibusawa and lead their country to the point where the cure will be administered by the other nations of the world. There is only one end to this kind of talk.

The same doctrine has been preached in Germany for years, but Japanese moulders of public opinion seem disinclined to profit by the lesson before them. As in the case of Germany, the other nations of the world must accept Japan seriously, as she is backing up her conception of her place in the sun with battleships, bullets, battalions and bayonets. She is undoubtedly bent on carrying out her divine mission in the world, and we are reluctantly compelled to accept the inspired statement of the semi-official year-book that her armaments are directed against a possible emergency with the United States of America.

# THE UNITED STATES SHIPPING ACT

By their works ye shall know them is a Scriptural adage that applies to laws and other man made things as well as to man himself and it is interesting to see just how the La Follette Shipping Act, designed to aid American seamen, has worked out. Perhaps its full effect has not yet been felt and if further effects are to be along lines already accomplished, the American merchant and manufacturer interested in export trade may well throw up his hands in submission to adverse fate and forget the millions of China to whose wants he had planned to cater.

Among others who have journeyed to Washington to protest is Mr. George H. Reed, a commission merchant of San Francisco, who has been describing to senators and representatives in Washington the deplorable condition of ocean shipping at the leading Pacific port. He asserts that the docks there are piled high with merchandise billed for Chinese ports, and there is no way to ship it out since the American lines on the Pacific coast went out of business. Mr. Reed mentions one corporation that has 300,000 tons of freight for delivery to Shanghai, and the best it can do is to obtain cargo space at the rate of 1,200 tons a month. Freight rates are way up. A year ago general cargo was $10.50 a ton; to-day it is $40. A year ago steel products paid $8 a ton; the rate to-day is $59.

The millers of the northwest also are loud in protest, voicing which the Spokane *Spokesman Review* says:

> Before the war mills of the Pacific northwest had an ocean freight rate on flour to China and Japan as low as $3 a ton and never higher than $5. The astounding and prohibitive charge is now made of $40 a ton—2 cents a pound, $1 freight on a 50-pound sack. Passage of the La Follette-Furuseth seaman's act was followed by the abandonment of American lines and surrender of the business to Japanese boats. Now the Japanese lines refuse to carry American flour to any port but their own, and then only for government use.

Nor is any permanent relief in sight even if a few more ships are announced as ready to put the American flag back on the Pacific.

> For the hour, wartime conditions and wartime rates make it profitable to operate ships under our burdensome laws. But with the return of peace the oldtime handicap will come back. The case is as simple as two and two. An American-owned ship must compete with foreign ships. It must meet their rates or lose the business. It can not meet them if our laws make a voyage considerably more costly than the same voyage is made by the foreigner. It is precisely as though a railroad with 5 per cent grades and $5 coal had to compete with a parallel line with one per cent grades and $3 coal.

In a plea for a shipping law founded on conditions as they are and not as the Pacific Coast Seamans Union would try to make them even though American commerce be hampered and restricted, the following remedy is suggested and, judging from many press extracts, is seconded by every shipper and ship owner:

> The remedy is plain before our eyes. The prohibitory features of the La Follette law should be repealed and our whole code of navigation laws needs to be thoroughly, intelligently and scientifically overhauled. Congress should yield to the hard economic fact that the United States can not singly set the standards of the sea for the rest of the world. European countries and Japan have the merchant marines, and the United States, with practically no foreign carrying ships, can not force them to acceptance of our idealistic views, however desirable they may be.
>
> It gets the country nowhere for Mr. Furuseth, author of the La Follette law, to try to unload the blame for the failure of his measure on the Wilson administration. It is strange that Mr. Furuseth can not see that logically he undermines his whole case when he blames American capital "because there are between $300,000,000 and $400,000,000 of American money invested in foreign vessels."
>
> Why? Because we have made our navigation laws too burdensome for Americans to sail their ships under the American flag. They have transferred them to foreign registry for the one reason, and no other, that the laws of other countries permit them to operate their ships at a profit in normal times, while the laws of the United States make the business uninviting and unprofitable.

Bankers as well as editors are taking up the cudgels in an endeavor to beat into the comprehension of Congress a realization of what their sentimentally conceived and vote catching measure has done to harass trade. The National City Bank has circulated the following statement broadcast in financial and governmental circles:

> Japanese ships now practically control the commerce between the States and China, and these are ordered by the Japanese Government to give Japanese ports the preference in calling for cargo, while Japanese shippers in China receive preferential treatment.
>
> The British enemy trading regulations as enforced in China are also embarrassing to American trade because a large amount of this trade was handled through German and Austrian houses before the war. British shipping companies are forbidden to carry any enemy-tainted cargo, any cargo from which any enemy firms may directly or indirectly profit; and the ship which has been found to carry such cargo may be refused clearance on its next shipment, regardless of the character of this later cargo. American firms are not allowed to ship on British ships either for Germans or Austrians in China or the United States, or to those firms indirectly connected with such cargo, and this applies not alone to contraband but to all goods. Strict inquisitorial examinations are made by the British authorities into all cargo offered for shipment on British ships by neutral firms.
>
> The Japanese shipping companies, under instructions, have placed a ban on enemy-tainted cargo offered by neutral firms. Both Chinese and American firms have suffered badly, as there are now few ships calling at China which are under the American flag. The enemy trading regulations seem to be handled in a way to further British and Japanese interests as much as possible, whose shippers fare far better in securing space than do most Americans. An American firm found guilty of trading with a German in any way is blacklisted and henceforth refused all banking and shipping facilities by the Allies.

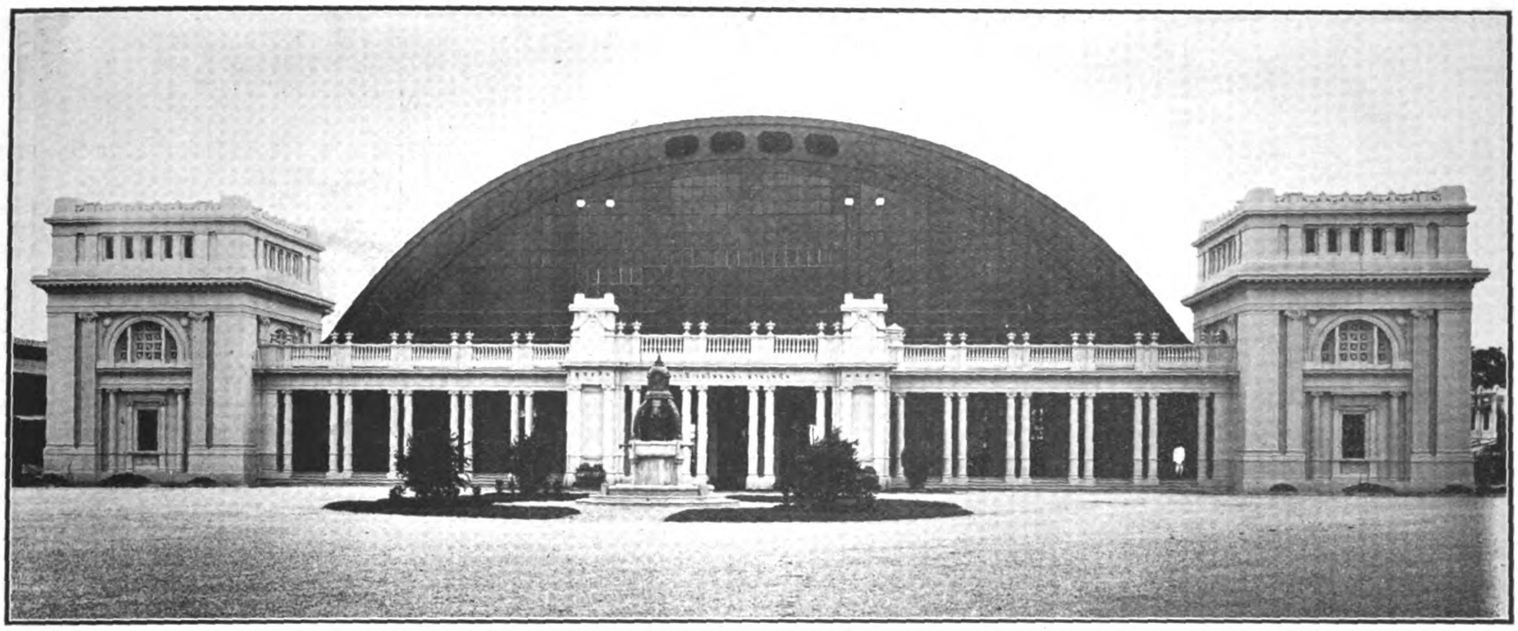
As outlined in the FAR EASTERN REVIEW for June, Japan's shipping conquest of the Pacific and of export trade from China as well is practically complete and it will take many thousands of tons of American ships to make any noticeable remedial effect upon the situation. Far from being considered any detriment some Pacific coast shippers are glad of the opportunity to move their tonnage in Japanese bottoms. The Southern Pacific Railway has had to turn over to the Toyo Kisen Kaisha, a Japanese steamship line, all of its traffic that was formerly handled by the Pacific Mail Steamship Co., the Southern Pacific's subsidiary before that concern was driven out of business by the seamen's law.

Officials of the railway said that they were very glad to have the Japanese line bid for the freight formerly carried by the Pacific Mail, as it assures the Southern Pacific of the same transcontinental traffic business it formerly employed. Some inconvenience has resulted, however, from the fact that the Japanese ships do not touch at all of the ports entered by the Pacific Mail. Some freight now shipped to Manila and China must be transhipped at Japanese ports and sent to its destination by other Japanese lines, thus entailing higher freight costs to the American shipper. In every instance it simmers down to the shipper who certainly is "paying the freight" of the La Follette Shipping Bill.

As for the Wilson Administration's Shipping Bill regarding which Chairman Alexander of the House Committee said: "If we do not pass this legislation at this session of Congress I shall consider it not less than a national calamity." This bill is placed second on the Administration program, above even preparedness and the Government armor-plate plant. Yet the record shows that only the failure to pass this bill has prevented an experience like that with its twin bill. If the Government Shipping bill had passed a year ago there would have been no such revival in the American shipbuilding industry as has been experienced, and which can be stopped only by Government competition. This is proved by the abandonment of the leading features of the bill, whose defeat would be considered a "national calamity" by the saviors of the country's commerce.

A New York Editor commenting on both of these measures has no doubt as to the "good intentions" of their framers and proceeds to castigate both with the same lash:

> No doubt the Shipping Bill is even better intentioned than the La Follette-Furuseth law, not being designed for the benefit of a limited class at the expense of all other classes, under the pretense of humanity. But both alike are repugnant to the class for whose benefit they are designed. If the Administration wishes to assist seamen and shipping, why does it not propose what they ask for instead of what they reject?



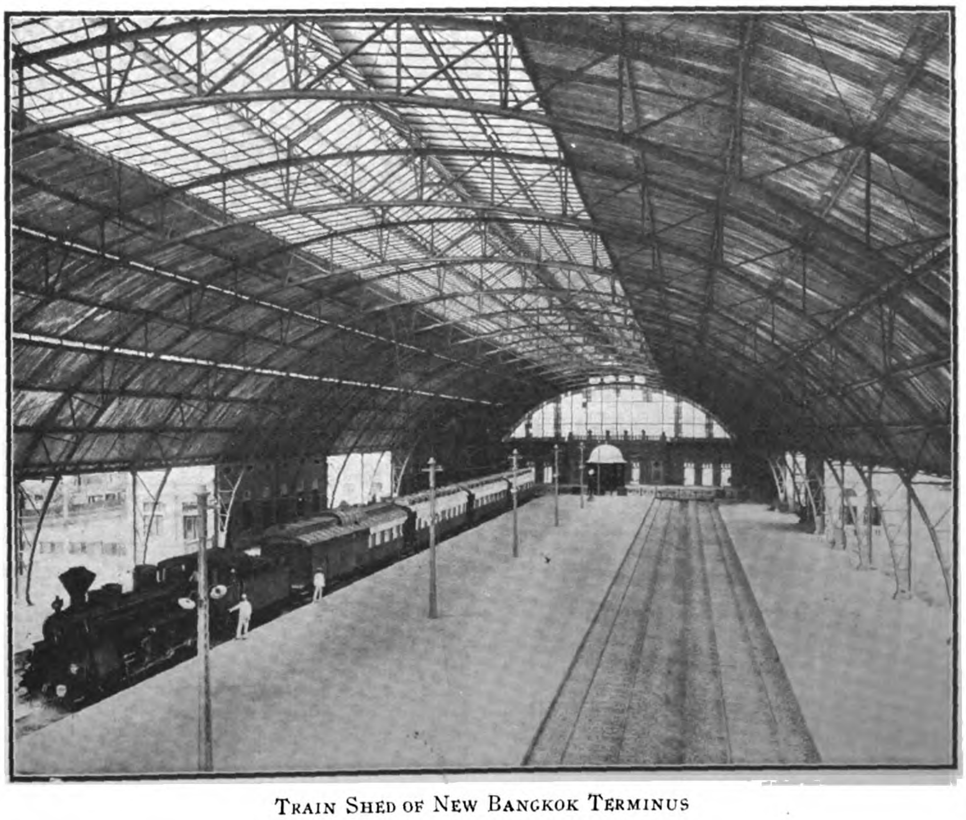
FACADE OF NEW BANGKOK TERMINUS OF ROYAL STATE RAILWAYS OF SIAM

# THE NEW BANGKOK TERMINUS OF THE ROYAL SIAMESE STATE RAILWAYS

The remodelling of the Bangkok Terminus entailed expending a sum of 1,100,000 ticals, which includes 170,000 ticals for the great iron hall and 240,000 ticals for the building of the new central station, says a contributor of the Siam Mail.

This general work also comprises the building of two interlocking towers forming centres from which the switch and signal-systems are controlled by electric connections arranged according to most modern methods with up-to-date appliances ensuring the safety of the railway traffic. These interlocking towers are built in a modern balcony style. A water supply system with two artesian wells and a tank tower of 200 cbm. capacity also has been established to improve sanitary conditions.

A really beautiful impression is given by the new central station and hall, which have been most conveniently placed at the extreme southern end of the yard facing Hua Lampong Road and Rong Muang Road. A large space of ground leads from these streets directly to the southern main front and offers ample room for the public traffic to and from the building. The centre of this plazza is embellished by the Chulalongkorn Memorial Well an exceedingly pretty bronze monument which has been dedicated to the memory of His Majesty the late King by the officials of the Northern and Southern Railway Departments. The monument shows three elephant heads surmounted by a pointed crown. Three spouts in the form of bullsheads throw water into a basin. Surrounded by flower beds this will become one of the finest objects of art in the city.

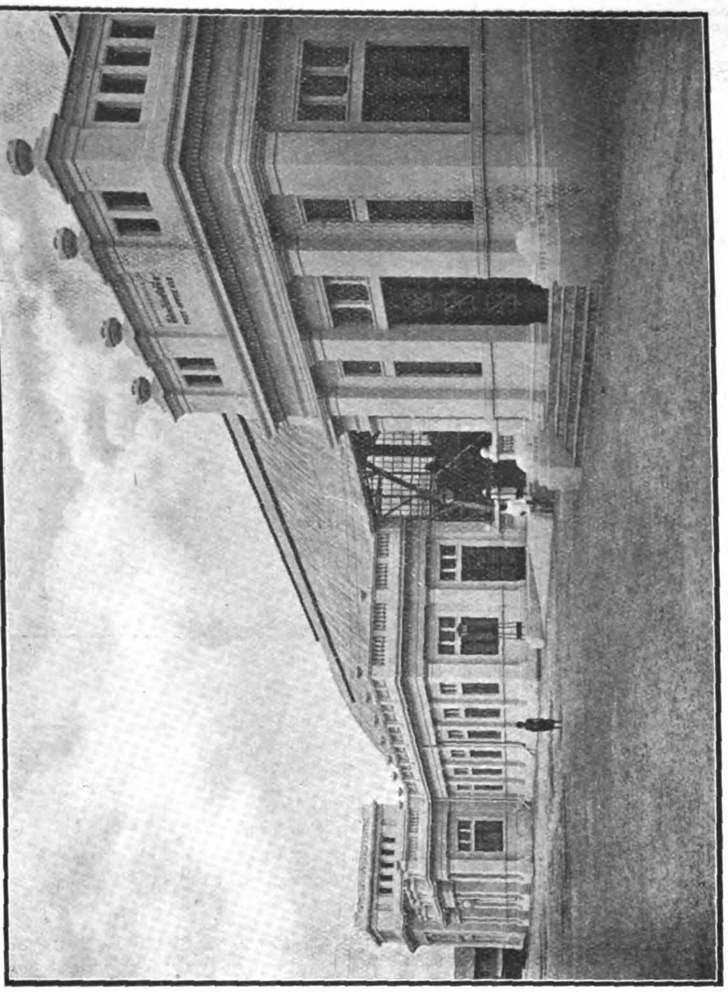


TRAIN SHED OF NEW BANGKOK TERMINUS

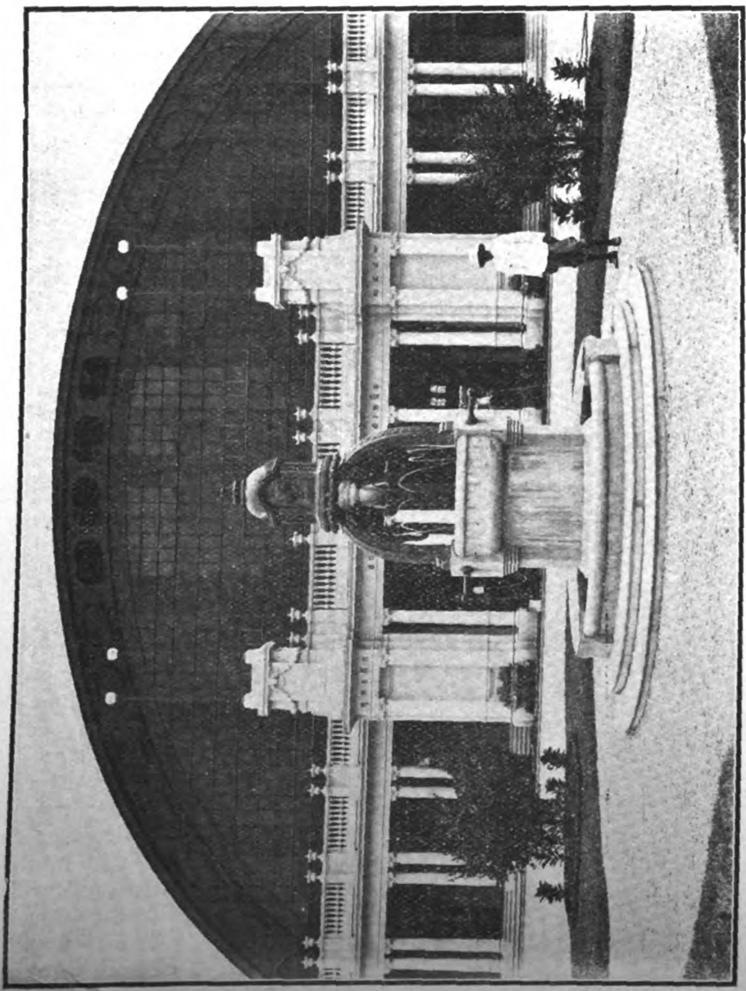
The station building itself flanked by two massive towers shows the graceful lines of Italian Renaissance. Both wings show the same architectural features. The architect has succeeded in adapting his design to the huge arch of the iron hall and the general conception is indeed both monumental and highly artistic.

A flight of steps leads into a spacious entrance hall carried by graceful pillars. The flanking towers show three storeys, and as necessitated by their huge mass of masonry they are placed on ingeniously constructed fundaments. A visit to their foundation cellars is exceedingly interesting from an engineering point of view.

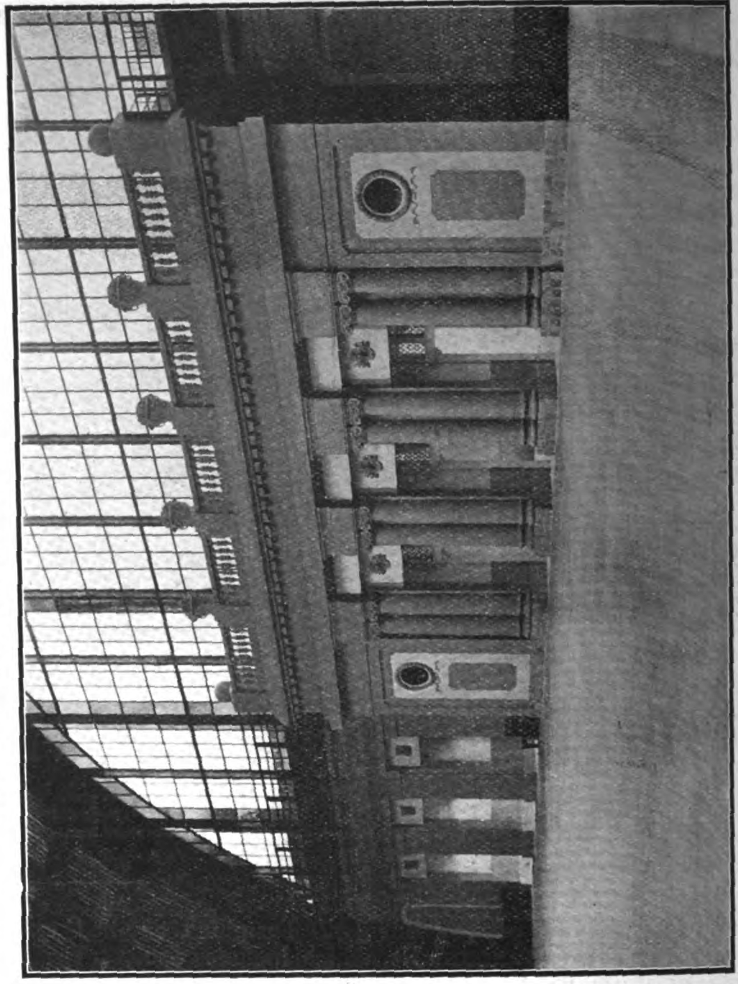
The ground floor of the eastern tower contains a spacious and well designed reception room for distinguished travellers. In the western tower the corresponding room is to be used as a hall for exhibits of local firms and products of home industries. The upper storeys of both towers contain offices. There



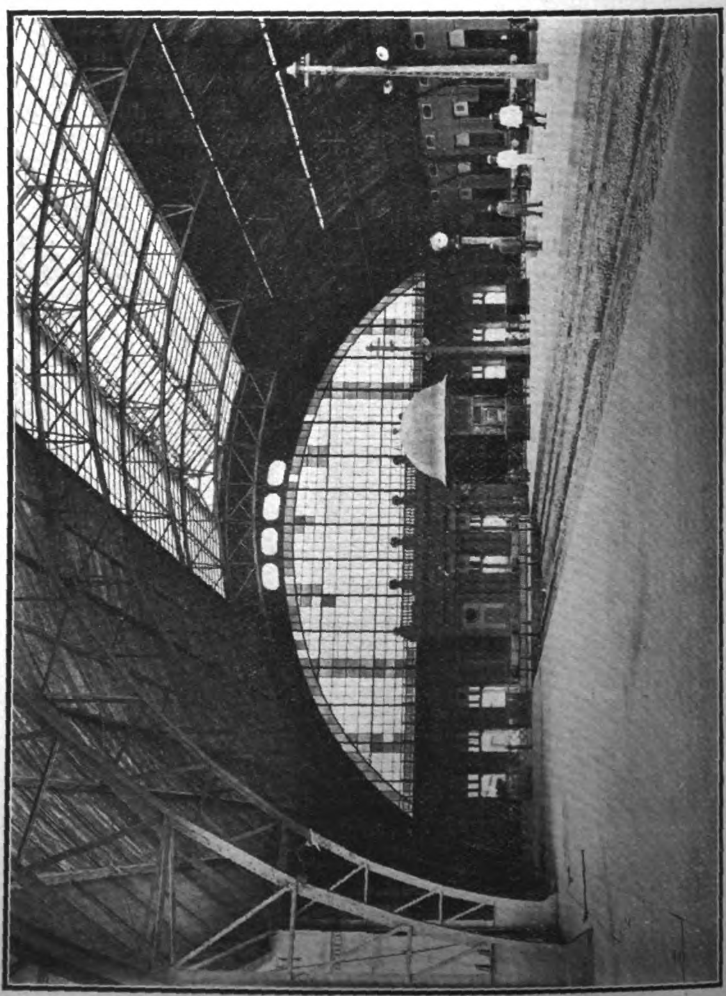
View of East Wing Containing Post Office and Waiting Room



Memorial Well Erected by Railway Officials to the Late King Chulalongkorn



Passenger Exits and Entrance to Train Shed

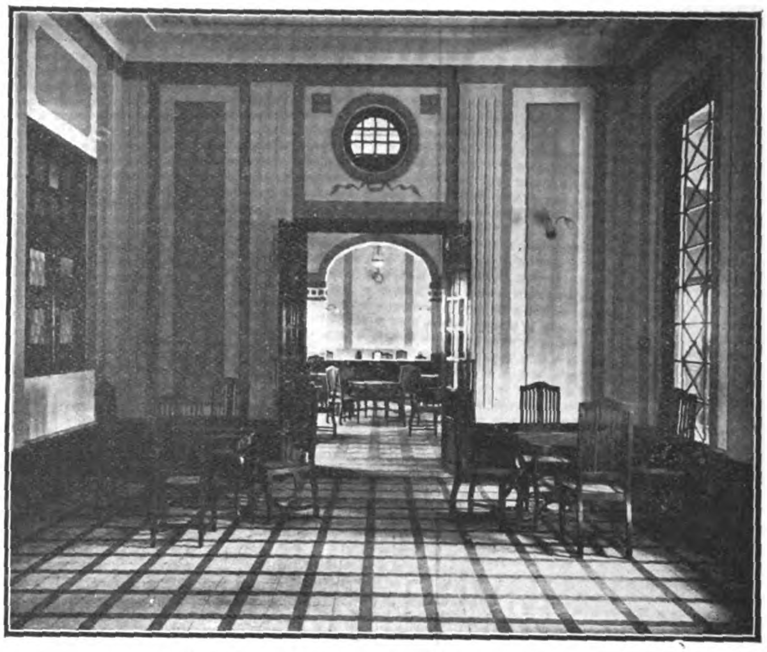


Exits from Train Shed to Waiting Rooms

is a spacious flat roof above the entrance hall from where one enjoys a fine view of the ground and the monument in front of the building.

A broad inner entrance gate leads into the great iron hall which measures 150 metres in length and 45 metres in width. There are four lines of rails, i.e. two for incoming and two for outgoing trains. The hall covers a space of 1,900 sqm. and the entire building covers 8,650 sqm. The architecture features within the hall are colossal and at the same time are on most beautiful and aesthetic lines. Huge pillars carry the mighty vault with ease, and the general artistic impression is increased by a strong and earnest ornamentation and by a tasteful composition of colours. A ticket office in the form of a pretty kiosk is situated within the centre of the hall. This inner architecture represents a special form of modern German style.

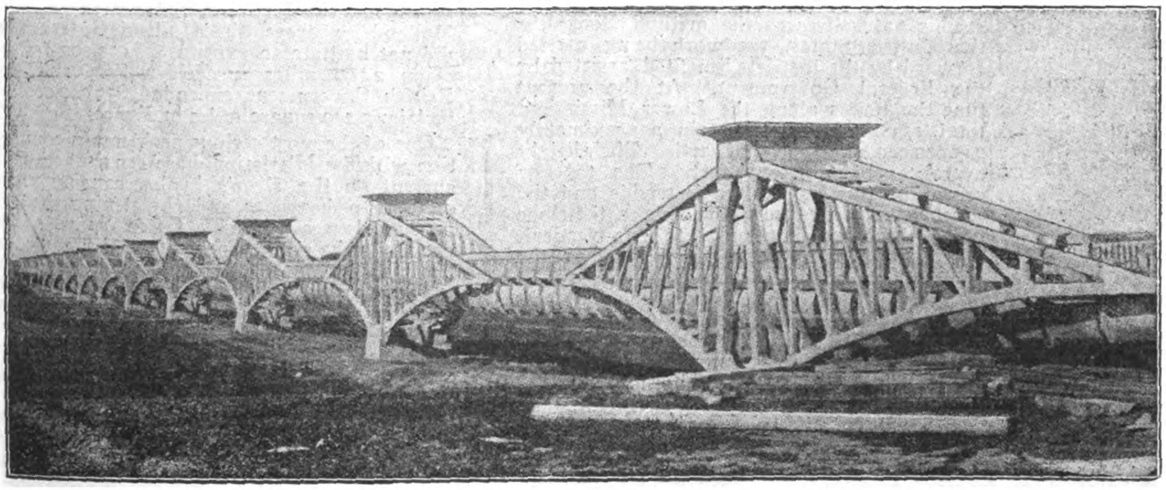
Spacious and cool rooms in the western wing contain offices for the station staff. A separate building is fitted with up-to-date toilet requirements for the use of the public. The eastern wing contains quite commodious waiting rooms for first and second class passengers and a refreshment saloon. The rooms in both wings, but chiefly so the waiting rooms, are of exceedingly tasteful design, the ornamental features and the effect of the colours being both noble and very pretty. Facing Rong Muang Road on the eastern flank of the great hall a special building contains the rooms of Post Office No. 5 attached to the station. This little building is not only beautiful in its outer and inner architectural features, but the arrangements within meet all demands as regards the comfort of the public. The whole arrangement may indeed serve as a model for other small post-offices in this country.



FIRST AND SECOND CLASS WAITING ROOMS

# AUSTRALIAN REINFORCED CONCRETE AQUEDUCT

### Built with Use of Chicago Cube Mixer



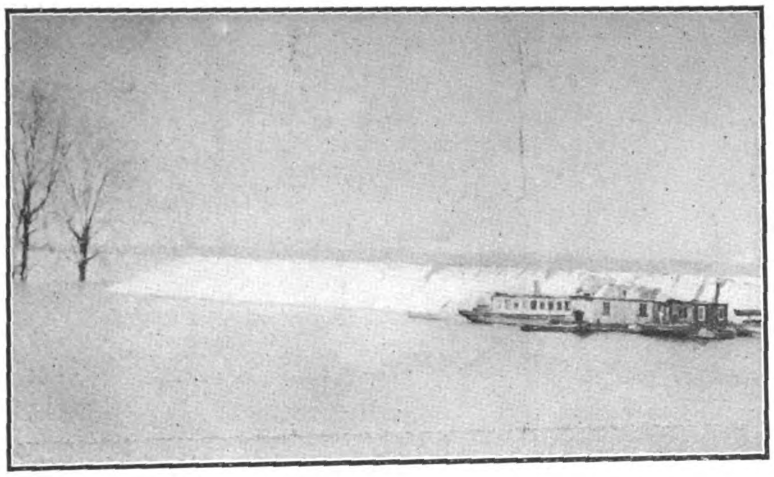
Geelong, one of the leading cities in Victoria, recently installed a sewerage scheme in which reinforced concrete has been widely used. It was necessary to cross the river Barwon and river flats with the sewer line. On the recommendation of Mr. R.T. McKay, A.M.I.C.E., chief engineer to the water works and sewerage trust, Geelong, it was decided to erect an aqueduct. Alternative prices in steel or concrete were submitted, and the trust, after due consideration, accepted the design and tender of Mr. E. G. Stone, engineer for Messrs. Stone and Siddeley, of Sydney. It is one of the finest concrete constructions in Australia, and a feature of the work was the use of the Chicago Cube Mixer, three units having been supplied by Messrs. W. & J. Lempriere of Melbourne, agents for the Municipal Engineering and Contracting Co. of Chicago.

The structure, which presents many interesting features, is of reinforced concrete, and is designed upon the cantilever principle. To cross the river and flats—a length of 2,424 feet—14 spans were proposed, 13 being 176 feet and one 136 feet centres. One of the great advantages derived by the application of the cantilever principle to the structure is the fact that any variations due to temperature are horizontal, whereas, in the case of a series of arches these movements would be vertical and would create a series of undulations throughout its length, an undesirable effect, seeing that the grade of the sewer is only 1 in 2,500.

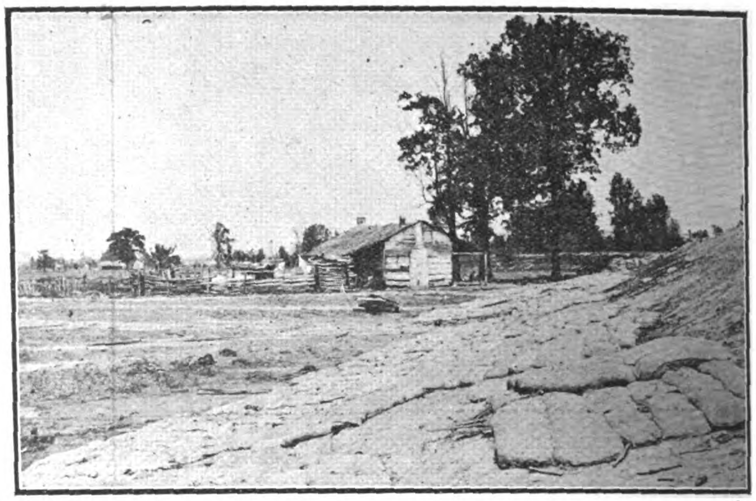
To adequately and economically take up the imposed horizontal wind stresses, the cantilevers are splayed; the distance between them increases from the point to the piers. The pipes, all of reinforced concrete, are built into the structure; they do not add to its stability. The pipes are oviform in shape, 8 feet in length. This length coincides with the distance between the vertical struts in the cantilevers, thus the transverse web between the cantilevers strengthens and supports the joints of the pipes. These pipes were constructed by the successful tenderers in the same moulds as the pipes for the main section of the sewer. Bores taken along the site showed that the rock levels varied from 5 feet to 40 feet below the surface. Reinforced concrete piles were driven to test, and the reinforcement in these engage with the rafts upon which the piers rest. The bases of the piers were hollow, the space afterwards being filled with plum concrete: from the bases run out the various members. An adequate idea of their disposition can be obtained from the photograph. The reinforcement is of ordinary commercial steel rods. The disposition of the bars throughout the structure is of interest, the full tensile strength being taken up by laps; in no place are they mechanically connected. The rods in the upper boom are arranged in concentric rings, the laps of which break joint along its length. The diagonals are in tension, and the ends of the rods through them are accurately bent around the rods in the upper and lower booms. A footpath is also provided throughout the whole length of the structure, and its treatment adds very considerably to the appearance of the work.

The length from point to point of a cantilever span is 136 feet, and across the gap of 40 feet are placed girders, which in each case are fixed at one end and free to move at the other. The handrailing of the footpath is sufficiently reinforced to act as girder; by this method it was possible to maintain a continuous footpath form.

An expansion joint is provided in each span, its design being similar to that of an ordinary stuffing box.



Finished Levee with Concrete face on Mississippi River



Making Quick Repairs at Point of Seepage

# RIVER CONSERVATION ON A LARGE SCALE

Now that a filip has been given to conservancy work on a large scale under methods in China by the acceptance of the contract by the American construction firm of Siems and Carey for the improvement of the Grand Canal, it is interesting to refer to one of the chief great works of flood prevention in America. In connexion with the improvement of the Grand Canal flood prevention work will sooner or later have to be undertaken on the Hwai River area to harness this itinerant stream, and the manner that rivers are controlled elsewhere is shown by the methods adopted to prevent the Mississippi River from wandering willy nilly over vast tracts of valuable territory. Mr. Charles Pierce Burton sends us the following notes on the subject:

A trip down the Mississippi River leve is necessary fully to appreciate the summing up of the three essentials for the successful handling of earth in the southern part of the United States. There are three thousand mule teams on the levee, a thousand miles or more of them. The Negro invariably supplies the labor. Fully ninety-five percent of the outfits on the work are from the famous factory of the Western Wheeled Scraper Company at Aurora, Illinois.

In one sense the Mississippi is a great storm sewer, which under normal conditions gathers the flood waters from thirty-one states and conducts them to the Gulf of Mexico. When conditions become abnormal, the waters rise much higher than their natural banks and flood the adjacent country. During the flood of 1912 more than 12,000 square miles of land were inundated, an area approximately as large as the State of Maryland. The great and fertile district threatened by these recurring floods is an extensive area of 29,790 square miles—twice as large as Holland, nearly as large as Denmark and Switzerland combined.

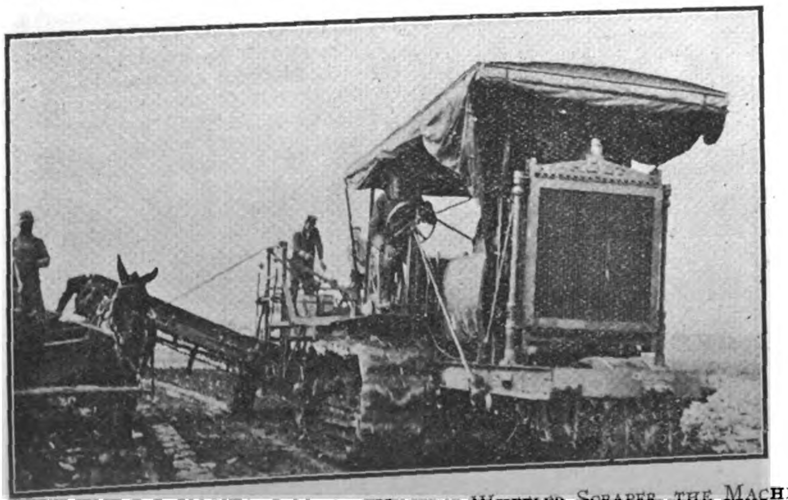
As long ago as 1822 Government engineers, sent to investigate, reported that "the only means that appear practicable to us is the construction of dikes." In other words, the simplest, most effective and least expensive way to prevent a river from overflowing its banks is to build up the natural banks to a height out of reach of flood water and strong enough to withstand its pressure.

This naturally was the method adopted in the United States, the work being carried forward by the districts benefited, assisted by the Federal Government. At the present time the levees along the Lower Mississippi total 1538 miles and contain approximately 243,000,000 cubic yards of earth. Their height averages about fifteen feet. The top, or crown, is from eight to ten feet wide and the base, usually six times the height, the slope being three feet horizontal to one vertical. The cost, of course, increases as the levees grow in height and earth has to be borrowed from a greater distance. The cost of construction at the present time is said to average about twenty five cents a cubic yard. The entire cost of existing levees to land owners has been in the neighborhood of $70,000,000 (gold.) The work has been done largely with wheeled scrapers and a most effective labor saving machine, known as the Western elevating grader and wagon loader, by which wagons can be loaded as rapidly as they can be driven under the elevator spout, from 500 to 800 wagons per day.

It is estimated that about 230,000,000 cubic yards of earth will be required to complete the existing system and an effort is being made to have the Federal Government undertake it as a whole. It is thought that the entire system, as planned by the Mississippi River Commission, can be completed within the next five years at a cost not to exceed $60,000,000, a sum less than that which already has been spent on the project by individual landowners. An expenditure of $60,000,000, it is pointed out, will complete the protection of 29,790 square miles, a fertile area twice the size of Holland, whereas the Holland Government did not hesitate to expend $46,000,000 to reclaim 2,000 miles in Zeider Zee, and the British Government expended $53,000,000 to reclaim 2,200 square miles in Egypt.

One of the most serious problems in connection with the Mississippi has been the action of current on the river's banks, causing great sections to disappear and threatening the expensive levees behind. Often some slight change in the river above alters the angle of the current, causing it to strike the bank at a different place and making new protection necessary to save the levee and the country beyond. Those not familiar with the subject will be interested in the method employed for meeting this danger.

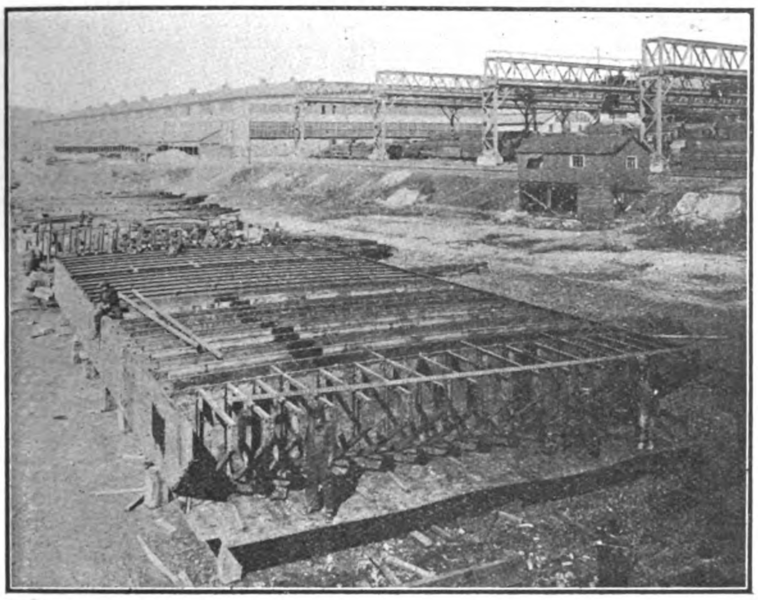
Most people understand the soothing effects of a good bed and a woven wire mattress. The Mississippi is quieted by laying a woven willow mattress on the river's bed at the point



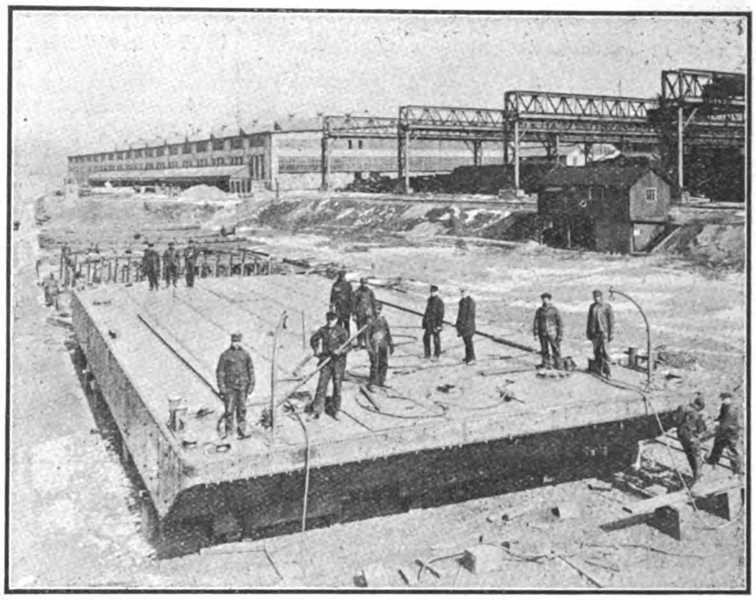
Grading and Loading with Western Wheeled Scraper, the Machine Largely Used for Building Embankments in the United States

attacked. The process is known as reveting or revetment. This mattress is a thousand, or more, feet long, from two hundred to three hundred feet wide and a foot and a half thick. The huge mat is made by weaving willow brush into a fabric, on a great barge constructed for the purpose. As the mat lengthens, the barge drops down stream, leaving the mat when completed spread over the surface of the water like a great carpet. It then is covered uniformly with stones, until it sinks to the bed of the stream, where it closely fits the concave surface formed by the river bottom and sloping bank. The point attacked by the current is thus given a rock facing that prevents further washing. The demand for brush for revetment purposes has nearly denuded Mississippi Delta district of willow. United States engineers now are experimenting with concrete mats, which promise to take the place of rock covered willow mats very successfully.

"God didn't create Provincetown," said a resident of Cape Cod to the writer. "It washed there." Neither did He create the Lower Mississippi valley, so far as its present banks are concerned. They didn't "wash there," however. They were dragged there and still are being dragged there as fast as men and machines can do the work.



Building Steel Pontoon



Pontoon Completely Erected

# AMERICAN BARGES FOR USE IN CHINA

Steel barges and pontoons built and fitted together on the shores of the Ohio River at Pittsburgh, Pa., are finding a market in China.

The accompanying photographs show a steel pontoon designed to carry an 80 ft. steel derrick with its complete equipment of boilers and hoisting machinery, together with an auxiliary set of equipment consisting of a four-ton automatic steel hammer pile driver and a clam shell bucket for dredging and excavating.

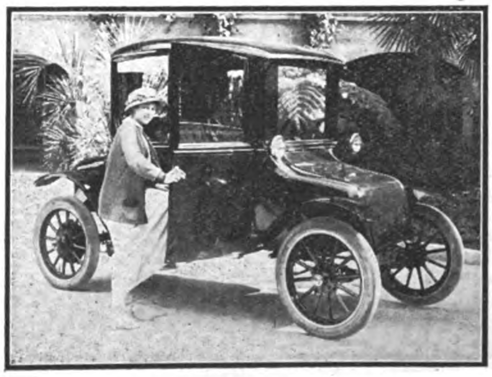
This equipment is for use on the Yangtsze River and is now on its way to China, having been furnished by the United States Steel Products Company of Shanghai. One of the photographs, which was taken at the Ambridge plant of this company, shows the steel frame work for the pontoon, and the second photograph shows the pontoon completely fitted together.

## MILBURN LIGHT ELECTRICS

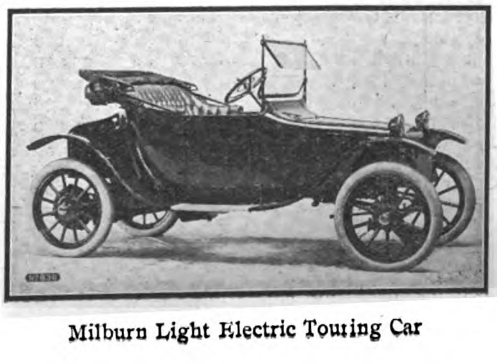
Such signal success has been secured from a trial shipment of ten Milburn Light Electric cars that Andersen, Meyer & Co., Ltd., are contemplating placing a much larger order for this electric vehicle which has shown itself so suited to the conditions in Shanghai, and whose cost of operation has run below all previous expectations. Shanghai being practically without hills or steep inclines, and having no touring roads, makes a high powered gasoline car almost a needless luxury, and the Milburn Light Electric has met every test of local conditions.

These cars are especially designed for the owner to drive, doing away with the necessity for a chauffeur, in fact it is a common sight in the United States to see a small child driving a Milburn Light Electric. Designed especially for the use of ladies, its ease of operation makes it an ideal car for calling and shopping. The seating capacity of four for the coupe renders it suitable for all purposes for which the ordinary small car is used.

A feature of the car is that all danger of burning out the motor by a sudden reverse has been eliminated, and the mechanism has been made as thoroughly "fool proof" as possible. One small lever and a foot brake control the car, making it the most simple in operation of any on the market.



Milburn Light Electric Coupe



Milburn Light Electric Touring Car

It is impossible for the owner to leave the car standing with the power on, since stopping with brake set and the current going, starts a reminder in the shape of the electric horn.

They are equipped with Edison storage batteries, and are of steel construction, with aluminum panels used throughout to keep down the weight. Every bearing is either a roller or ball bearing to do away with needless friction, and on the smooth paved roads of Shanghai a speed of eighteen to twenty miles per hour can be attained on less than two horse power. The consumption of electric power, on exhaustive tests, has proved to be only one tael cent per mile, which is one-third the cost of operating the lightest gasoline cars in this market.

By the use of Mercury Arc Rectifiers the battery can be charged at the owner's home from the regular municipal current, thus removing the necessity of having to send the car to power house or garage to be charged. Not only have these cars appealed to the general public but their general construction is of such excellence that the Shanghai Municipal Council has purchased three for the use of its electrical department.

# MINING IN FRENCH INDO-CHINA

The American Consul at Saigon, while on a recent trip through Tongking and other parts of this district, was informed by several of the leading business men of French Indo-China that they hoped American capital would become interested in the development of the country. In the absence of sufficient French capital to meet its needs, the advent of American capital would be looked upon with great favour.

Mining is among the industries that offer opportunities of this character. Tongking is rich in minerals. The market value of the product for 1916 will probably be (gold) $3,000,000 for coal, $1,500,000 for zinc, $1,500,000 for tin and tungsten, $1,200,000 for cement, and $300,000 for antimony. Manganese, copper, lead, iron, silver, gold, and phosphates are known to exist and have been produced in small quantities. These operations have so far been merely scratching the surface. The mining industry of this region is capable of an almost unlimited intensive and extensive development.

### Demand and Production

Shafts and mining machinery are practically unknown. Mining in Tongking is almost exclusively a matter of coolie hand labour on the surface. So far as methods of operation are concerned, the mines of Tongking are practically stone quarries.

The region of operations might be greatly extended. Up to January 1, 1916, about 120 mineral concessions had been granted, of which only a small proportion had been exploited. This lack of development is especially marked in view of the production for 1916, which, on account of the stimulus of high prices, is much greater than in any preceding year. The greatly increased production of coal and cement, the opening of new and rich zinc mines, and the revival of the dormant industries of tin, tungsten, and antimony mining are results of the abnormal demand for these minerals caused by the European war.

### French Capital Backward

Backward development has been due to lack of capital. In almost every case concessions have been taken up by prospectors or retired officers, men of courage and determination, but without capital or experience. It was found exceedingly difficult to interest French capital in enterprises so far from home. The alternative was to seek foreign capital, and this was done in every mining industry which had been successful up to the beginning of the war.

The only successful coal mine, that of Hongay, producing nearly 90 per cent. of the entire output, is controlled by English capital, and most of the zinc mines were financed by German firms, which carried the product to refineries in Belgium and Germany. The tin, tungsten, and antimony mines were never successfully operated before the war. They were called to life by the enormous demand and excessive prices of these minerals during the war.

The ownership, or at least the nominal control, of these mines must remain French, for, according to the mining laws of Indo-China, no mine can be owned or exploited except by a citizen of France or native of Indo-China, or by a company organized according to French law, with its headquarters in France or its dominions and with the majority of its administrators citizens of France or natives of its dominions.

### Foreign Capital Necessary

The financial support for the present must be foreign. It is unlikely that the German firms will be able to continue this work. Japan has been attempting to take the place of Germany, especially in the zinc industry, but lacks sufficient capital to finance so large an undertaking. England will probably be engaged with her own problems. No other nation will be in so favourable a position to lend the required assistance as the United States.

There is great need for a loan and discount bank in Indo-China. The French Banque de l'Indo-Chine is an exchange bank and bank of issue. The local branches of the two British banks—the Hongkong & Shanghai Banking Corporation and the Chartered Bank of India, Australia, and China—concern themselves only with questions of exchange. There is need for a commercial bank to do, as a business, what Speidel and Co. did incidentally—give financial support to the development of Indo-China, not only in mining but in agriculture and manufactures, transportation, and other enterprises. This need has long been recognized by the leading business men and students of economic conditions, and several attempts have been made to start banks of this kind.

The Tonkin mining industry suffered severely by the outbreak of the war. Coal suffered least, but declined appreciably during the last quarter. Tonkinese coal is a form of anthracite, and the export goes mainly to Yunnan and other parts of China. The output of the cement factory at Haifong has been greatly curtailed. Zinc suffered most. This mineral, generally exported to Dunkirk and Antwerp, lost its market soon after the opening of the war, and at the close of the year zinc exporters were seeking a market for their product in the United States.

The trade in cotton, cotton yarn, and flour is of interest to America because this country furnished a large proportion of the supply of these articles. Practically all of the cotton comes through Hongkong; most of it from the United States. It goes to Tonkin, where it is woven into cloth or spun into a yarn suitable for weaving, and in this form is exported into Yunnan. The decline in the imports of cotton was due partly to the diminished output of these factories after the war began and partly to the relative increase in the imports of cotton yarn.

### Purchases from United States in 1914

Direct importations from the United States during 1914 amounted to $522,553. The chief items were: Petroleum, $435,900; Oregon pine, $57,634; sewing machines, $16,609; lubricating oils, $14,196; and flour, $8,632. This, however, represents only a small portion of American imports, for most American products, particularly cotton and flour, are transshipped at Hongkong, while American machinery is sometimes purchased through Paris agencies. The following estimate of American products imported, directly or indirectly, into French Indo-China during 1914 is approximately correct:

| Articles. | Value. |
|---|---|
| Petroleum and lubricating oils... ... | $600,000 |
| Cotton and cotton yarn ... ... ... | 550,000 |
| Flour ... ... ... ... ... ... ... | 500,000 |
| Iron and steel... ... ... ... ... ... | 50,000 |
| Oregon pine ... ... ... ... ... ... | 60,000 |
| Sewing machines ... ... ... ... ... | 25,000 |
| Machinery and hardware ... ... ... | 10,000 |
| Cotton goods... ... ... ... ... ... | 10,000 |
| Canned goods ... ... ... ... ... | 5,000 |
| Typewriters ... ... ... ... ... ... | 4,000 |
| Automobiles ... ... ... ... ... ... | 4,000 |
| Other articles ... ... ... ... ... | 17,000 |
| Total ... ... ... ... ... ... | 1,835,000 |

### Possibility of Increasing American Imports

Under ordinary conditions it would be difficult for America to greatly extend her sales in this market. A high duty, commercial ties and methods, direct service, and lower freight rates normally give France a monopoly of between 40 and 50 per cent of the import business of this district. Of the remaining 50 or 60 per cent fully 35 per cent represents goods of Asiatic origin which either can not be produced elsewhere or in which it is impossible for Europe or America to compete. Only about 10 or 12 per cent of this import trade, amounting to $5,000,000 or $6,000,000, is normally open to European and American competition.

Our staple imports into French Indo-China have been petroleum, flour, cotton, sewing machines, typewriters, and a few other products, with irregular shipments of iron and steel, and timber. The war has cut off the supply of iron and steel, machinery and hardware, cotton goods and other products from France and has opened a temporary market for these goods. In this trade Japan has been favored by distance and freight rates and England by her branch houses at Hongkong, Singapore and her agents in the field, while America has labored against the handicap of distance, freight rates, lack of direct connections, and long-range business methods. The result has not been favorable to America.

### Agricultural Products—Export Trade

The year 1914 was a good one for agricultural products. Rice exportations broke all previous records, and an unusually large portion of the crop was still on hand at the close of the year. The maize crop was an excellent one, particularly in Tonkin, where the cultivation of this grain seems to have become firmly established.

The comparison with the previous year is misleading, for the 1913 crop was a phenomenal one. France furnished a good market for maize, while the most burdensome restrictions on the exportation of rice were soon removed. On the other hand, a record pepper crop suffered for lack of market. The copra product of Cochin China was above normal, but the cotton crop of Cambodia was unusually small and the market poor. During the early part of the year considerable quantities of rice hay were shipped to Germany and other European countries. The cinnamon of Anam found its usual good market in China. Native tea and sugar are gradually supplanting the imported product, and this partly accounts for the comparatively slight increase in the export of these products.

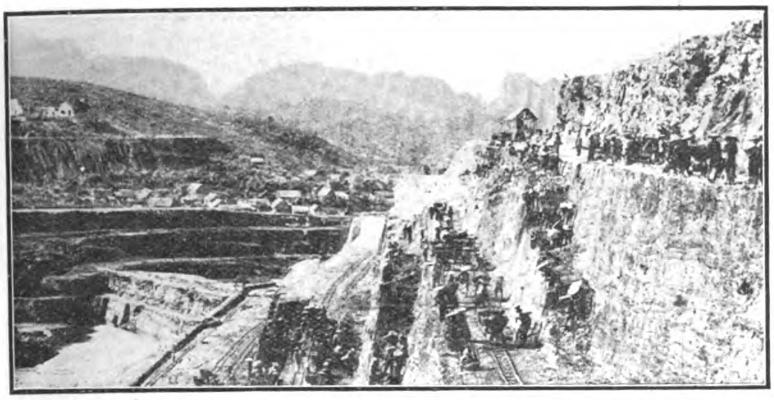
The fishing industry is almost entirely in the hands of the Chinese and was consequently little affected by the war. The export of leather was not far below normal, but the export trade in hides was demoralized by the outbreak of the war. The export of live stock remained constant, the decline in the shipment of hogs from Saigon to Singapore being offset by the increase in the shipment of cattle and carabao from Pnompenh to the Philippines.

### Trade with the U.S. and Philippines

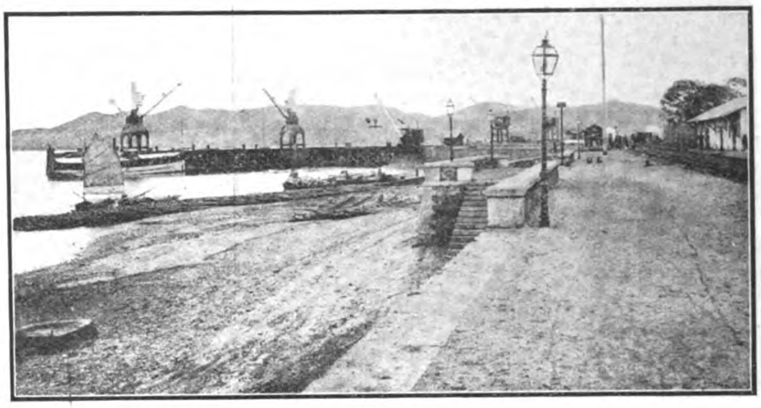
Practically nothing is exported directly from French Indo-China to the United States, but during the past year Americans have interested themselves in attempts to establish connections for the purchase of rice, hides, rubber, and a few other products.

The Philippines take from 5 to 15 per cent of the exports from Indo-China. The principal articles are: Rice from Saigon to Manila and Cebu; cattle and carabao from Pnompenh to Manila, Iloilo, and Cebu; and cement from Haifong to Manila. The value of this trade during 1914 was approximately $2,650,000, distributed as follows: Rice, $2,500,000; cattle and carabao, $100,000; cement, $40,000; and other products, $10,000. These figures total about $500,000 less than those given by the Philippine Bureau of Customs. The difference is probably due to a difference in customs values.

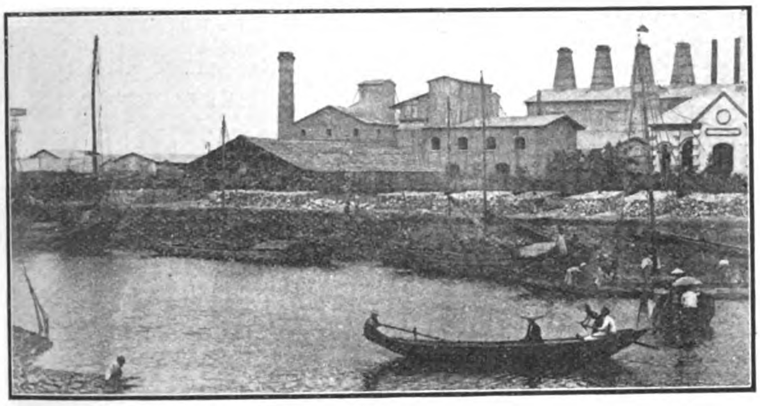
# Industrial Views and Bridges of Indo-China



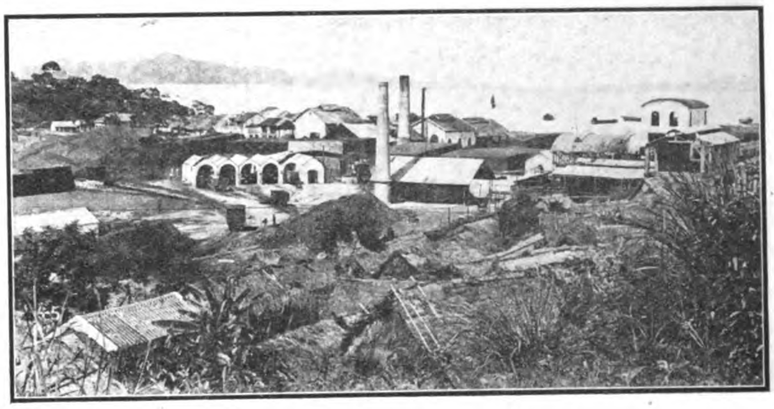
Tonking—Open Cut Coal Mines at Hongay



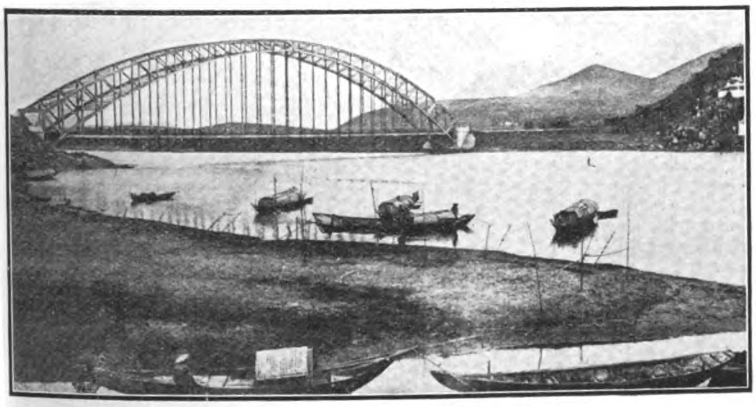
Tonking—Coal Loading Cranes on Hongay Pier



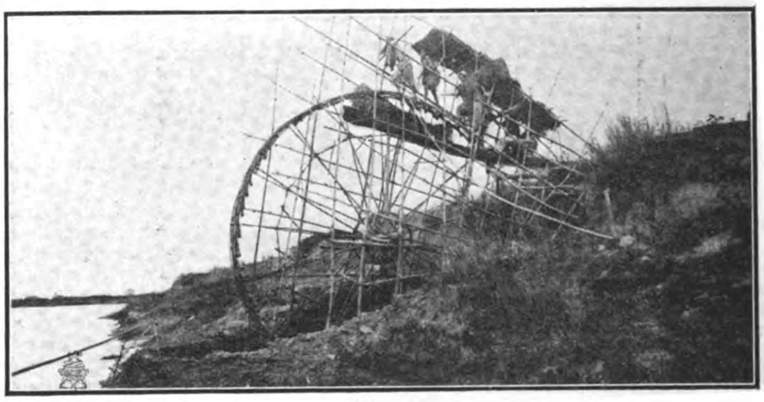
Tonking—Cement Factory at Haiphong



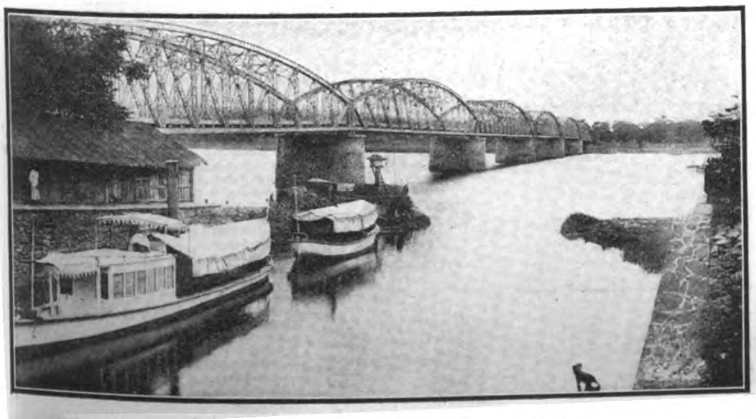
Tonking—Briquette Plant at Hongay



Annam—Railway Bridge at Ham-Rong



Annam—Foot Power Water Wheel for Irrigation



Annam—Than Thai Bridge at Hue

Tonking—Doumer Bridge over Yellow River

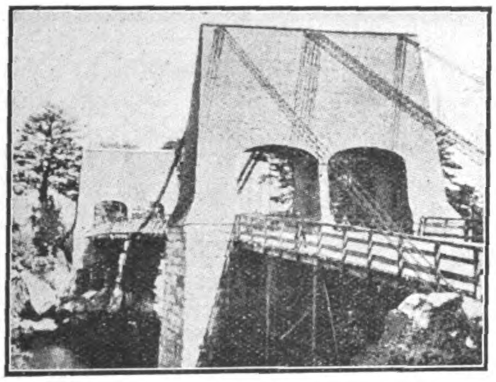
# THE STORY OF ARMCO IRON

In digging around the pyramids, archeologists have unearthed iron tools thousands of years old. In the ruins of the lake dwellers of Switzerland are found buried, under many feet of clay and sand, the iron implements of that ancient people.

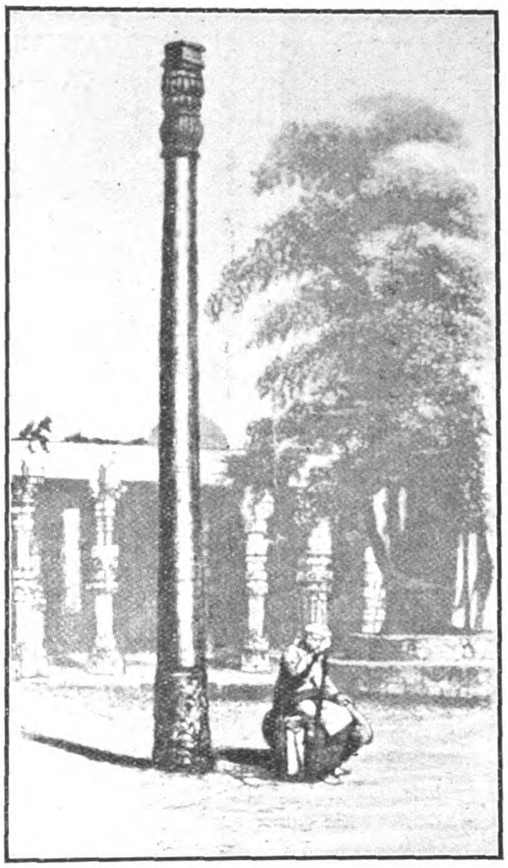
These examples antedate by hundreds of years the iron pillar at Delhi, India, which is one of the wonders of the world with twenty-eight centuries of existence to its credit.

So short, in fact, have been the lives of metals generally, especially when exposed to weather, that even America furnishes sensational instances of rust resistance.

At Newburyport, Massachusetts, was built, in 1798, one of the world's first suspension bridges. The single span was supported by chains of huge iron links. In 1810 some changes were made in the bridge. Then for one hundred years it stood there in rain, the fog, the salt air and the snow. In 1910 this bridge was replaced. The iron chains were still as good as new. After a century or more of exposure they are practically unaffected by rust.



IRON CHAIN BRIDGE AT NEWBURYPORT



FAMOUS IRON PILLAR IN INDIA

But it is not necessary to go beyond our own memories to find examples of superior rust-resisting qualities.

IRON LINK FROM NEWBURYPORT BRIDGE

The last of the old square wrought iron nails have seen three or four generations of the bright, sharp steel wire nails come and go. In the spring of 1914, part of the old Union Station at Cleveland, Ohio, erected 1865, was torn down. Almost sixty years of lake dampness and sulphurous coal smoke had not affected the wrought iron nails. Then there's the old-fashioned tin roofing. Many tin roofs put on sixty or seventy years ago are still good.

The metal roofs put on fifteen or even ten years ago—well, if you put one on then you're probably thinking about re-roofing now, if you haven't already done so.

Rust certainly has made short work of the destruction of modern sheet metal roofings.

These examples of superiority on the part of some metals over others, to resist rust and corrosion, interested and puzzled us just as they did others in the steel and iron industry. We knew there must be reasons why some iron did not corrode while other metals rapidly rusted away.

Laboratory experiments, numberless analyses, patient research showed that the rust-resisting metals were iron—practically pure iron.

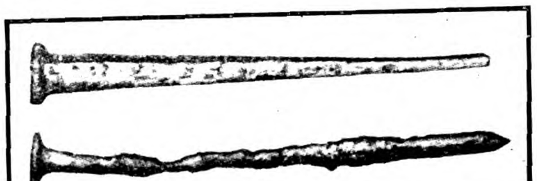
Scientists, too, were working to discover the basic cause of rust. At last came the announcement that corrosion is caused by the presence, in iron, of some other substances.

These successful scientists proved that the presence of other substances, especially manganese, in a sheet of iron induced a destructive electrical action, which turns the iron into rust.

Here, then, were two facts. Our own research showed that rust-resisting iron was pure; the scientists proved that iron in combination with other elements must necessarily rust.

Our problem was to make pure iron. Of course it had been done. But the ages old examples of pure iron were largely accidental. The ore had been remarkably pure; the iron had been refined with unusual results.

The iron links at Newburyport, the wrought iron nails, the tin roofs with their charcoal iron cores—all these had been made by a method closed to us. The old way of making iron could never compete with the new way of making steel.



THE OLD AND THE NEW. THE WROUGHT IRON NAIL HAS SEEN THIRTY-EIGHT YEARS OF USE, THE STEELWIRE NAIL ELEVEN

We resolved to find a way to make pure iron on a commercial scale—to make it at a cost not too high for anyone who desired lasting, rust-resisting, non-corroding metal sheets. Our quest for the needed method is one of the epochs of iron history.

One by one brilliant metallurgists came to work under the direction of the man who had set himself the task of working out the chemistry and physics of this problem.

From a small room for experimentation, our laboratory has grown into the most completely equipped laboratory in the world for the study of ferrous metals. More than one government sends requests for information and results of tests to the men now in charge of this laboratory.

Though the original problem in its essentials has long been solved, and thousands of tons of pure iron made every year, these men keep on with their research. They are finding new qualities in Armco Iron—qualities that mean new uses. Only a short time ago they succeeded in giving to our iron a polish superior to any yet achieved.

When these scientists of our laboratory show that certain things are possible, we set to work to do these things in our mills. We had to construct great furnaces to take the place of the small forge fires. Tremendous rolls run by a high-powered reversible engine did, on a mammoth scale, that which has been accomplished by hammer and anvil.

"Failure" was the prophecy from the steel industry, but the scientists were right.

We succeeded.

Our mills began to turn out pure iron—iron as pure as the product of the laboratory—and they turned it out on a commercial basis.

You can now get iron that, because of its purity, has a hundred exclusive qualities—the greatest of which is its almost perfect rust-resisting power.

For a number of years this iron was made and sold under the name of American Ingot Iron, but as we more and more realized its distinctive qualities, we felt a growing need for a shorter and more distinctive name.

We sought a name that would have the same significance in relation to iron that the word Sterling has to silver—a positive assurance of quality—a distinctive mark of identification.

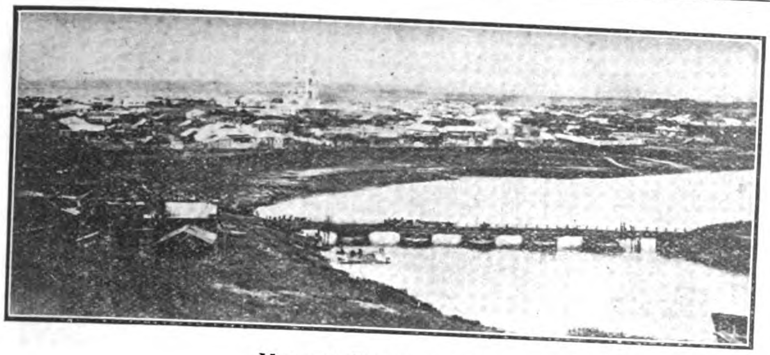
The name we have given it is Armco Iron.

## JAPANESE SPINNING MILLS' PROFITS

All the spinning companies except the Kanegafuchi have settled their accounts for the semi-annual business term, and practically all have decided to pay larger dividends. The decisions of the boards of directors for the payment of dividends compared with the previous term are as follows:

| | Previous term Percentage | Present term Percentage |
|---|---|---|
| Kanegufuchi ... ... | 16 | 20 |
| Fuji ... ... ... | 12 | 16 |
| Nisshin ... ... ... | 8 | 12 |
| Carico ... ... ... ... | 8 | 12 |
| Amagasaki.. ... ... | 30 | 40 |
| Fukushima... ... ... | 30 | 35 |
| Settsu ... ... ... ... | 30 | 35 |
| Kishiwada... ... ... | 30 | 35 |
| Wakayama ... ... | 16 | 20 |
| Izumi ... ... ... ... | 10 | 14 |
| Sanyo ... ... ... ... | 8 | 10 |
| Ehime ... ... ... ... | 10 | 12 |
| Temma ... ... ... | 10 | 12 |
| Toyo ... ... ... ... | 16 | 20 |
| Godo ... ... ... ... | 18 | 20 |

Such an increase in the percentage of dividends is unprecedented even in the days of the spinning prosperity that followed the Russo-Japanese war. Not only have the mills decided to pay increased dividends, but also they are in a position to carry over sums larger than the dividends to the next terms.



View of Petropavlosk

Irkutsk, the Metropolis of Siberia

# SURVEY OF TRADE DEVELOPMENT IN SIBERIA

*[From report of special Canadian commissioner to Canadian Department of Trade]*

For purposes of trade development Siberia falls into two divisions: western and eastern Siberia. In the western division, stretching from the Urals to a line drawn through Irkutsk, the local trade conditions and their controlling influences may be assimilated to those operating in European Russia. In eastern Siberia, including the Trans-Baikal Province, however, special geographical and economic factors tend to make this remote region one apart, and the trade must therefore be dealt with by itself.

Siberia as a whole may be said to be peculiarly dependent upon foreign-trade exchanges for its prosperity. The population of the country, now 13,000,000, is being constantly recruited by migration from European Russia, the net migration for the fifteen years from 1898 to 1912 having been no less than 2,750,000. It is a fact, moreover, that the producing and consuming power of this population is relatively much higher than that of any similar proportion of the Russian people in the rest of the Empire.

One of the most important factors in the development of Siberia is its transportation facilities. The whole hydrographic system that supplements the Trans-Siberian Railroad is bisected by that railroad, and for thousands of miles, north and south of the line, supplies the most splendid means of cheap access to vast areas during the greater portion of the year. These facilities are being continually increased by the construction of new railways and by river improvement works, which aim to connect the whole river system of the country for practical transportation purposes.

### Increase in Siberian Trade

During the last 10 years the home trade of Siberia has grown from $30,900,000 to $77,250,000 annually. Trade expansion is shown by the business of the fairs and markets, the carrying trade returns of the chief centers of distribution, the growth in the number of banks, forwarding houses, insurance offices, etc., and the extraordinary activity of the building trade. There is everywhere an increasing tendency toward intensive and advanced methods of exploitation of the chief products of Siberia. The growth of butter and egg exports has been phenomenal, when one considers the problems of transportation. Bacon, a more recent article of export, is rapidly becoming a trade of first-class importance. The census figures of 1910 give the number of factories of all kinds as 14,160, with an output valued at $38,625,000, an increase of 75 per cent in the number and of 150 per cent in production over the figures for 1900. [The Russian returns class as factories all small industries employing labor.] The chief increase in these establishments has been in connection with flour mills, sawmills, breweries, etc. Practically the entire equipment of these and similar undertakings was imported.

### Trade Methods and Business Centers

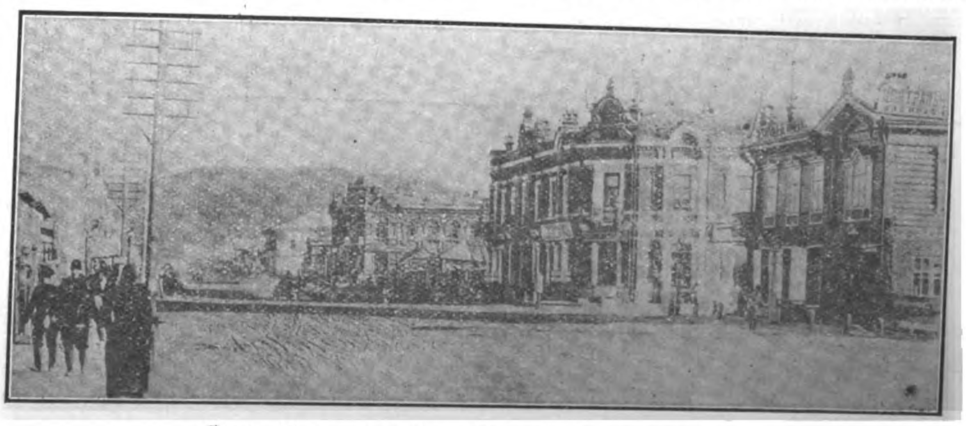
Moscow merchants control fully 50 per cent of the trade of western Siberia. These firms have branches in the principal centers, but the purchases for their stores are made in Moscow. The growth of the country and the establishment of strong local independent firms, however, are gradually bringing about a change and direct buying must ultimately become a general practice. Most of the foreign firms doing business in Russia pay little attention to the Siberian market; they are content to place their representation in the hands of a single firm in European Russia, with the result that their interests suffer. The practice of the agent is to appoint a subagent for Siberia, and the fact that both intermediaries are looking for a substantial profit increases the cost of the goods and thus restricts sales. By trade grouping and by sending out at regular intervals competent travelers speaking the language and carrying a full line of samples to the chief centers, German firms have been able to build up a direct trade on a satisfactory basis. Financial strength to carry on trade is a greater necessity in western Siberia than in European Russia, and trade grouping by outside firms wishing to enter that market is of first importance. While the profits are great, expenses also are high, and it is a wise policy to share them in testing a new market. Local agents urge that responsible representatives of grouped industries should visit the country and get into touch with local conditions.

The granting of extended credit has been an important factor in obtaining business, for there is little liquid capital in a country during the early stages of colonization and agricultural development. In practice, therefore, the foreign exporter must be prepared to carry on business with his own capital. The western Siberian market is safe, however, if care is exercised in granting credit. Except in the case of agricultural, mining, and general machinery, the average credit of 6 to 9 months from date of delivery of goods--which generally take 3 months from remoter countries—might have to be faced, although it was stated that a modification of these terms might be arranged. It is useless to think of opening up business under other conditions; the cost of credit can be realized in the prices. Trial orders must not be ignored, but must receive, with the larger orders, the closest attention. Bank discounts are as follows: On prime bills, 3 months, 6½ per cent; 6 months, 7 to 7½ per cent; 9 months, 9 to 10 per cent.

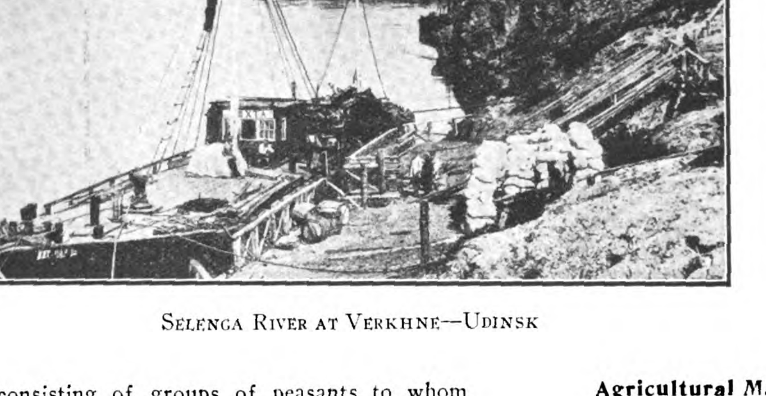
The most advantageously placed business centers in western Siberia are Omsk, Tomsk, Tobolsk, Novonikolaievsk, Kransoyarsk, and Irkutsk. The first and the last three are situated at points where the Trans-Siberian Railway crosses the principal rivers of the country which provide cheap transportation over vast areas during the greater portion of the year. Omsk and Novonikolaievsk are of special importance as distributing centers for agricultural machinery, etc., and the Government maintains at those points agricultural experiment stations and official testing grounds for agricultural machinery and implements.

### Credit Associations and Their Effect

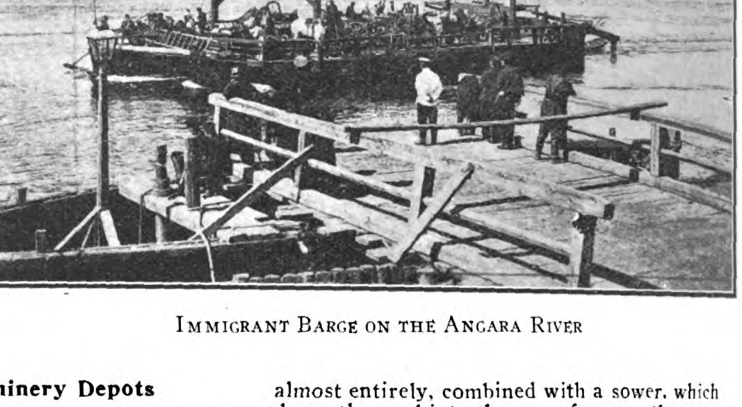
Among the factors facilitating trade in western Siberia must be considered the spirit of affiliation inherent in the Russian peasant class, which has given birth to an important cooperative movement. Credit associations



Chita, Center of a Rich Siberian Mining Region



Selenga River at Verkhne—Udinsk



Immigrant Barge on the Angara River

consisting of groups of peasants to whom Government aid is given in the shape of credit on the joint responsibility of the group, exist in large numbers and are multiplying as the newer districts are opened up and settled. There are 300 officia agricultural machinery and implement depots in Siberia, which advance farm equipment to poor settlers at low prices and on easy terms of payment. The dairying interest in western Siberia is represented by a union comprising 530 societies, with 120,000 members, who deal only through the societies. The societies are bound by their statutes to the sale of dairy appliances only.

In the agricultural-machinery business the effect of the facilities offered by these aids has been the withdrawal of many wholesalers from business. While this is perhaps regrettable in a sense, it has its compensations for the manufacturer, who, by selling to the credit associations, is on safer ground. His rate of profit, it is true, will be diminished, but in view of the probability of a larger turnover, the aggregate profits should be greater, as the consumption of agricultural machinery must inevitably increase. The shorter credit demanded by these associations enables the manufacturer to work with a smaller capital. They possess the local knowledge that enables them to sell to the right people, and, most important of all, they possess the means of securing a relatively quicker liquidation of debts and of enforcing payment in doubtful cases by tactful pressure through their members. Their losses from bad debts are said to be practically nil. The wholesaler, on the other hand, has still the best class of farmers with whom to trade, and, in practice, prices do not fall below a figure offering a reasonable profit. It was stated that this has been demonstrated in the business transacted by the official agricultural depots, which are finding by experience that the cost of administration and the minimum losses through bad debts will not permit them to sell at the low prices originally fixed. Their competition, therefore, has not been the ruinous one predicted at the outset. The credit associations by their statutes are limiting their dealings to a small number of articles, and the general merchant is thus relieved of a portion of his business that caused him anxieties and losses not commensurate with the accrued profits.

### Agricultural Machinery Depots

Particulars of the operations of the cooperative and c edit associations are not available, but those of the official agricultural machinery depots, furnished by the directors of the Colonization Department at Omsk, show the following sales in recent years: 1910, $2,560,000; 1911, $3,502,000; 1912, $4,347,000; 1913, $3,760,000. Of the debts contracted between 1897 and 1907 only 2½ per cent remained unpaid at the close of 1913. There are between 250 and 300 of these depots in operation in Siberia, which at the end of 1913 had machinery in stock valued at over $2,500,000. The sales are generally made on the basis of payment of half of the value of the article acquired during the first year, the remainder being paid off in installments according to the ability of the settler, which is governed by the result of the harvest.

A visit was paid to the farm-machinery testing grounds on the Irtish River, near Omsk, where excellent experimental work is carried out. Of special interest were the arrangements for testing the various kinds of farm machinery and implements under the direction of the Colonization Department. Foreign agricultural implements and machinery are admitted on equal terms with those of Russian manufacture and are carefully and impartially tested. The relative efficiency and suitability for their respective purposes under Siberian climate and soil conditions are also determined and made public. Specimens of the most suitable machines of all kinds are on view for the visiting farmers, information is supplied, and demonstrations are given if necessary.

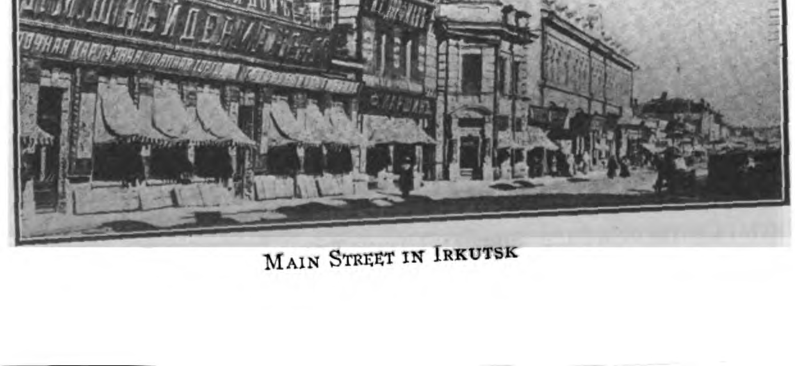
### Agricultural Implements Wanted

Siberia, being practically without manufacturing industries, presents a large and growing market for almost all kinds of manufactured articles, of which agricultural machinery and implements stand easily at the head. In complicated machines, such as self-binders, reapers, mowers, and rakes, the International Harvester Co.'s Moscow works dominate the position; further supplies are obtained from the United States and Canada, which arrive via the Baltic port. Plows are now mainly of Russian manufacture, roughly but strongly finished, all patterned after the Sack or Eckert (German) types. The walking plow is used almost entirely, combined with a sower, which drops the seed into the open furrow, the next following share covering it Two and three furrow plows of this description sell for $17 to $21; four to seven furrow, with seeder, $20 to $44. The shortage of plows in western Siberia is already considerable. Disk drills and disk harrows have become popular. The large Anglo-Russian factory at Ekaterinoslaf manufactures a good disk drill, which suits the soil conditions of Siberia. The disks are fitted at small intervals, four instead of the usual six inches: they are also adjustable, a point in which the Russian disk drill is considered superior to the imported article. Potato diggers are also in demand: they should be lighter than the ordinary American pattern and should be provided with a more stable delivery table. In regard to cultivators, any improvement in construction that would render the teeth less liable to be clogged by weeds would insure good sales. Small thrashing machines, with horse gears, are used in great numbers, and the supply is generally short. They are being successfully imported from Great Britain in competition with the local make. The price at the factory for the 4-horsepower size is $62; 6-horsepower, $72; 8-horsepower, $82.

Oil tractors are preferred in western Siberia, as the prevalence of alkaline water is against the steam-driven engine. Lightness is a desirable feature; the heavy engines with their narrow wheels pack the soil and prevent growth of vegetation. Tractors of the "caterpillar" type have been introduced. A few sets of these for plowing have been disposed of among the larger landowners, and the prospects for increased business are good. The country, however, is still relatively poor, and the general use of expensive farm machinery must be a matter of slow growth

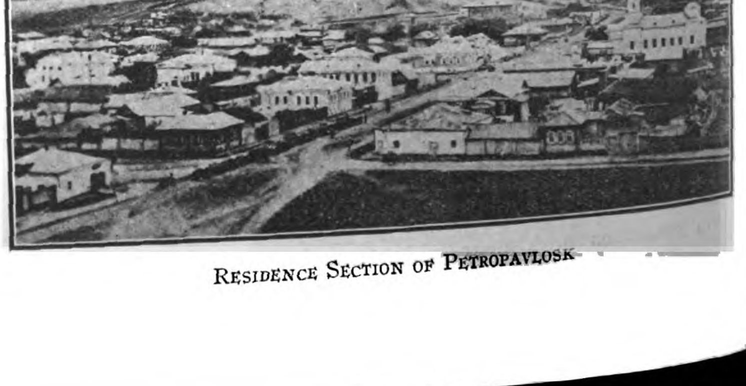
### Flour-mill Machinery

Flour-mill machinery (roller process) to grind 1,000 to 3,000 poods (18 to 54 short tons) of grain in 24 hours is in increased demand, as well as oil engines of the Diesel type, of 50 to 80 horsepower, required to operate them. Extra heavy flywheels are preferred. The rapid rise of the dairying industry in western Siberia is responsible for a large demand for separators, which have hitherto been supplied by Germany and Sweden.





Main Street in Irkutsk



Residence Section of Petropavlosk

# ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

## RAILWAYS

**Japan Buys Railway from Russia.**—Recent Japanese reports state that the sale of a section of the Chinese Eastern Railway line from Russia to Japan has been settled, but the price and other details of the transaction will not be announced until discussed between special representatives of the two Governments, who will be appointed soon. According to the agreement, Russia will sell the section from Kuanchengtzu to a point in the valley of the river Sungari, so that the Japanese and Russian railways will be divided by the river. Both countries will have their own stations on each side of the river.

An agreement is said to have been reached between the Russian and Japanese Governments as to the appraisal of the Southern half of the Harbin-Kwanchengtzu Section of the Chinese Eastern Railway and an official announcement will be made soon. The appraised value of the 71 mile section is said to be Y 10,000,000.

**Ssupingkai-Chengchiatun Railway Plans.**—Mr. J. Fujine, Chief Engineer of the Ssupingkai-Chengchiatun Railway, has organized his staff with 22 officials of the South Manchuria Railway Co., engaged by the new Railway for terms ranging from one to three years. Expressing his regrets that the survey was not yet under way, Mr. Fujine said: "The only excuse for this is that the negotiations at Peking have dragged on longer than at first expected for sundry plausible reasons. Mr. Wu-wu Director of the Kirin-Changchun Railway, appointed Director of the new Railway, came out with me and has gone to Ssupingkai. I intend to follow him in a few days to prepare for the surveying work, which is thought to require a couple of months. Next the plans for construction work will be drafted and the necessary arrangements for beginning the work will be taken in hand. The actual commencement of the work, I am sorry to have to say, will be after the return of spring next year. This will necessarily delay the completion of the new railway to the summer of 1919, whereas October, 1917, was originally set as a probable time for its completion. The expropriation of land necessary for the railway is to be started simultaneously with the surveying operations. Mr. Wu-wu (Director) himself will have charge of the affair. Lieut.-Gen. Wu, at Chengchiatun, has been requested to render whatever facilities lie in his power and we hear that the request has been most willingly acceded to. This task will be begun at the Ssupingkai end.

"How soon the construction work will be finished is difficult to say before the surveying operations are over. However, the proposed route, traversing comparatively level country, the work is expected to make rapid progress.

"The difficulty of collecting the necessary supplies should be taken into account. In principle, Japan is to supply these materials, but, if there is a way open for obtaining a desirable supply in China, such is to be procured. The construction funds of the Railway Loan are subject to delivery from time to time and are kept from use for any other purpose. On the Chinese side a staff of about fourteen experts and clerks has been appointed. The Japanese side may engage a number of experts, and the matter is left to my own discretion. The appointment of the Chief Accountant has not been decided yet, and is unlikely to be determined in the immediate future. In the meantime, I am to hold that post additionally."

**Hankow-Ichang Railway Locomotives.**—Robert W. Hunt & Co., Pittsburgh, Pa., have invited tenders on 3 ten-wheel freight locomotives for the Hankow-Ichang section of the Hankow-Szechuan Railway, Chinese Government Railways, to be made to their office in the Monongahela Bank building, Pittsburgh, Pa.

**S. M. R. Traffic Returns.**—The South Manchuria Railway traffic returns for the month of June were as follow:—

| Receipts | | Increase or decrease against June 1916. |
|---|---|---|
| Passengers ... | Y380,618.71 | + 107,287.18 |
| Goods............ | 998,848.46 | — 74,631.02 |
| Warehouse ... | 34,042.93 | + 11,851.86 |
| Miscellaneous. | 62,701.93 | — 3,322.55 |
| Total ........ | 1,476,212.03 | + 41,185.47 |
| Daily average | 49,207.06 | + 1,372.84 |

**Electric Tram to Kodzu, Japan.**—The Imperial Railway Bureau began yesterday the surveying of the proposed electric tramway line between Sakuragicho, Yokohama, and Kodzu. From Sakuragicho station, the bureau will build an elevated line as far as Minami Ota, thence an ordinary line will be built to Kodzu. At Ofuna, a branch for Yokosuka will be built. It is the intention of the railway authorities to run electric trains in the neighborhood of Tokyo and for long distance steam trains will be used. From Numadzu to Shidzuoka on the Tokaido line, another electric tramway line will also be built for rapid transportation.

**Russia Wants 600 Locomotives.**—The Russian Government's locomotive inquiry, concerning which it was noted in the Railway Age Gazette of May 26 that the Canadian Locomotive Company had been asked to quote prices on 600 locomotives, is understood to include at least 600 and possibly 1,000 engines of the Decapod (2-10-0) type similar to those which were ordered about this time last year.

**Manila Railroad Purchase.**—Not only those interested in the Philippine Railway Co., but former officials of the Islands are expressing vigorous views as to the unwisdom of the Philippine Government in even considering the purchase of the Manila Railroad Companies Lines, a full account of which project has been published in recent issues of the Far Eastern Review. The latest opponent of this experiment in Government ownership is former Supreme Court Justice Charles Elliott, later Secretary of Commerce and Police, who intimated that the Filipino efforts for independence had a railroad deal involved in the general question which Congress should investigate.

"If the bill is passed by Congress, and independence is given to the Islands," he declared, "the deal for the purchase of the Manila railroad will be handed over along with what they call freedom. British bondholders will be several million dollars to the good, and if the new republic of the Philippines neglects to observe the obligation assumed by the contract, these bondholders will, of course, expect Uncle Sam to see that the contract—made while the Philippines were his agent—is performed. A more pernicious and unjust scheme never was, in my judgment, put over on a trusting and ignorant people," Judge Elliott said vigorously. "Just as the Wilson-Harrison administration wants to grant independence to the Philippines, it is loading them up with a railroad which they are supposed to operate successfully after a man of the experience and skill of Horace L. Higgins, president of the Railway, backed by the Speyer Syndicate, has been unable to make it pay expenses."

**Motor Traffic in Philippines.**—Collector of Internal Revenue Rafferty reporting on new transportation facilities in the Philippines says that transportation to and from the east coast of Luzon, which has always been very backward and difficult and often dangerous, is now much improved by the extension of the railway from Manila to Hondagua and the additional shipping facilities afforded north as far as Casiguran and south as far as Daet in connection with the railway service. The extension of public roads has resulted also in great reductions of the cost of transportation and brought about a consequent reduction in the cost of food products. In some cases, hemp for example, the cost of transportation to market is only a quarter of what it was before, the same applies to rice sold to the hemp farmers; thus giving back to the people indirectly in a short time the amount of money invested by the government in public roads. Aside from the advantage to commerce in good roads, they have added much, since the arrival of the automobile truck, to the social life of the Filipino, as was evidenced by the great number of people that are to be seen traveling on automobile trucks wherever good roads are found, at a rate astonishingly low. An idea of the cheapness of travel by motor car is shown by the following: rate from Iriga to Legaspi, a distance of 65 kilometers, P1.50 (40 miles for 75 cents gold), from Ligao to Legaspi, a distance of 30 kilometers, P.0.40 (18 miles for 20 cents gold.) Despite the keen competition which prevails in almost every district, the overcrowding of these passenger trucks is the rule, particularly in the province of Albay.

**Linking Siam and F. M. S.**—The railway to link up the Royal Siamese Railways and those of the Federated Malay States is making rapid progress despite the war. The railway starts from Alor Star Station and runs in a North-easterly direction through Perlis to the Siamese Frontier. Its length is 24.1 miles.

About five miles from Alor Star on the Jitra-Chongloon-Singora main cart road, is Anak Bukit Station. Here are the Headquarters of the Kedah-Perlis branch of the F. M. S. Railway. Near the railhead at Kubong Liga is the bungalow of Mr. R. H. Pope, the Assistant Engineer. Work was commenced on May 20, 1915, and three-quarters of the earthwork has been completed, while the rails have been laid as far as the 92nd mile from Bukit Mertajam and 36 miles from Alor Star.

The gradients are easy with long stretches of straight and a few curves. At the 76th mile the line crosses the Kodian-Sanglan Road. As far as Aro, where H. H. The Rajah of Perlis has his Istana, the line is carried on a long low bank— four or five feet high—through padi fields and swamps.

When completed the line will have 111 bridges and culverts, a large number of which have already been constructed, while most of the others are in hand. The only bridge of any importance is the one that crosses the Anak Bukit River, not far from the station of that name. This bridge has a central span of 150 feet with two shore spans of 100 feet each. All the work on this bridge has been completed with the exception of the steel work of the 150 foot span that has not as yet arrived from England. The ground being swampy, the foundations of the larger bridges have had to be carried down to a considerable depth in some cases. The abutments are built on brick wells or cylinders, which are sunk until firm ground is reached, the interior being filled with cement concrete, the deepest of these wells being 42 feet below the level of the ground. The abutments of the smaller bridges are built on pile foundations in swampy ground.

All the crossings at the cart roads are level-crossings, there being no overhead bridges. Provided that the materials arrive from England in time, it is expected that the Siamese line will be completed through to the frontier about a year hence.

A later report states that the Chief Resident Engineer for Construction, F. M. S. Railway, put through the railhead to the Perlis-Siamese Boundary on July 2nd. This is the terminus of the F.M.S. Railway.

The Siamese Southern Railway from Singora to Bangkok according to present arrangements is to be opened on August 15th next. The train will only run in the day time and passengers from Singora will pass the afternoon and night at Tongsawn (the junction for the Trang branch) and the second night at Chumpnon, arriving the next evening at Bangkok.

**Russian Railway Construction.**—According to the explanatory note of the Russian Ministry of Finance regarding the estimates of State revenue and expenditure for 1916, the total length of Government railways under construction and for the construction of which permits had been granted and plans made at the beginning of September, 1915, amounted to 5,600 miles, for which the sum of $554,000,000 would be required. Of these railways, 3,500 miles were being constructed (at a cost of $324,800,000), permission for construction had been granted on 300 miles (cost, $27,295,000), and further construction had been planned for 1,800 miles ($202,086,000).

In regard to the construction of railways by private companies, the length of railways, on which permission for construction had been granted by the Government with a guaranty of the stock capital, amounted to 745 miles, for the sum of $49,900,000; besides, permission had been granted to construct branches (12 in number) of the total length of 90 miles, at the cost of $2,730,000; and a further permission had been granted for the construction of 7 miles, at the cost of the builders, for the sum of $293,000.

Consequently up to September 1, 1915, permission had been granted for the construction of private railways of 842 miles in length, at an actual cost of $53,000,000.

Besides the above, there exist projects for the construction of 4,267 miles that have been approved for construction by the committee of new railways, the building to be carried out by means of private capital ($289,700,000); while a number of projects for railways of a total length of 5,300 miles, to cost $340,000,000, will be investigated in the near future.

In regard to the realization of these projects, it must be noted that the conditions created by the war and the consequent difficulty of attracting private capital for the construction of railways makes the date of the execution of these projects uncertain.

The United States Commercial Attaché at Petrograd reports that the railway extension from Julfa, on the river Araxes, to Tabriz has been completed. The gauge of the new railway, which is 93 miles long, is the same as that of the Russian railway system. The railway is under Russian control and management, and is not at present intended for the conveyance of passengers. The track follows, between Julfa and Tabriz, the line of the Indo-European telegraph system of India. From the town of Sophian, about 25 miles from Tabriz, a branch of the railway has already been completed to Lake Urumiah, around which is one of the richest districts of Persia. This railway, with its branch line, will doubtless cause an enormous development through all this part of Persia. Much new land will be opened up to agriculture, and various mines, chiefly copper and wolfram, will be worked, which have not been developed because of transportation difficulties. Possibly the railway may be extended to Teheran and thence southeast to Ispahan, and into Baluchistan, whence it could connect up at Nushki with the railway system of British India.

**Shanghai Electric Construction Co.**—At the tenth annual meeting of the Shanghai Electric Construction Company, Ltd., held at Basildon House, London, E.C., on May 19th, Sir Alfred Dent, chairman of the company, reported gross traffic receipts amounted to £117,975 4s. 3d., from which has to be deducted £31,707, 5s. 4d. for loss by native copper coinage, leaving effective receipts of £86,267 18s. 11d, which is practically the same as in 1914. After deducting the working expenses in Shanghai, an operating profit remains of £35,003 3s. 7d. as compared with £35,892 0s. 8d. in 1914. This year's account benefits by the larger amount brought forward from 1914 of £4,702 17s. 2d., and after charging London expenses and interest there is an available balance of £35,786 17s. 1d. as compared with £34,002 17s. 2d. last year. This was dealt with by transferring £10,000 to reserve for renewals account, which brings that account up to £46,816 16s. 5d., after charging it with £638 19s., and £2,000 to preliminary expenses account, reducing that item to £18,000. From the balance of £23,786 17s. 1d., a dividend of 7 per cent. will absorb £22,400, and leave £1,386 17s. 1d. to carry forward, or about the same amount as carried forward in 1913. The expenditure on construction account was £12,567 (about £10,000 less than last year), and the principal items were as follows:—

| | |
|---|---|
| Permanent way and overhead equipment including loops at railway station ... ... ... ... | £ 377 |
| Buildings extension and installation | 1,038 |
| Rolling stock—completion of 10 new motor cars ... ... ... ... | 5,794 |
| Railless traction ... ... ... ... | 196 |
| Land for sub-stations and sundry improvements... ... ... ... ... | 1,521 |
| Temporary overhead feeder cables | 3,641 |
| Total ... ... ... ... ... | £12,567 |

"We also added plant and tools to the value of £1,399. Power expenses have been reduced to £8,684 against £9,813 19s. 1d. in 1914, and have been brought down to c.2.97 per car mile against c.6.15 in 1909, the average cost per unit being c.3.10. A further reduction per unit is looked for when the Council have completed their new Riverside station, when we shall be able to do away with the overhead feeder cables which were put in to replace the original underground cables which have proved unsatisfactory in many instances. The overhead cables were purchased on favourable conditions, and the materials at to-day's prices could be sold on terms that would go a long way to cover the original cost. Last year were carried nearly 60 millions of passengers against 11¾ millions in 1909. For the first three months of this year 15½ millions of passengers (or 2 millions more than for same period in 1915), which is at the rate of 62 millions per annum, and as this increase will be maintained, we have applied to the Municipal Council for permission to introduce 15 new trailers. This, if sanctioned, will provide us with an equipment of 90 motor cars, 70 trailers, and 7 railless cars, or a total of 167 against the original equipment of 65 motor-cars. All the cars are as usual being maintained in a thoroughly efficient state. The effective receipts for the first four months of the year amount to $348,638, against $301,346 in the same period of 1915—an increase of $47,292.

"Notwithstanding the assurances given to the Diplomatic body in Peking by the Chinese Minister of Finance, the depreciation of the native copper coins has been accentuated and the ratio of loss to gross receipts has been increased to 28-58 per cent.—6.91 per cent. on our share capital, as compared with 26.04 per cent. in 1914, and the loss for the year amounts to £28,038 9s. 1d. against £25,880 in 1914. At present there are good reasons for believing that the depreciation will be arrested at no distant date, and should this charge on our receipts be minimised or eliminated altogether, it is obvious our account will in future be very materially improved. The rise in the silver exchange is also greatly to our advantage.

"The Fokien new roadway has been completed in cement concrete, and railless service was resumed on July 6 last, the weight of the cars being reduced to meet the requirements of the Council. The cars so altered have operated most successfully on the smooth surface, and since the opening to Dec. 31 we have carried 1,439,804 passengers, run 49,753 car miles, and collected a gross revenue of $19,347.49, which, after deducting loss on native coinage, working expenses and depreciation, has paid over 6 per cent per annum on the capital employed. The route (which is less than ¾ of a mile) is too short to get the full benefit of the seven cars available, and we have applied to the council for an extension. The staff numbered at the end of the year 1,148 as compared with 1,137 in 1914."

**Shantung Railway Locos.**—The Shantung Railway has ordered 3 Consolidation locomotives from the American Locomotive Company. These locomotives will have 20½ by 26-in. cylinders, 50-in. driving wheels, and a total weight in working order of 158,000 lb.

**Swatow Railway Extension.**—Recently the Swatow-Chaochowfu Railway commenced surveying a route between its terminus and the Swatow Harbor water front, a distance of over a mile, with a view to extending the railway to the water's edge. It is planned to construct two bridges over the Han River, each 400 feet in length. It is estimated that improvements costing a quarter of a million dollars (gold) will be made. The rails and bridge girders now in use were furnished by the Carnegie Steel Works and the American Bridge Co., respectively

**Russian Rail Orders.**—A recent item in the Wall Street Journal says: "The Russian Government is quietly trying to place orders for over 300,000 tons of steel rails for delivery in the closing quarter of 1916 and the first quarter of 1917. It is seriously questioned whether these orders will be placed, simply because rail mills are in nearly every case booked up until well into next year, and it is thought improbable that capacity to roll so large a tonnage for export within the required time limit will be found."

**One Station for Tokyo.**—Imperial Government Railway officials are now working on plans for building elevated tracks to bring all the railways now running into Tokyo into the Tokyo Central Station. It is estimated that work to connect the Uyeno and Manseibashi Stations with the Tokyo Station can be finished in two years. The track from the Manseibashi Station will be built first, and should be completed by August or September next year; while the Uyeno track should be finished by April, 1918. The distance between

Manseibashi and Tokyo Station is 4,200 feet, and at first two double tracks for electric cars will be laid in the elevated track. This work is already under way and about 750 laborers are employed. The work has progressed far enough for the arches to be erected. They will be made of steel frames and concrete. The scarcity of steel, it is feared, may delay the completion of this track.

**Osaka Tram Proposed.**—Mr. Yasuda Jenjiro and other promoters of the proposed Keihan (Tokyo-Osaka) Tramway Company have called on Count Okuma and Dr. Soyeda, president of the Imperial Railway Bureau, and asked the authorities to grant a permit to build a tramway line between Tokyo and Osaka, a distance of 285 miles. The promoters sent an application a few years ago to the Government, asking permission to build a line connecting Tokyo and Osaka in six hours, with a car leaving Tokyo every 30 minutes, but failed to get a permit at that time. The capital to be invested in this enterprise is 100,000,000 yen. The work will start as soon as a charter is granted.

**Peking-Mukden Bridge.**—The through train which reached Hsinmintun on June 29th inst. was the first to cross the newly erected Hsinminfu bridge on the Peking-Mukden Railway. Conductor Kuo was in charge and Locomotive-Superintendent Shellam travelled down specially from Mukden with a large party of Chinese, Japanese and American passengers. The people at Hsinmintun celebrated the occasion by firing crackers before and after the train crossed this bridge, which replaced one destroyed by last year's floods.

The Authorities of the Peking-Mukden Railway appropriated $400,000 for a new bridge, embankments, a new station and quarters and goods depots to replace the buildings ruined by the flood. The new bridge measures 1050 ft. long. District Engineers Moller and Barnes superintended the work of construction.

**S. M. R. Co. Buying Rails.**—The South Manchuria Railway has resumed its purchases of rails, the buying of which was discontinued at the end of July last year. The prices offered range from 40 sen a foot for 80 pound rails to 6 sen for 12 pound ones. The rails may be presented for purchase at any railway station, a district agency, or a linemen's office.

**S. M. R. Calling Up Capital.**—The South Manchuria Railway Company has decided to call up the payment of the second instalment on new shares on October 1. This will place 4,000,000 yen at the disposal of the company.

**C. E. R. Shops Burned.**—The Railway Workshops of the Chinese Eastern Railway, Harbin, were destroyed on July 6, by fire, the origin of which has not been ascertained. A large number of locomotives and cars imported in parts from the United States were in course of erection. Many were lost. The loss is estimated at more than 750,000 roubles.

## SHIPPING

**Pacific Mail Abandons Pacific?**—Advices reached Manila late in June that the Pacific Mail Steamship company had abandoned the trans-Pacific service and were placing their newly purchased Dutch steamers on the Mexican, Panama and Central American run. Only recently it was announced that the Toyo Kisen Kaisha, Pacific Mail and the Canadian Pacific had arranged for an inter-change of tickets and the latest advice raises some doubt in shipping circles, as to the exact conditions that now obtain.

This report may have been occasioned by a delay in sailing of the first steamer of the new Pacific Mail line which Japanese newspapers say will leave San Francisco about August 19 and will arrive in Japan during the first week in September, instead of in August as was at first reported. The steamer will clear for home about the middle of October.

Regarding the possibility of the service being restricted to the United States coasts, Shipping Illustrated under date of May 13 has the following to say:

"The Pacific Mail Steamship Co. has started a service through the Canal, terminating at Cristobal, where its vessels exchange cargo with Atlantic carriers. The line will continue essentially the service of the past, running some vessels direct between the Isthmus and San Francisco, and some on a coasting route, calling at Central American and Mexican ports on the way. For the present there will be a sailing from the Isthmus about every 10 days. It is expected that the service will be increased within a relatively short time by the addition of the steamships Colombia, Ecuador and Venezuela, purchased from the Royal Dutch West India Mail. The Colombia is now undergoing repairs in Great Britain of damage resulting from striking a mine. With the addition of the three ships the Pacific Mail will have 10 plying between San Francisco and the Isthmus. The Pacific Mail was formerly prohibited from using the Canal, on account of being owned by a railroad, under conditions contrary to the provisions of Section 11 of the Panama Canal Act. Evidence of the termination of this condition has been furnished to the Canal authorities."

Prior advices from San Francisco were that the Ecuador was to leave that port on June 17, the Columbia July 15, and the Venezuela Aug. 19, each vessel leaving thereafter every 77 days. They will call at Honolulu, Yokahama, Kobe, Shanghai, Manila, and Hongkong outward, and Shanghai, Kobe, Yokohama, and Honolulu homeward. Taken in connection with the ships of the Toyo Kisen Kaisha Company, this new service gives weekly sailings from San Francisco to the far east. These ships are of 5,700 tons capacity, have accommodations for 111 cabin and 200 steerage passengers, and were built at a cost of $4,000,000. They are of the oil-burning type and carry sufficient fuel to make the round trip.

**China Mail to Expand.**—Announcement has been made by the China Mail Steamship Company, which entered the Oriental service last October, that it is in the market for at least three new vessels. These ships when purchased will be used in the ever-growing freight and passenger trade between San Francisco, China, Japan and the Hawaiian Islands. In order to purchase the new vessels the China Mail Company has made application to the California Commissioner of Corporations to sell 99,985 shares of its capital stock at par, $21 per share, for cash so as to net the company the full amount of the selling price.

It was recited that the company which purchased the steamship China from the Pacific Mail last fall proposes to engage on an extensive scale in the transportation of passengers and merchandise in the trans-Pacific trade, and that with proceeds arising from the sale of the shares the company proposes to pay off a mortgage of $150,000 on the steamship China and approximately $180,000 of other indebtedness and to acquire additional vessels to use in its business. Permission for the sale was granted. According to Look Tin Ely, president of the company and of the Canton Bank of San Francisco, it is the intention of the China Mail Company to continue expanding until they are in a position to care for the great amount of freight that they have been called upon to handle.

According to the Japan Advertiser of July 8, Captain Dobson of the steamer China is said to have received a cablegram from the head office in San Francisco, asking him to conduct a survey of two Austrian passenger liners interned in Shanghai. The story continues that negotiations were opened with the company owning the Austrian ships. They are both larger than the China and are well equipped. After an inspection of the ships made by Captain Dobson a brief message was sent the San Francisco office, where full particulars will be submitted to the board of directors upon the China's arrival. As it is almost impossible to have ships built at this time, it is expected that the China Mail will buy the Austrian ships if they meet requirements. Captain Dobson refused to say anything yesterday about the matter. Only three Austrian ships are interned in Shanghai now. They are the Bohemia, the China and Silesia.

**American Hawaiian Line's Plan.**—Recommendations have been made by H. W. Roberts a representative of the American-Hawaiian Steamship Company, that the Philippines be included in the company's ports of call.

Mr. Roberts, who is at the head of the Los Angeles branch office of the company, has been touring the orient to investigate freight conditions. After visiting several Japanese and Chinese ports, as far as Hongkong, Mr. Roberts came to the Philippines as a round trip passenger on the British steamer Chinhua, calling at the ports of Manila and Iloilo. He also visited Cebu, and expressed himself as highly pleased with the present freight conditions in the islands.

The American-Hawaiian Steamship Company with home offices in New York at present operates 26 freighters aggregating 260,000 tons, all oil burners. Ever since the opening of the Panama Canal, the company has been operating a line running from the Atlantic coast by way of the canal to Los Angeles, San Francisco, Seattle and on to Honolulu for sugar. Returning boats touch only at San Francisco where the company has the main Pacific offices, and from this port back to the Atlantic. Recently, however, on account of the closing of the canal due to the last landslide, the company inaugurated a line to South American ports, calling at Rio de Janeiro and Buenos Aires.

As an experiment, the S. S. Floridan of the company was sent to Hongkong a few weeks ago with Mr. Roberts on board and from the result of this trial trip and his report, it is evident that the field was found to be lucrative, as another boat, the Georgian, will be sent out to the British port in time for the return of Mr. Roberts, and which after loading a partial cargo will be taken by him to New Caledonia where a full cargo of metallic nickle has been assured to the company's representative. It is understood that the freight paid on this shipment of nickle will be at the rate of $100 per ton, laid down in Baltimore, on the Atlantic coast via the canal.

Although Mr. Roberts was non-committal, as to the probable recommendations he would make to his home office, of the advisability of inaugurating a regular Oriental run by the company's boats, he stated that in case such a run was considered the probable ports of call would be Yokohama, Kobe, Shanghai, Hongkong and Manila, and if freight conditions warranted, Cebu and Iloilo.

**Profits of Steamship Companies.**—The annual report of the Cunard Line has declared a dividend of 10 per cent. less income tax on the ordinary shares for 1915, and also a bonus of 10 per cent. free of income tax; the Gulf Line of Greenock has declared a dividend of 20 per cent. compared with 5 per cent. in 1914; the Peninsular & Oriental Steam Navigation Company has declared a dividend of 5 per cent. less income tax with an interim dividend of 12 per cent. for six months ended March 31; the Royal Dutch Lloyd's dividend is 12 per cent. against 3 per cent. in 1914; the Royal

Netherlands Company, 15 per cent. against 6 per cent. in 1914; the Royal West India Mail, 12 per cent. against 5½ per cent. in 1914.

Out of altogether 51 steamship companies, major and minor, in Great Britain, 29 companies have declared a dividend of over 20 per cent., 8 companies of over 30 per cent., etc. In particular, the China Mutual Steam Navigation Co. has declared a 106 per cent., and several others a 40-45 per cent., dividend. The Holland-American Line, the greatest steamship company, capitalized at 25,000,000 francs, has realized a profit of 48,000,000 francs for the fiscal year of 1915 and has declared a 50 per cent. dividend to the shareholders, setting aside, moreover, a large amount of ships' depreciation fund. In the Scandinavian Peninsula there are about two dozen companies, which declared 20—50 per cent dividends.

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**P. and O. Adds 21 to Fleet.**—The Peninsular and Oriental Steam Navigation Company has purchased the steamships belonging to the New Zealand Shipping Company of London and the Philadelphia Steamship Company, according to a cablegram received by the Nippon Yusen Kaisha in Tokyo. By these purchases the P. and O. adds twenty-one new vessels to its fleet. The New Zealand Company possesses ten steamers, three of which are over 10,000 tons each in displacement; the total tonnage of these ten boats is 137,668 tons. The Philadelphia company owns eleven steamers, the total tonnage being 180,367 tons. Two of these boats are of more than 10,000 tons displacement each.

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**24 New Japanese Ships.**—According to an investigation by the Department of Communications, the number of vessels over 1,000 tons launched during the past six months this year was twenty-four with a total tonnage of 81,372. The details are as follows:

| | Number. | Tonnage. |
|---|---|---|
| January | 5 | 16,903 |
| February | 2 | 21,485 |
| March | 6 | 26,876 |
| April | 3 | 8,538 |
| May | 4 | 9,822 |
| June | 4 | 8,648 |
| Total | 24 | 81,372 |

**Japanese Ships now 2,146.**—The Department of Communications has announced the total number of steamships of more than 20 tons in Japan and the tonnage at the end of June, the total number being 2,146 with a total registered tonnage of 1,004,666. The details are as follows:

| Tons | Number | Tonnage |
|---|---|---|
| 20— 100 | 1,042 | 24,460 |
| 100— 300 | 436 | 42,090 |
| 300— 500 | 89 | 20,856 |
| 500— 1,000 | 148 | 64,952 |
| 1,000— 2,000 | 126 | 115,151 |
| 2,000— 3,000 | 126 | 195,402 |
| 3,000— 4,000 | 86 | 183,566 |
| 4,000— 5,000 | 28 | 81,525 |
| 5,000— 6,000 | 30 | 103,866 |
| 6,000— 7,000 | 12 | 47,300 |
| 7,000— 8,000 | 12 | 56,085 |
| 9,000—10,000 | 6 | 36,601 |
| Above 10,000 | 5 | 32,812 |
| Total ... | 2,146 | 1,004,666 |

**New Japanese Routes.**—For some time past the Osaka Chamber of Commerce was engaged on the task of drafting a scheme for the inauguration of new steamship services in Chinese and South Sea waters, and also round Africa and America. On June 23 the Chamber held a meeting, and decided to memorialise the Government on the advisability of opening five new steamship services. It is proposed to open a service along the Chinese coast with Shanghai as a starting-point, and another to the South Sea Islands with Singapore as a terminal center. A third line is to be inaugurated from Singapore to Saigon and Bangkok; a fourth from Singapore to Sydney, Melbourne, Adelaide, and Java; and a fifth from Singapore, via the Cape of Good Hope, to the eastern coast of South America, New York, and Panama.

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**Dairen Seattle Run.**—A triangular steamships service, with Seattle, Kobe and Vladivostok at the corners, has been opened by a Japanese steamship company, the Shosho, which has its head office at Dairen. The company has already on the run the Yesan Maru, 4,600 tons, and the Kagoshima Maru, 4,566 tons. Three more vessels have been chartered by the company for this new service. On the outward trips the vessels will carry miscellaneous goods from Kobe for Seattle and will carry military supplies from Seattle for Vladivostok on their homeward trips. From Vladivostok they will bring beans and other miscellaneous goods to Kobe.

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**Zamboanga, P.I., Plans Reprisals.**—Cables from Manila advise, says the Mindanao Herald, (the only newspaper in the southernmost part of the Philippine Islands and spokesman for several flourishing colonies,) that the Board of Public Utilities has approved an additional increase of twenty-five per cent in freight and passenger rates for the vessels engaged in the interisland trade. This makes a fifty per cent increase in freight and passenger rates since January 1st of this year. In the opinion of the merchants of Zamboanga this is simply a legalized robbery which they are helpless at the present time to combat.

No protest was made by the merchants of Manila against this additional increase in rates, and it therefore seems that the merchants in Manila care nothing for the merchants in the provinces, and that their only object is to sell goods to the provincial merchants at a handsome profit and then permit them to be robbed by the transportation companies.

There is a remedy that lies in the hands of the producers and merchants of the department of Mindanao and Sulu, namely, the purchase of their own boat for the purpose of transporting their merchandise from Zamboanga to the different cities and towns of the department, and their products to Zamboanga; then it is up to the merchants of Zamboanga to purchase their goods in the United States, or elsewhere, and have them shipped direct to Zamboanga and in that way eliminate Manila entirely. Zamboanga has direct boats from Australia, Singapore, Hongkong and Japan, and goods can be purchased and shipped direct to Zamboanga without passing through the port of Manila. If such a step were taken it would certainly redound to the benefit of the merchants, producers and consumers of the department. It is up to the merchants and business men of Zamboanga to provide themselves with a new and up-to-date boat to carry their own merchandise and produce.

A certain travelling merchant on one of the interisland steamers calling at the port of Zamboanga stated to a representative of the Herald that on one trip of said boat from Manila to southern ports and return the gross earnings were P36,000.00, and that the expenses did not exceed P6,000.00, leaving a net profit of P30,000.00. One would imagine that this was sufficient for the earnings of one boat for one month, especially taking into consideration the class of boat it was.

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**P. I. Government Sells Ships.**—The Philippine government has been the gainer of P695,463 by the sale of the old vessels of the former bureau of navigation, according to a statement from the bureau of customs. This amount has been the price of 12 vessels sold to date, the latest sale being that of the coastguard Samar which has been purchased by the Manila Railroad company for P90,000. The sale of this boat has been under negotiation ever since its charter by the railroad company, upon the opening of the Hondagua extension. In the early part of 1914 when the old bureau of navigation was merged with the bureau of customs, many of the government vessels then in use and operated by the former bureau were laid up as unnecessary to the government service, and not long after their sale was advertised. Offers have been received from time to time for particular boats and the sale was only effected when the offer was thought by the bureau of customs officials to be advantageous to the government.

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**Light Fails, Liner Wrecked.**—That the Spanish Mail liner Fernando Poo ran on to a reef in Mindanao waters because the light on Black Rock was not in operation on the night of the disaster, was the statement made in two messages from the site of the stranded steamer, received in Manila. One message came to Captain Llanso, head of the local agency of the Spanish Mail, from Captain Ferrer of the Fernando Poo, and the other came to the insular government from Captain Denison of the coast survey steamer Pathfinder which took off the vessel's passengers. The vessel sunk in 30 fathoms when pulled off the rocks. There can be no doubt from the tone of the two messages that the accident is attributable to the fact that the Black Rock light was not in operation. This light is an automatic acetylene gas illumination and was filled on May 24 with a six months' supply. Local customs officials believe that fishermen or thieves either stole the acetylene fluid or poured it out. A rigid investigation is to be made.

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**Dollar Line Leases Dock.**—The Dollar Line has leased the Great Northern dock at Vancouver for handling trans-Pacific service. The Dollar Line has been using the G. N. dock for some months in connection with its vessels plying to the Orient and Vladivostok, but the company has now leased the dock, which is the eastern section of the Balfour, Guthrie dock, and the wharf will be known as the Dollar Dock.

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**Russian Steamer Wrecked.**—The Osaka Mainichi reports that the Russian steamer New Guinea stranded on the southern coast of Karafuto (Japanese Saghalien) sometime prior to June 29. A salvage boat has been dispatched to the scene of the accident by the Matsuda salvage office at Hakodate.

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**Japanese Yards Launch Steamers.**—The Seoul Press reports that the Unkai Maru No. 6- (3,200 tons) and the Unkai Maru No. 7 (2,300 tons), recently under construction for Mr. S. Nakamura of Chinnampo, have been completed. The former was launched on June 26 at the Sakurajima Iron Works and the latter at the Uraga Iron Works the following day.

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**Dock Co. Salving s.s. Wisley.**—The Hongkong and Whampoa Dock Company has secured the contract to salve the steamer Wisley, and the Company's tug David Gillies returned to the wreck on June 24, to commence operation. The Wisley (late Wray Castle) took fire May 26 and was beached in Vungro Bay, near Cape Varella, about 640 miles from Hongkong, when on a voyage from New York to Vladivostok. It is anticipated that it will take at least two months to salve the vessel and cargo, and bring the ship to Hongkong for repairs. When the David Gillies first visited the wreck the Wisley was submerged from the foremast, with about 12 feet of water above deck at the deepest part.

**New Saigon-Bangkok Line.**—For several years La Compagnie des Messageries Fluviales de la Cochinchine has been subsidized to carry mail, passengers, and freight between Saigon, French Indo-China, and Bangkok, Siam, as well as over the numerous waterways of Cochin China, Cambodia, and Laos. This company gave a fortnightly service to Bangkok on the *Donai*, a steamer of 376 tons. Its contracts with the French Government recently expired, and the company did not choose to renew them for the Bangkok route. The subsidies were granted to M. Roque, director of La Compagnie des Messageries Fluviales du Tonkin, who sent down from Haifong the *Jaue*, a vessel of 386 tons, to take the place of the *Donai*.

**Japanese Shipbuilding Force.**—The number of Japanese workmen employed in shipbuilding in Japan is put at about 30,000, including 10,000 at the Mitsubishi Shipbuilding Yard (Nagasaki), 3,400 at the Mitsubishi Shipbuilding Yard (Kobe), 9,500 at the Kawasaki Dockyard (Kobe), 3,000 at the Osaka Iron Works, 1,900 at the Uraga Dockyard, etc., the daily wages of each workman averaging 80 to 90 sen.

**Penang Dock Contract.**—The Eastern Shipping Company's Dockyard at Butterworth, Penang, is building the largest steel vessel it has yet taken in hand, the dimensions being: 188ft. length, 28ft. beam, and 14ft. moulded depth. The vessel will have accommodation for twenty-four first class passengers amidships. Completion of the vessel is expected in six months.

**Bangkok-Europe Liners Sold.**—The East Asiatic Co. (Ltd.) has sold to Norway the motor vessels Bandon, Chumporn, and Pangan, which in the past have been on the Copenhagen-Bangkok run. These vessels will be turned over to the buyers in June, July, and September, 1916, respectively, after having completed one more voyage between Bangkok and Copenhagen. These ships were built in Glasgow in 1909, and were converted to motor vessels about two years ago. It is said that the new owners paid about $2,500,000 for the vessels. The local agents of the Royal Packet (Dutch) Steam Navigation Co. (Koninklyke Paketvaart Maatschappy) have informed this office that the sailings of this line between Bangkok and Batavia have been suspended indefinitely; and thereby practically the only neutral port of transshipment for United States merchandise to Siam has been eliminated.

A number of Norwegian steamers which in the past years have been on the Bangkok-Hongkong and Singapore runs have been leaving for home lately, and others have been chartered at record figures; vessels originally having been chartered for 6,000 Mexican dollars per month are now bringing $14,000 to $25,000 for the same period. The freight rates between Bangkok and Hongkong, which during 1915 fluctuated from 25 to 60 Mexican cents per picul (133⅓ pounds), have now (April, 1916) advanced to $1.20 Mexican per picul, and the Bangkok-Singapore rates have similarly shown a variation from 15 to 42½ cents during 1915 to 80 Mexican cents at present.

**New Russian Port Open.**—For the first time since the opening of the European war, American exporters now have an opportunity to land goods in Russia without interference or delay by Government shipments, according to information received from the Russian-American Chamber of Commerce of Moscow by the American-Russian Chamber of Commerce, recently organized in New York. A cablegram announced that on June 14 the port of Nikolaievsk, at the mouth of the Amur River in Siberia, was opened for navigation to provide a new channel for reaching the Russian market. It is anticipated that much of the freight which has been going to Vladivostok during the winter months will now be diverted to this port, from which it will be transported up the Amur River to Stretyinsk, where connexion is made with a railroad line, linked to the Trans-Siberian Railroad. The new port is of importance in that it gives an all-water route to the great Chita Mining district.

**Prince Liner Fined.**—The owners of the British steamer Chinese Prince (4,834 tons: Prince Line, Ltd., Newcastle) says a Reuter dispatch from Manila, are appealing against a fine of 50,000 pesos imposed on the ground that 2,000 parcels consigned to merchants in Manila are missing from the steamer. It is alleged that these were confiscated by the British authorities at Penang on the ground that the consignees were on the Black List.

Later advices from Manila are that a fine of Pesos 25 for each missing package was imposed. The maximum fine is Pesos 500 per package.

Insular Collector of Customs J. S. Stanley, in handing down his decision, makes the statement that the review of all evidence presented in the hearing fails to show that due care was exercised by the officers of the vessel properly to safeguard the cargo, as no evidence was presented tending to show that the authorities who seized the missing cargo had even receipted for same nor was entry asked by the captain of the vessel of the port authorities of Penang to be made in the ship's log. This fact, the collector of customs states, gives rise to rational doubt that the number of packages alleged to have been seized is as represented, the statement made by the captain as to the exact number not being supported by documentary evidence. It is true, the decision admits, that supporting evidence made by the British consul tended to show that the British authorities of Penang in a cable communication would seem to confirm the statement as to the number of packages alleged by the captain to have been seized, but makes the observation that the evidence submitted was not sufficient to warrant the vessel's release from all responsibility, and unless more evidence is obtainable in this respect, the fine must be imposed.

## FINANCE

**Japan Wants Loan to China.**—According to Japanese newspapers commenting on the Quadruple Banking Syndicate, under order from the Ministers of the Quadruple Allies having delivered to the Peking Government the surplus salt gabelle amounting to $5,000,000, China will have no other alternative but to have recourse to a foreign loan when she can find no way for increasing her revenue at home. The Japanese say that Japan now holds the key for extricating China from her financial embarrassments, but will have no concern with any political or economical loans before the North and the South have made up with each other in all sincerity and have completely restored peace to China. The Japanese Government will, however, be prepared to underwrite China's economical loans necessary for readjusting the market when the political situation recovers its equilibrium.

**Want U. S. in Loan Group.**—Japanese papers publish an article saying a suggestion was made to Japan in the early part of June that German bankers be excluded from the quintuple group of loan makers in China and that American bankers be allowed to replace them. The Asahi and other papers say the suggestion originated in America, while the Yomiuri says it came from England, France and Russia. A history of the formation of the loan group is summarized at some length, telling how America came to withdraw from the sextuple group.

It is unlikely, says an official, that the United States would make a suggestion of that kind of her own accord. The official does not confirm the story that such a proposition was ever made to Japan. However, it is generally believed here that the suggestion was made and that no reply has been made by Japan, although it is not likely that Japan would refuse to admit the United States in the group, even if some Japanese might think it impolitic to give America a part in the loan making in China. On the other hand, it is very unlikely, the official says, that America would come into the loan group in China. He says that as she once abandoned it, her change of policy now would be a confession of lack of foresight two years ago.

London dispatches as long ago as January 25, made similar suggestions as to the likelihood of United States loans to China as follows:

There is little reason for surprise that the efforts which the Chinese government has been apparently making to arrange a loan with the "quintuple powers" have not been successful. English, French, Russian and Japanese banks will hardly fraternize with a German bank even in neutral countries at present. That is one very cogent reason why business should be cried "off" just now. Another one is that the belligerent countries for the time being have about as much as they can do financially within the ambit of their respective alliances. So far a cry as China has not appealed to them in the circumstances.

Then again the state of China herself is not at the moment one which gives the fullest confidence to that shyest of shy birds, money. Revolutions and big constitutional changes of any sort, are expensive things in the money market. Nevertheless the occasion might be utilized by a daring, enterprising, honest American banker, or group of bankers, for giving China what she wants and at the same time of obtaining a useful financial footing in that country. To fill a gap is not to "jump a claim."

**Banks in Chosen.**—According to the latest official investigation there are in Chosen eighteen head offices of banks including the Bank of Chosen, six Agricultural and Industrial Banks, and eleven others. Besides, there are eighty-eight branches, twenty of them being branches of the Bank of Chosen, thirty-six of Agricultural and Industrial Banks, and forty-two of other banks. The nominal aggregate capital of these banks amounts to 19,890,000 yen, and the subscribed capital 14,784,890 yen. The reserve funds and money brought over from the preceding term amount to 1,733,464 yen.

**Sino-Japanese Bank at Mukden.**—With regard to the proposed establishment of the Sino-Japanese Bank at Mukden under joint Sino-Japanese management, the negotiations about which are now under way between the Japanese Chamber of Commerce at Mukden and Chinese Guild, the Managers of the Mukden branches of the Yokohama Specie Bank and the Mitsui Bussan Kaisha and the Chairman of the Japanese Residents' Council at Mukden submitted a draft plan to the Tokyo Government and, it is said, they now can tell what is to be expected.

According to the plan, the Bank is to have its head office at Mukden, is to be capitalized

at Y5,000,000 which sum is to be equally shared between Japanese and Chinese businessmen, and is to be authorized to issue silver notes to the end of unifying the paper currencies in general circulation.

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**Japan Approves two New Banks.**—The establishment of two banks in China, one for Manchuria and the other for China Proper, has been approved by the Economic Investigation Commission. The Government will introduce measures for these banks at the next session of the Imperial Diet. The measures introduced in the last session were not approved by the House of Peers, although they passed the House of Representatives. Considering the suggestions given by the Economic Investigation Commission, it is said the Government authorities will fix the capital for each of the two banks at 10,000,000 yen, although the capitals introduced in the last session were 10,000,000 yen and 20,000,000 yen respectively.

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**Japan's National Debts.**—According to the investigations of the Department of Finance, the aggregate amount of Japan's national debts at the end of June last stood at Y1,073,879,403 in domestic loans and Y1,438,128,870 in foreign loans.

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**Japanese Specie Holding.**—The specie holdings of the Government and the Nippon Ginko (Bank of Japan), according to the latest investigations, exceed Y600,000,000, of which sum Y170,000,000 is at home, Y130,000,000 in America, and Y300,000,000 in Europe. The payment of interest on part of the foreign bonds fell due at the end of June and some decrease is expected in the July report, but since the excess in exports promises to become larger, the specie holdings abroad may be further augmented.

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**Against Russo-Japanese Bank.**—Speaking from a purely economic standpoint, an authority in the Japanese Finance Office doubts if the proposal to establish a Russo-Japanese bank to give an impetus to the trade relations between the two countries is feasible. For exchange business between the two countries the Yokohama Specie Bank is quite enough, he says, while for the Japanese investments in North Manchuria and Siberia, the Japanese bankers, with the Bank of Korea and the Bank of Formosa as leaders, can form a syndicate. The present difficulties attending the trade relations between the two countries, he says, have all risen from the war and are merely temporary phenomena, and it is doubtful if any independent bank is necessary to meet these difficulties. The authority quoted, however, looks at the question as considered from neither a diplomatic nor political standpoint, and says that if the question is considered from such a line, especially in view of the recent advance in the friendship between the two nations, it will be quite different.

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**Japan's Postal Savings.**—According to the report of the Department of Communications, the amount of the postal savings at the end of June was 254,823,933 yen, and the number of depositors 14,204,531, showing an increase of 40,910,994 yen in amount and 1,207,701 in the number of depositors compared with the same date last year. Compared with the May report, there was an increase of 8,041,403 yen in the amount and of 110,921 in the number of depositors in a single month. The cause of the increase was the prosperity brought about by the war trade. The new depositors are mostly wage earners in the commercial centers. The postal savings in rural districts are rather low and make no progress. However, an increase of postal savings of 8,000,000 yen in a single month is a rare phenomenon. It is the biggest increase since October, 1910.

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**Japanese Investments Doubled.**—New investments for the promotion and extension of banking and business enterprise for the first six months of the year amounted to 262,017,000 yen, of which 85,925,000 was for new promotion, and 176,092,000 yen was for extension of existing works. Compared with the corresponding period last year, there was an increase of 129,141,500 yen in total investments, 46,072,090 yen for promotion, and 82,160,000 yen for extension.

The increase in the totals is so large that the amount this year almost doubles the amount in the same period last year. A feature in the increase of investments in the period now under review is that the amount was larger in spinning, mining and shipping businesses than in any other period, while comparatively little has been done in banking, fishery, and commercial enterprises. Spinning and industries which proved successful on account of the war called for heavy investment, while banking was less remunerative, owing to the comparatively easy condition of the money market.

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**Japanese Money Tighter.**—The tightening of the money market in June was not only a temporary phenomenon due to the month-end settlement, but was also a feature of the half year just passed. The Bank of Japan's report shows the issue of convertible notes was increased to meet the requirement caused by the increase in the bulk of trade. The balance of the central bank on June 29 showed that loans and advances increased 7,000,000 yen over the previous day. There was also a considerable withdrawal of deposits. The issue of notes on the same day increased to 421,000,000 yen, or an increase of 16,000,000 yen over the previous day. The amount of notes issued in excess of the legal limit (*sic.*) increased from 15,000,000 yen to 31,000,000 yen.

The following figures for June 29, this year, compared with the same day in 1915 roughly illustrate the degree of growing prosperity:

| | June 29, '16 Yen | June 29, '15 Yen |
|---|---|---|
| Notes issued ... ... | 421,861,000 | 322,490,000 |
| Specie reserve... ... | 270,581,000 | 217,670,000 |
| Issue power reserved | — | 5,170,000 |
| Excess issue ... | 31,270,009 | — |
| Loans and advances | 39,070,000 | 13,190,000 |

Thus, it will be seen that the increasing requirement for money was met by the inflation of convertible notes.—*Japan Advertiser.*

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**Japan's Clearings Increase.**—The reports of the eleven clearing houses for the first six months of the year show that over 8,390,000,000 yen were cleared during the period, the increase being 3,275,000,000 yen over the corresponding period last year. The rate of increase was largest in the case of Kobe, 72.8 per cent. The average rate of increase was 64 per cent. Never in the annals of Japanese bank clearing has such a large increase been recorded in a single year. It is also to be noted that the increase was common to all of the centers, there being no single case where a decrease was recorded. The following table shows the clearings in the eleven centers of the country:

| | Jan.-June 1916 1,000 yen | Increase over Jan.-June 1915 1,000 yen | Percentage of increase |
|---|---|---|---|
| Tokyo ............ | 3,773,372 | 1,513,038 | 66.9 |
| Osaka ............ | 2,474,186 | 929,603 | 60.2 |
| Kobe.............. | 822,269 | 346,526 | 72.8 |
| Kyoto ............ | 218,713 | 78,049 | 55.4 |
| Yokohama ...... | 730,019 | 295,034 | 68.0 |
| Nagoya ......... | 213,633 | 80,749 | 60.8 |
| Hiroshima ...... | 18,943 | 3,308 | 21.2 |
| Kwanmon ...... | 71,192 | 14,348 | 25.2 |
| Kanazawa ...... | 14,291 | 1,558 | 12.2 |
| Hakudate ...... | 23,806 | 4,593 | 23.9 |
| Otaru ............ | 29,957 | 7,968 | 56.4 |
| Total ......... | 8,390,387 | 3,275,348 | |

The total number of bills cleared was 6,166,000 in the period under review, showing an increase of 923,000 compared with the corresponding period last year.

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**Japanese Bank Looters' Trial.**—How the funds of the Kitahama Bank were manipulated by officials of the bank was partly explained at the trial of Mr. Iwashita Seishu, former president of the bank, and others connected with the scandal, in Osaka.

According to the Japan Chronicle Murota Raisho, who was in charge of the safes of the bank, said that his duty was nothing more than that of keeping the keys of the safes and that Maejima, sub-manager of the bank, could draw out any amount of money by simply signing a slip. Kumagae Tsunematsu, cashier of the bank, admitted that he made use of the funds to the extent of 130,000 yen or 140,000 yen, but as he refunded part of the amount the actual loss to the bank would be about 90,000 yen.

Nakanishi Manzo, formerly manager of the Nagoya branch of the Kitahama Bank, was next examined.

"The extent to which you are involved in this case is put at 20,601,270 yen," said the judge, "and the actual amount embezzled by you at 2,382,000 yen, according to the records of the preliminary examinations."

"I have no clear recollection of amounts," Manzo replied, "but what is mentioned by the Court must be correct."

In reply to another question, accused stated that he advanced 152,000 yen to Shimamoto Shinjiro, who was an old friend of his, to help him in a gold mining enterprise in Tsukushi-gun, Fukuoka prefecture. Accused had not the slightest interest in the enterprise himself, and the loans were merely made to assist his friend in his enterprise.

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**New Philippine Companies.**—For developing the shell industry in the Philippines, articles of incorporation were filed by the Manila Manufacturing Company, with capital stock amounting to P70,000, of which P14,000 has been subscribed and P3,500 paid in. The incorporators are H. F. Mires, A. W. Beam, J. Ortega, J. Perez Cardenas and Attorney Charles C. Cohn, who has been designated treasurer. The stock is divided into 400 common and 300 preferred. Preferred stock will get dividends amounting to 10 per cent a year, which are cumulative.

The Philippine Industrial Company, with capital stock of P60,000 was incorporated by Joaquin Verdaguer, C. W. O'Brien, Francisco Campanilla, Recaredo Maria Calvo, and John Canson. The shares are sold at P10 each, and already P55,000 of the capital stock has been subscribed and paid up. This company will devote itself to grass cultivation, and to selling and purchasing cattle and horse feed. Sr. Verdaguer is the treasurer.

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**P. I. Bank Takes Over Funds.**—On July 1, the funds which the insular government has on deposit with other banks in this city, were formally transferred to the books of the new Philippine National Bank; in accordance with instructions from the chief executive, but no actual cash was transferred to the end that the transaction will in no way restrict commercial credit.

Although no official information was given out as to the exact manner in which the transfer was effected without the withdrawal of funds from the banks now holding them on deposit from the insular government, it is understood that the money, for the present at least, will stand as a deposit in the National Bank, but re-deposited by that institution in the other banks.

**Banking in Bangkok.**—According to a report by the American minister to Siam, Bangkok offers a splendid opening for a reliable American banking institution. It is a city of approximately 600,000 people. Fully 50 per cent of the population is Chinese, and the export of rice (the principal product of Siam) and the larger portion of the ordinary mercantile business of the country is in the hands of Chinese merchants and commission men. There is no bank in Siam controlled by Chinese and no banking institution in which they are financially interested. The Chinese in Bangkok are particularly friendly to America, and an American bank with strong financial backing would undoubtedly draw the larger portion of the Chinese business. Only one of the four banks in Bangkok is controlled by Siamese capital, and it has never proved a popular institution with the Siamese. An American bank would therefore be quite likely to draw considerable business from the native population. The other three banks in Bangkok are controlled by British and French capital.

**Singapore's Financial Outlook.**—Mr. F. J. Hallifax, President of the Singapore Municipal Commissioners, in the course of his report for 1915, says:

The total revenue for the year amounted to \$3,648,067.13 which is \$3,202.78 less than in 1914. Compared with the revenue that should have been received according to the estimates for the year, there is a shortage of \$33,032.87. The following table (with the cents deleted) gives a comparative statement of the revenue for 1913, 1914, and 1915.

| Revenue. | Actual. 1913. | 1914. | 1915. |
|---|---|---|---|
| Rates ... ... | \$1,254,817 | \$1,544,963 | \$1,555,353 |
| Taxes ... ... | 192,399 | 213,070 | 197,380 |
| Licences ... | 30,386 | 31,828 | 19,042 |
| Fees ... ... | 109,568 | 105,254 | 112,093 |
| Rents ... ... | 280,208 | 274,412 | 271,386 |
| Water ... ... | 656,490 | 719,850 | 697,664 |
| Gas ... ... | 328,035 | 345,120 | 360,075 |
| Electricity ... | 188,735 | 196,202 | 211,459 |
| Miscellaneous.. | 97,196 | 148,507 | 127,308 |
| Reimbursements | 85,147 | 72,059 | 80,300 |
| Total ... | \$3,222,983 | 3,651,269 | 3,648,067 |

| Revenue. | Estimates, 1916. |
|---|---|
| Rates ... | \$1,530,000 |
| Taxes ... | 232,000 |
| Licences | 29,000 |
| Fees ... | 110,000 |
| Rents ... | 284,000 |
| Water ... | 677,500 |
| Gas ... | 420,000 |
| Electricity | 220,000 |
| Miscellaneous... | 89,050 |
| Reimbursements | 82,650 |
| Total ... | \$3,681,100 |

The sources of revenue were the same as in 1914. In that year 1 per cent. general rate produced \$91,391, which has increased to \$92,415 in 1915. Rates, taxes and rents (the true revenue of the Municipality) produced the equivalent of a 20 per cent. rate. This, by itself, would have been insufficient to meet the total expenditure for the year by about the equivalent of a 2.⅓ per cent. rate, the difference being made good from profits on gas, electricity, abattoirs, etc. In other words, if the whole cost of administration had to be met from the proceeds of a single general rate, without any help from Municipal ventures producing a profit, it would have been necessary to levy a total rate of 22.⅓ per cent. on the town.

The total payments for the year amounted to \$3,772,692,18, on an estimate, including supplemental budgets of \$4,219,550. As compared with 1914, payments during the year were \$92,748.39 more. Accounts on the revenue and expenditure basis show that the surplus or revenue balance on December 31, 1914, was \$511,342.45, which was reduced on December 31, 1915, to \$416,654.52, showing that for the year 1915, the revenue for the year had to be aided by a contribution of \$94,687.93 from accumulated balances in order to make ends meet. This is obviously a process to which there are strict limitations. In default of increased revenue, expenditure will have to be reduced. But it is to be feared that this can only be accomplished by leaving undone many things which the Commissioners ought legitimately to be expected to undertake. The existing sources of revenue other than charges on water, gas, etc., are yielding to their full capacity, and in the absence of proved extravagance fresh sources will have to be found unless public works are to be hampered by want of funds.

## MINES AND METALS

**Japan's Metal Industry and the War.**—An interesting survey of the mineral industry during the past year as influenced by the war is given by Mr. Isobe, Director of the Mining Bureau in the Japanese Department of Agriculture and Commerce. He says that the total value of the mineral output during the year amounted to 175,950,000 yen, exclusive of the production at the Government Iron Works, which is a gain of 20,920,000 yen over the preceding year. The total value of metals produced amounted to 35,730,000 yen, or 57 per cent. above the previous year's figure. Non-metallic minerals on the other hand fell off by 15,280,000 yen mainly because coal was very inactive.

Gold and silver showed an increase by 16 per cent. and 5 per cent. respectively because of more active working at some mines. Copper was hard hit at first, but in March last year trade was resumed owing to the demand by munition makers. Though the increase in production amounted to 7 per cent., the increase in the total value is more than 37 per cent.

Antimony showed an extraordinary boom in prices owing to the ever-increasing demand from munition makers. The volume of the output increased by 200 per cent., while the value gained 8,750 per cent. Zinc went through the same vissicitudes as antimony, and at the close of the year the output showed an increase of 206 per cent. and the value, 804 per cent. The completion of the plants of the Osaka Zinc Industry Company and the Miike Zinc Refining Works during the year was largely responsible for this increase in the output. Coal was hard hit by the war and restriction of production was made by Kyushu mines. The output decreased by 8 per cent. and the value 19 per cent. Petroleum witnessed an increase of 11 per cent. in the output owing to a renewed gush at Kurokawa, Akita, but the market presented no encouraging signs. Toward the end of the year some signs of activity were perceived, but the gain in value was only 5 per cent. Sulphur decreased by 3 per cent. in the output and 5 per cent. in value, though toward the close of the year the market displayed a sudden activity, because all through the early period of the year production was heavily cut down at Hokkaido owing to the dullness of the market.

**Brings Gold for China.**—The Nippon Maru, carrying gold bullion worth \$1,000,000, for China, sailed from San Francisco on June 28 for Japan.

**Nippon Steel Works Dividend.**—It is reported that the Nippon Seikojo or Nippon Steel Works, of Muroran will increase the rate of dividends to 5 per cent per annum for the past half year's working.

**Profit of Japan's Steel Works.**—The net profit of the Government Steel Works, Edamitsu, for the preceding fiscal year amounted to Y13,500,000, showing an increase of more than Y10,000,000 over the estimated amount of Y3,000,000. The realization of such a profit was made possible by the War.

**New Japanese Iron Works.**—An iron works is to be established by the business men interested in the Osaka Iron Works, in conjunction with a group of Osaka iron merchants, by the fusion of two separate schemes. All the shares representing the capital of the new company, to the extent of 1,000,000 yen, have been taken up by the promoters, and a scheme has been drawn up providing for the formal organization of the concern. At the first general meeting of the proprietors it was decided to style the new company the Kwansai Iron Industry Company, and to begin actual operations with a capital of 1,000,000 yen, provisionally at the Amagasaki works of the Osaka Iron Works which the new company is to take over. The new company is to be managed by Mr. Yunosuke Imamura, the present chief of the Amagasaki works of the Osaka Iron Works.

**S. M. R. Co., & Anshanchan Mine.**—According to the *Yorozu Choho* of Tokyo, on the question of working the iron mine about Anshanchan south of Liaoyang, the South Manchuria Railway Co. has reached an understanding with the Penchihu Colliery & Mining Co., which is operating an extension of the same mineral vein, for desisting from needless competition. The Railway Company is at the same time making preparations for commencing mining operations. The working capital is put at Y20,000,000. The Management is to assume the form of a Sino-Japanese sharestock company. It is possible that a nominal representative will be appointed to assume charge of the new company outside the railway company. It is likely that, if need be, the Chinese portion of the capital will be furnished by the S. M. R. Co. which has surplus funds amounting to Y4,000,000, and the remaining sum will be raised by either a call of share capital or the issue of an additional share capital. Under the head of Railways on page 75 of this issue is reported the S. M. R. Co.'s call for Yen 4,000,000 new capital.

According to Baron Y. Nakamura, president of the Railway, "preparations will be started as early as possible for establishing the steel works, to treat the Anshanchan ore, which need not be attached necessarily to the Sino-Japanese company, and may be put under the management of the S. M. R. Co. Nothing has yet been fixed about the site of the steel works. The matter is now under investigation. Facilities for water supply and for the transportation of the ore will be among the chief considerations in selecting the site.

"With the abnormal rise of iron since the outbreak of the War, shortage of steel machinery has been acutely felt, and some little time is feared to elapse before the necessary materials are obtained for the construction of the works. The works will have a comparatively small beginning. It is considered as hardly wise to start with an extensive plan. Some critics at home have observed that, when the Penchihu Colliery and Mining Co. is being steadily enlarged, it would seem out of place for the S. M. R. Co. to begin steel manufacturing on a minor scale. Minor or small as we may call it, the plan in our mind will be found not unworthy of the steel works in project. Steel manufacturing is a national enterprise having intricate bearings on all sides. It would be more practical to have a modest start so as to subject the outputs to a fair test and, when satisfied of the intrinsic merits of the undertaking, to extend the working plan. The Customs relations and the condition of demand ought to be duly weighed."

Statements in the Chinese press are in effect that Mr. Yu Chung-han (Adviser to Acting Military Commander Chang Tso-lin), in the

capacity of the representative of the miners of Fengtien Province, has been granted the license to work experimentally the eight iron mines at Anshanchan, Liaoyang, Haicheng, Siuyen, etc. for a period of one year under Sino-Japanese management by the Department of Agriculture and Commerce, Peking. The Japanese side is represented by the S. M. R. Co.

**Taochung (Anhwei) Iron Mine.**—Regarding the working of the Taochung (Anhwei) iron mine, the representatives of the Chino-Japanese Industrial Development Company in conjunction with a number of business men interested in the proposed enterprise have been drawing up the plan of business to be followed. It is now reported that they have at last completed a draft plan. According to this, the mine is to be worked by an independent company organized not only by business men interested in the Chino-Japanese Industrial Development Company but by many others who may be interested in the new enterprise. The new company thus floated will have a capital of 50,000,000 yen, and will erect a smelting works in Kyushu.

It is also planned that the mine be worked to produce 340,000 tons a year, and that the ores thus obtained be smelted at two smelting furnaces with a capacity of producing 250 tons of pig a day. Thus when the works are in full blast something like 150,000 tons of pig will be produced annually. It is, however, still unsettled whether Government protection will be asked for or to what extent protection is desirable. Among the Japanese business men interested in the project are: Baron Shibusawa, Mr. Kurachi, Mr. Buei Nakano, Baron Go, Mr. Toyoji Wada, Baron Nakajima, and others.

The promoters have asked the Chu-Nichi Jitsugyo (Japan-China Enterprising Co.) to investigate the undertaking. This company recently completed the necessary investigations with the aid of the Imperial Iron Foundry at Yawata and other experts, and are reported to have already submitted an estimate to the promoters. It is now said that mining will be carried out by the Chu-Nichi Jitsugyo, who will sell the ore to the Tochu Seitetsu Kaisha (Taochung Iron Manufacturing Co.). The Tochu Seitetsu Kaisha expects to manufacture 170,000 tons of pig iron with ores from the above mines in Korea and other places.

Steel products amounting to 150,000 tons will be produced annually from ore obtained from the mine. To carry out the above plan, a capital of 15,000,000 yen at least is required. It has not been decided how this will be raised. It is further reported that the Chu Nichi Jitsugyo will not only supply the ore but also might undertake to subscribe for a part of its capital.

With regard to mining, due preparations have already been started by the Chu Nichi Jitsugyo and it is expected that some ore will be manufactured during this year, but until the establishment of the proposed foundry, the products will be reserved for the use of the Imperial Iron Foundry in Yawata, etc.

**Future Outlook for Silver.**—An eastern statistician, quoted in the Mining and Engineering World, has figured it out that the fundamental reason why silver is advancing is because Europe is to-day on a paper basis: Germany has commanded the gold from the people's pockets to the banks' vaults; Russia has done practically the same; France has requested it and England has relied upon patriotism to accomplish its purpose. When the war broke out, this same statistician continues, the great government banks of Europe had roughly $2,400,000,000 gold in their vaults. Since then despite all efforts the stock has only been increased another billion, excluding some $500,000,000 sent to the United States. The significant monetary fact, however, is that the original $2,400,000,000 supported only $4,500,000,000 of paper whereas the present $3,400,000,000 has been called upon to maintain $9,800,000,000. In other words, the gold proportion has dropped from 53 to 34%.

The irreducible limit for the European metallic base would seem to have been reached. At the same time it is impossible to increase the supply of gold. The governments of Europe are, therefore, turning to silver more and more as they inevitably must since gold will be unable to meet the demands of world business and since paper currency rapidly loses its purchasing power. A strong metallic base is always necessary. But the production of silver is falling off in the United States, Mexico, and in fact throughout the world. The output of the United States last year was roughly only 67,500,000 ozs. as compared with 72,500,000 ozs. the year before. Mexico accounts for only 18,000,000 as against 26,000,000 in 1914. In fact the world production declined last year at least 10% to some 195,000,000 ozs. as compared with an annual production of 250,000,000 back in 1911 and 1912.

Not only will there be an unprecedented demand from Europe, already under way, notably in France, but the Far East which has always been a big consumer of the white metal will be a bigger factor than ever before. China's standardization of coinage it is estimated will take 150,000,000 ozs. of silver or almost twice as much as United States and Mexico can turn out in a year. Silver is not war metal in the sense of spelter or copper, perhaps. The demand for it after the war is over is likely to be greater even than at present, for with the adjustment to normal conditions the paper currency will depreciate faster. Weighing the factors of declining production and unprecedented demand, it would seem that silver is likely to sell at better than 80 cts. for a long time to come.

**Chosen Mining Suit.**—The Kejo (Seoul) Nippon reports that Mr. Choi Yungtai, a Korean mining man living in Nakwondong, Seoul, has brought a suit in the Seoul Local Court, against the president of Messrs. Collbran, Bostwick Development Company, demanding the delivery of iron worked by the latter and valued at 283,662 yen.

The plaintiff alleges that in 1893 he discovered an iron mine in Kapsan District, and worked it until 1906. On July 12, that year, a new Mining Ordinance was promulgated with the result that he lost the right to work the mine. In December 1907, he filed an application to continue but was forestalled by the defendant company which obtained official permission to work the mine.

The plaintiff then concluded, he alleges, an agreement with the company not to compete further, on the condition that the company bought all the machines and other properties he had set up for use in working the mine. The company has now acquired the right to work it by virtue of the new Mining Law promulgated in May last, and has refused plaintiff the payment of compensation. The plaintiff accordingly has demanded of the company the delivery of the iron so far obtained, 5,562 tons in amount, or 283,662 yen, which is the value of the ore estimated at the rate of 51 yen per ton. The Company has, however, refused to agree to this demand. Hence the suit.

**Malayan Collieries.**—In his report for 1915, the Chief Secretary, F.M.S., says that the Malayan Collieries commenced to turn out coal during the year. The collieries have been connected with the railway main line at Kuang junction. The increase in the price of imported coal has created a great demand for the local coal, and it is estimated that 1,000 tons a day could be disposed of. There is a difficulty in obtaining sufficient skilled labour locally and which will probably have to be imported.

**Perak's Mining Output.**—The total export of tin and tin ore from Perak in 1915 (reduced to a metalic basis) amounted to 466,634 pikuls (picul=133⅓ pounds) with a value of $36,476,602, (Straits Dollar=57 cents U. S. Cy.) as compared with 479,754 pikuls and $35,473,650 in 1914, a decrease of 13,120 pikuls and an increase in value of $1,002,953. This is a decrease of 2.7 per cent. in the output, but an increase of 2.8 per cent. in value. Of this quantity, 23,746 pikuls were exported as block tin, and 442,888 pikuls as tin ore. The highest price obtained for the metal was $86.50 per pikul on November 16th, and the lowest was $69.50 on January 2nd, the average price being $78.17 per pikul; the corresponding figures in 1914 were $95.25, $57 and the average price $73.44. The total labour force employed in the mines of the State in December was 94,865 as against 96,740 in the same month of the preceding year; a census taken in June showed a total of 92,988 persons.

**Tin Export from Penang.**—Exports of tin for the six months ending June 30, are as follows:

| To | 1916 Short tons | 1915 Short tons | 1914 Short tons |
|---|---|---|---|
| Great Britain | 10,027.6 | 8,985.4 | 13,450 |
| Europe... ... | 1,098.3 | 1,390 | 5,253 |
| United States | 5,617.6 | 4,027 | 2,668.4 |
| Total | 16,743.5 | 14,402.4 | 21,371.4 |

**F.M.S. Tin Exports.**—For the five months ending May 31, the exports of tin and tin ore from the Federated Malay States were:

| | Tin Short tons | Tin Ore Short tons |
|---|---|---|
| 1916 | 2,190.7 | 18,301 |
| 1915 | 1,912 | 19,670 |
| 1914 | 1,748.7 | 21,322.7 |
| Total | 5,851.4 | 59,293.7 |

Seventy per cent of the gross weight of the ore is taken to represent net weight of tin.

**Seoul Mining Company.**—The Seoul Mining Co. operating the Suan and Tulmi Chung Mines reports the following results for May:

| | |
|---|---|
| Tons Crushed ... ... ... ... | 16,202 tons. |
| Value Bullion Recovered ... | Yen 98,861.13 |
| Value Concentrates Recovered | 191,322.52 |
| Total Receipts ... ... | Yen 290,183.65 |
| Operating Expenses (approx.) | 110,000.00 |
| Operating Earnings (approx.) | Yen 180,183.65 |

Results for June, were:

| | |
|---|---|
| Tons Crushed ... ... ... ... | 14,555 tons. |
| Value Bullion Recovered ... | Yen 50,491.00 |
| Value Concentrates Recovered | 185,126.00 |
| Total Receipts (approx.) ... | Yen 235,617.00 |
| Operating Expenses (approx.) | 115,000.00 |
| Operating Earnings (approx.) | Yen 120,617.00 |

One half of the capital of the Suan Mill was used during June for testing and experimenting on the metallurgy of the low grade ore in the Soctarie Deposit. The results were encouraging. This testing will be continued for several months.

Dividend No. 13 of 25% on the issued Capital Stock was distributed in July.

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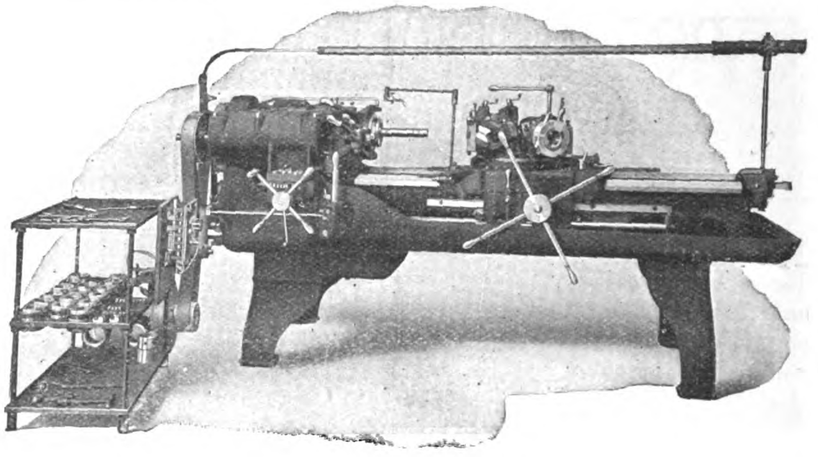

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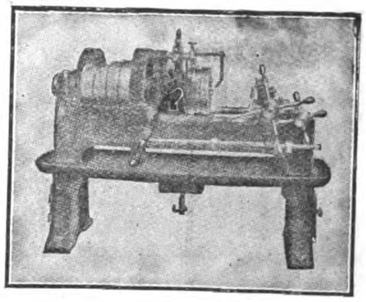
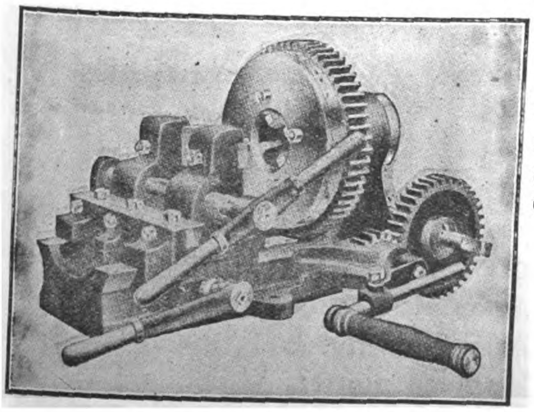
# Modern Screwing Machines



The illustration opposite shows our 2 in. size Single Head Patent Automatic Screwing Machine, which is one of a complete line of Single and Multiple Head Bolt Screwing Machines embodying the very latest labour-saving features and devices. It has Hand and Automatic Releasing Motion to the Die Head, Automatic Closing Device, Die Adjustment whilst in motion, etc. We claim that the Patent Steel Die Head these machines are fitted with is the most solid, simplest and best Releasing Die Head on the market. The Dies are operated mechanically. Springs with their attendant troubles, or other delicate mechanisms, do not enter into the construction in any way.



The illustration below shows our improved Universal Screwing Machine, which will screw Pipes, Bends and Short pieces up to 2 in. diameter, and Bolts when required up to 1½ in. diameter. This type of machine is also made for working by Power as well as by Hand, and in several larger sizes for dealing with Pipes up to 8 in. diameter. Of the 2 in. size illustrated we have during the last few years supplied over 2,500 machines, amongst which are many repeat orders.

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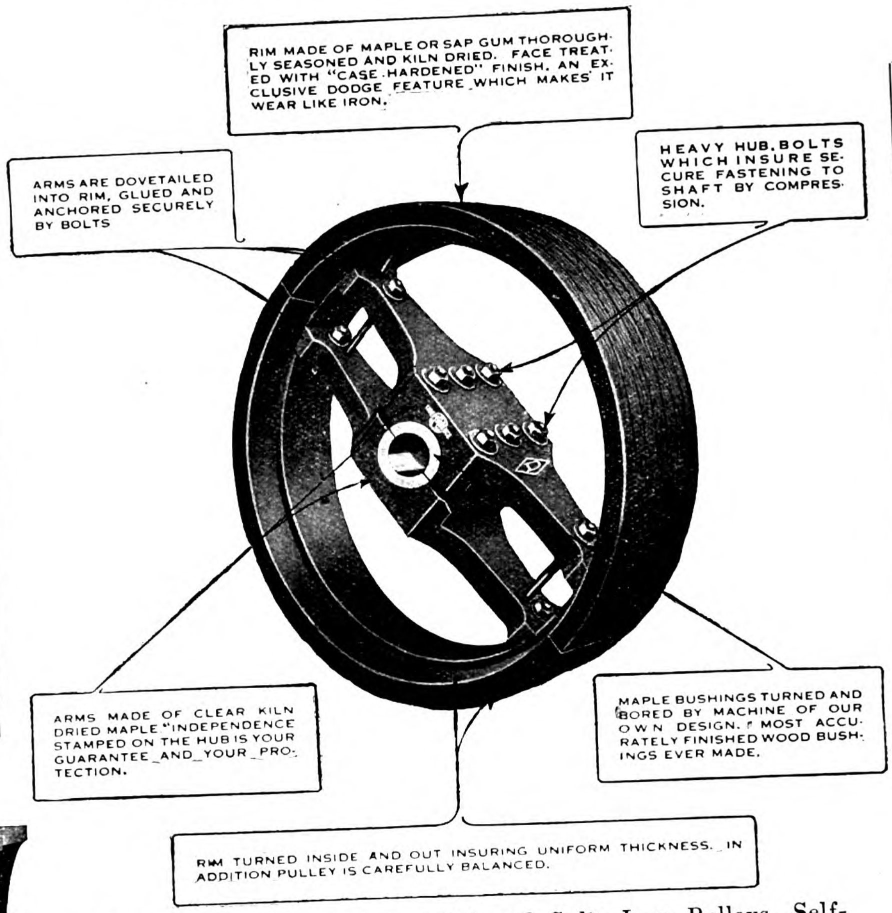


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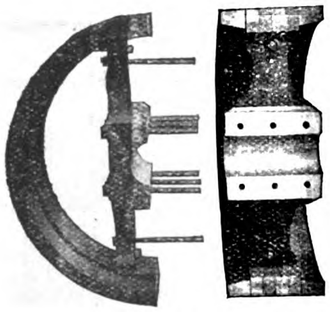

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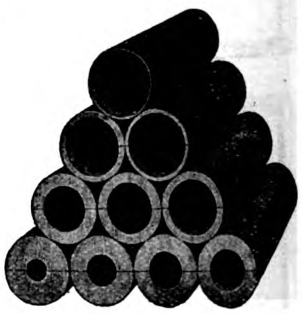

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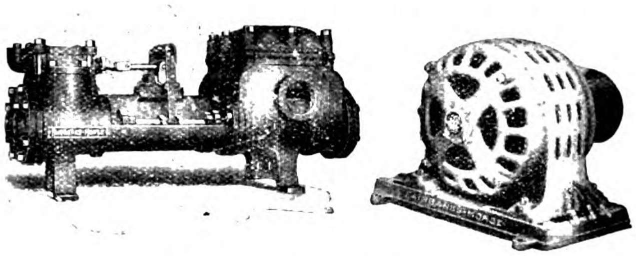

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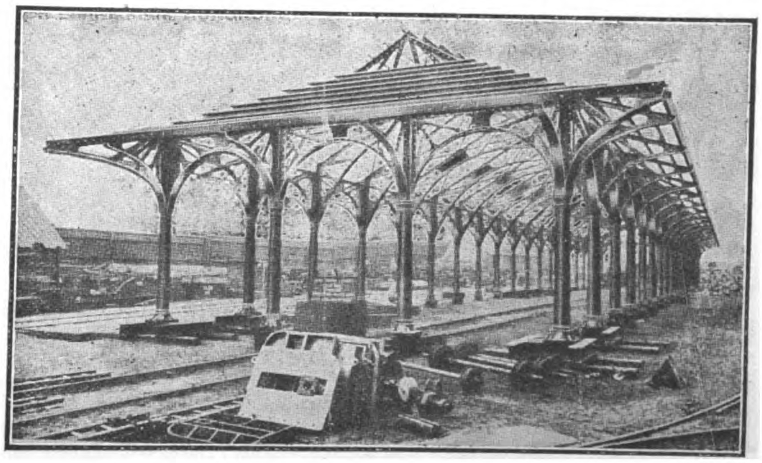

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| Ferro Machine & Foundry Co., Cleveland, Ohio. | Marine & Stationary Engines. |
| Gardner, Governor Co., Quincy, Ill. | Steam Pumps, Governors & Air Compressors. |
| Goulds Manufacturing Co., Seneca Falls, N. Y. | Power & Hand Pumps. |
| Kelly, Springfield Road Roller, Springfield, O. | Road Rollers. |
| Keuffel & Esser, Hoboken, N. J. | Drawing Materials, Surveying Instruments & Measuring Tapes. |
| Lockwood, Greene & Co., Boston, Mass. | Mill Engineers & Designers. |
| Pelton Water Wheel Co., San Francisco, Cal. | Water Wheels, Turbines & Governors. |
| Saco-Lowell Shops, Boston, Mass. | Textile Machinery. |
| A. & P. Steven, Glasgow. | Lifts. |
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| Standard Mill Supply Co., Providence, R. I. | Mill Supplies |

# Firestone

## Non-Skid Tyres

**For the hard road—for the hot pace—for the long grind—for true economy and service**

THE success of Firestone Tyres has proved to the motorist that they mean comfort, safety and the ***"most miles per shilling."*** Firestone Tyres are preferred because they are of highest quality—of the greatest ***value,*** even though there **are** "cheaper" tyres.

The rubber in them is supremely ***good.*** It has the quality of greatest heat-resistance, of greatest wear endurance. Every Firestone Tyre contains an extra quantity of this extremely good rubber.

The Non-skid lettering is an imprint of **safety.** On every highway of the world it challenges the need of other anti-skid safeguards. It holds the standard for endurance and economy. The letters prevent spin or skid in any direction, they radiate the heat of road friction, insure perfect traction with fuel economy, car-protection and comfort beyond contradiction.

Firestone Tyres are made by specialists in the ***largest exclusive tyre factory in the world.*** This year Firestone output has increased seventy-eight per-cent! Firestone tyres are of greatest strength, sturdiness and safety—the highest grade of tyres—

**for the Price of Only Ordinary Tyres**

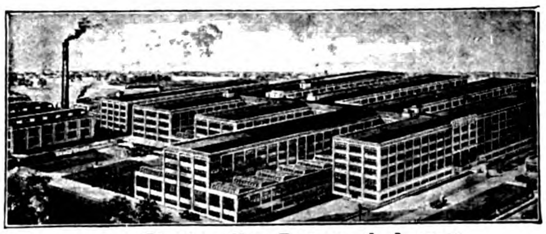
Leading dealers everywhere endorse Firestone quality and motorists praise Firestone service.

**Firestone Tire & Rubber Co., Factory: Akron, Ohio, U.S.A.**

*Manufacturers of Pneumatic and Solid Tyres; Motor Lorry Tyres; Fire Engine Tyres; Rims; Tyre Accessories; etc.*

*Philippine Islands Agents:* **The American Hardware & Plumbing Co., Manila**
Responsible dealers are invited to become our agents in the Treaty Ports of China China, Korea, Manchuria. Write for particulars.

**We are prepared to supply all sizes of pneumatic tyres.**



*Firestone Tyre Factory—the Largest Exclusive Tyre Factory in the World*

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TIENTSIN
NEW YORK

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LONDON OFFICE
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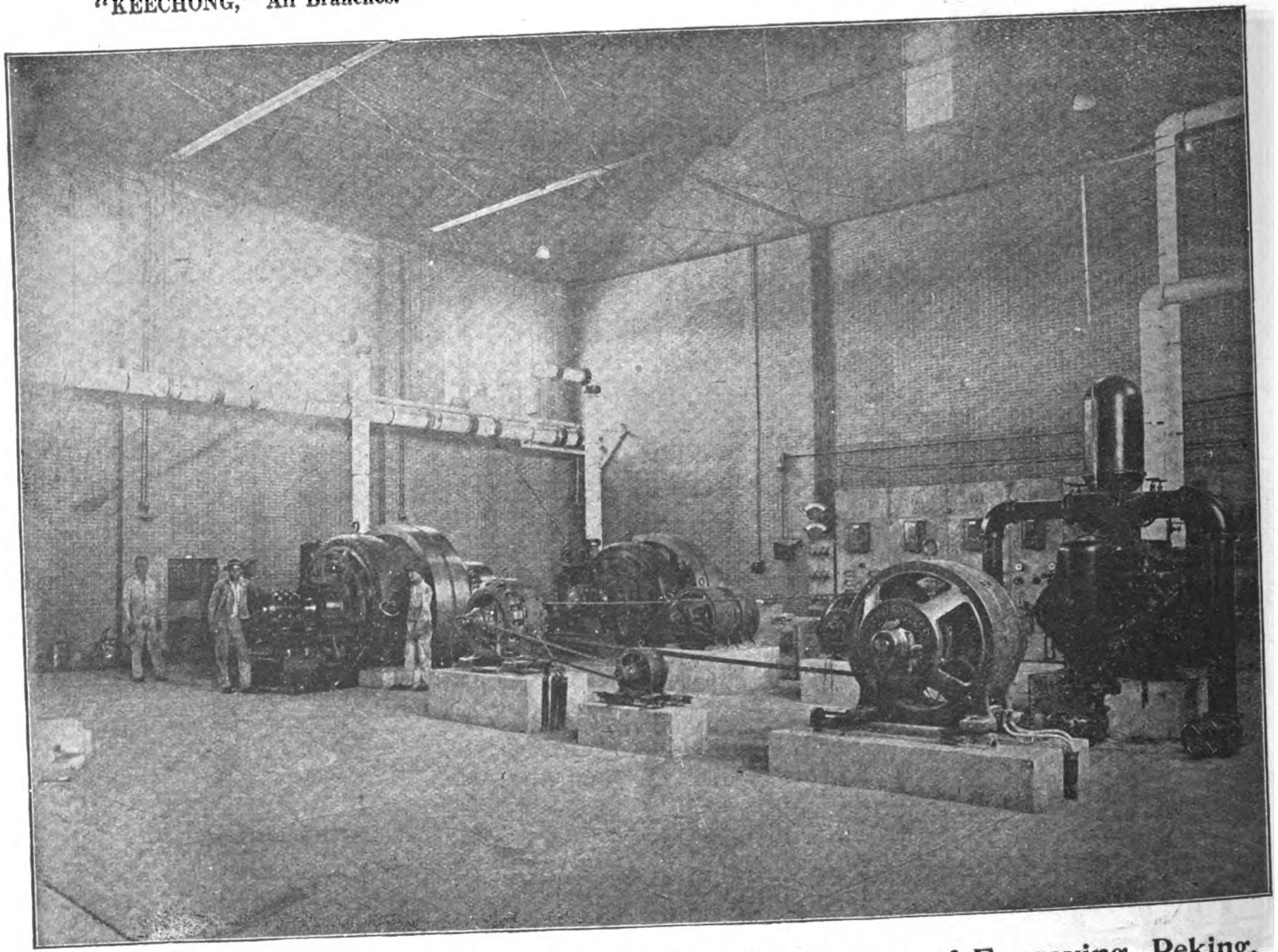

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"Genasco" Roofing"
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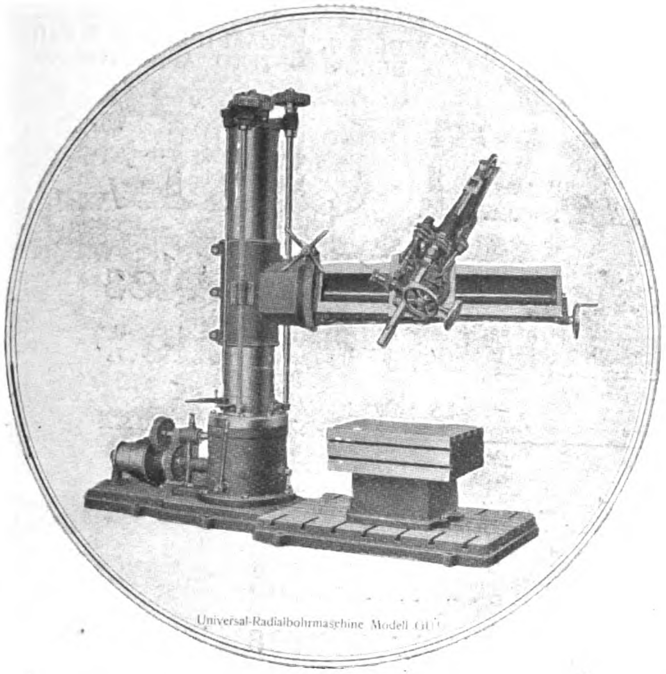

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**Trimo Tools**
**Official Award Ribbon**

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**TRIMONT MANUFACTURING Co.**

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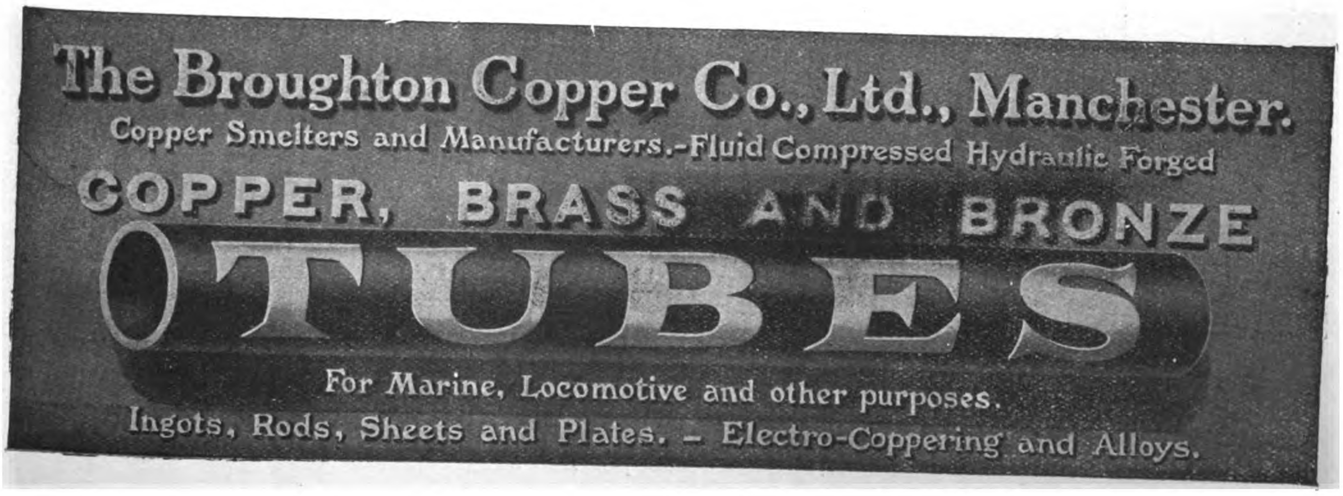

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STOCKS ALWAYS IN HAND SUCH AS STEAM ENGINES, GAS ENGINES, VERTICAL BOILERS, STEAM PUMPS, HAND PUMPS, LATHES, GENERAL MACHINE TOOLS, TEA CLEANING MACHINERY AND BELL'S UNITED ASBESTOS OF EVERY DESCRIPTION.

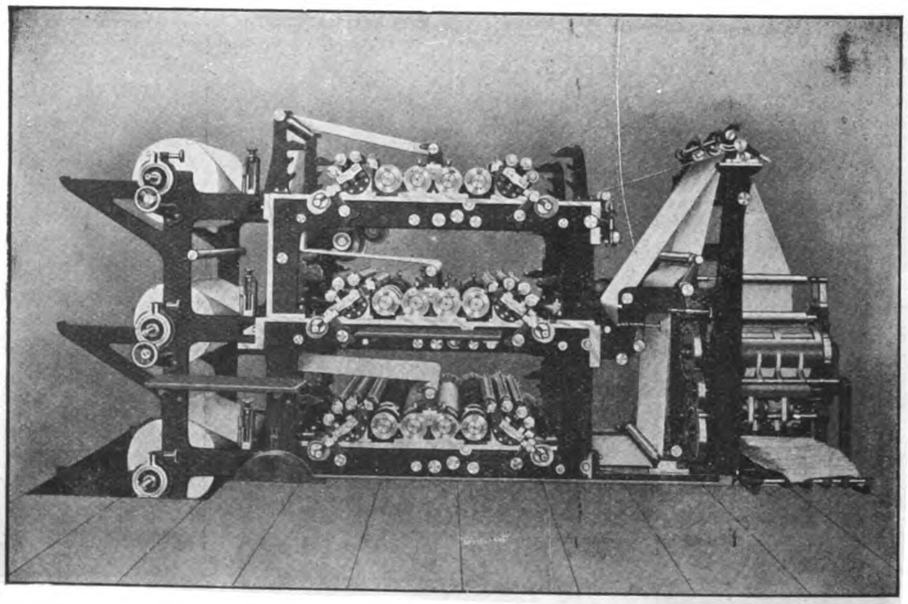
# A NEW FEATURE

in Printing Press construction which doubles the output from any given number of Plates.

The invention which characterises the

## Duplex Tubular-Plate Press

is the use of cylindrical or tubular plates instead of the semi-cylindrical plates used on all other stereotype presses.



The Press here illustrated will print any even number of pages up to and including twelve from the same number of plates at the rate of 25,000 per hour. The addition of an extra folder will produce six-page papers at the rate of 50,000 per hour.

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# The Shanghai Dock and Engineering Co., Ltd.

Cable Address

"Farnham"

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A. B. C. 4th and 5th Editions

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and

Engineering.

Head Office:

26 Broadway,

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Telephone

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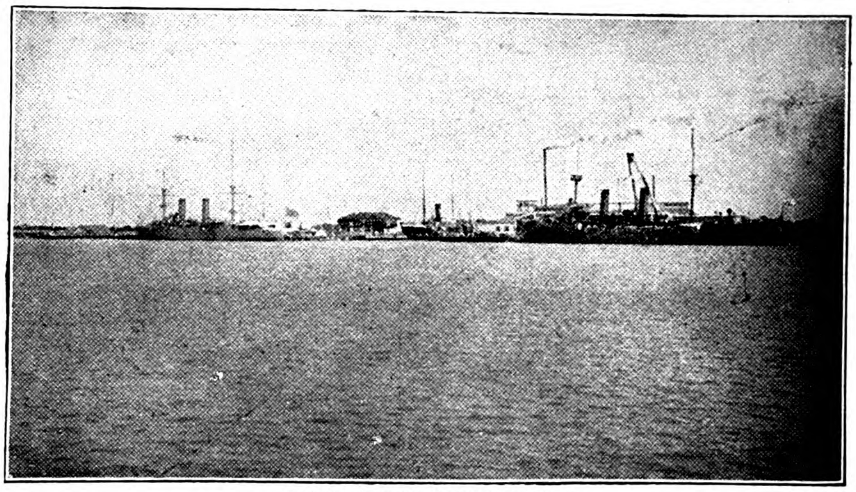
BOYD & CO., LTD.)



VIEW OF INTERNATIONAL DOCK
showing "M. S. Dollar" in Dock and the Chinese Cruisers "Hai Chi" and "Hai Yung" alongside Dock Co's. Wharf.

## Boilermakers, Dock Proprietors, Shipbuilders, Engineers and Electricians

**FIFTEEN REVENUE CRUISERS BUILT FOR THE QUARTERMASTER'S DEPARTMENT U. S. ARMY—MANILA, P. I.**

**The Model was exhibited at St. Louis Exposition and awarded the Gold Medal in 1904**

**The Sea-going Salvage-vessel "General Weeks" 148 feet long Built for the same Department, in 1910**

**Low Pressure Hot Water and Steam Heating Installations**

The Docks are five in number, ranging in length from 355 feet to 532 feet on the Blocks, and breadth of entrance from 53 feet to 77 feet, with a depth of water on the sill of from 16 feet to 24 feet.

The Dock charges are the most moderate in the Far East

The Company's Yards and Docks cover 96 acres. The Water Frontage is about 1½ miles in length. Wharves and Pontoons are arranged where steamers can moor during repairs; and slips for hauling up small vessels are provided. Sheer legs capable of lifting 65 tons are placed at the various Docks.

The extensive Shipbuilding yards and workshops, lit by Electric Light, are provided with the latest improvements, such as traveling cranes of 60 tons' capacity, hydraulic and pneumatic machinery and tools.

Light railway lines are laid throughout workshops and yards.

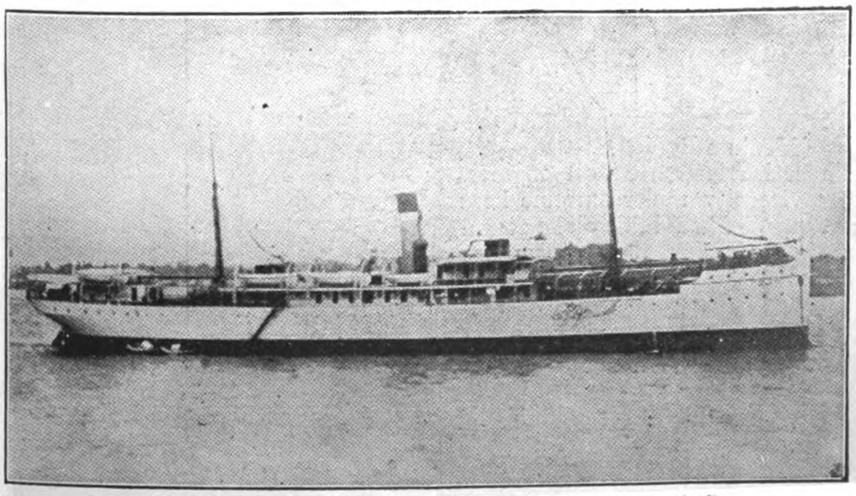
A Staff of Divers, and powerful salvage appliances, and Floating Cranes ready for any emergency at short notice. Enquiries immediately attended to.

Estimates given for all classes of work; Coast Steamers, Side and Stern-Wheelers, Tugboats, Launches, Steam Barges, Dredgers, Floating Cranes, and Lighters a speciality.

Every description of repairs and renewal work undertaken and expeditiously executed.

Motor, Land and Marine Engines and Boilers, Centrifugal, Mining, and other pumping machinery always in stock or in progress, also power driven Machine Tools. Engineer's Hand Tools, Steam, Gas, Oil, and Electric machinery and Engineering accessories generally.

**Sole Agents for Thornycroft Motors**



U. S. ARMY TRANSPORT "MERRITT" 300' 0" × 45' 0" × 28' 3"
Built for United States Government in 1912.

**PARTICULARS OF DOCKS**

Able to accommodate any vessel that can reach Shanghai

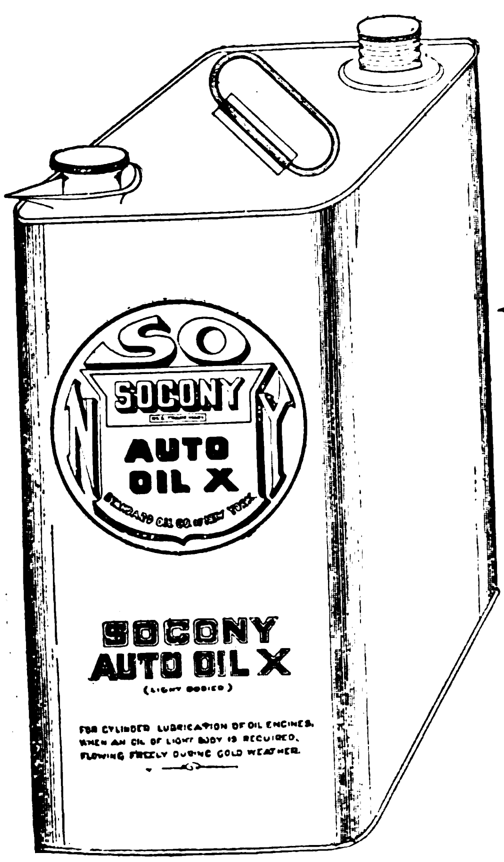
| Names | Length on Blocks | High Water | |
|---|---|---|---|
| | | Breadth of Entrance | Depth of water on Sill |
| Cosmopolitan Dock | 532 feet | 77 feet | 24 feet |
| International Dock | 528 " | 77 " | 23 " |
| New Dock . . . | 450 " | 74 " | 21 " |
| Old Dock . . . | 399 " | 53 " | 16 " |
| Tunkadoo Dock . | 350 " | 67 " | 18 " |

**Berths for Building Steamers of any Size**

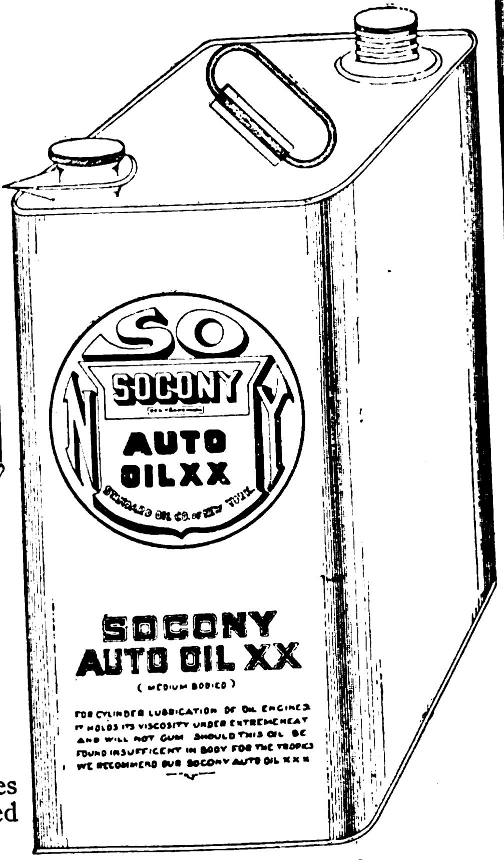
**CORRESPONDENCE INVITED**

# SOCONY AUTO OILS SAVE WEAR REDUCE FRICTION

**Friction costs more than oil.**
**Horse-Power is Energy.**
**Do not waste it.**




(Light Bodied)
For cylinder lubrication of oil engines when an oil of light body is required flowing freely during cold weather.




(Medium Bodied)
For cylinder lubrication of oil engines. It holds its viscosity under extreme heat and will not gum. Should this oil be found insufficient in body for the tropics we recommend our Socony Auto Oil XXX.

(Extra Bodied)
For cylinder lubrication of oil engines. To be used in the tropics when Socony Auto Oil XX is insufficient in body.

## LUBRICATION IS OUR BUSINESS.

Socony Oils are scientifically prepared and designed to meet the needs of the Motorist. They afford the degree of lubrication necessary to the maximum performance of the motor.

*Write for booklet "Pointers on Automobile Lubrication."*

**STANDARD OIL COMPANY, LUBRICATING OIL DEPARTMENT.**

**BRANCHES IN ALL PRINCIPAL CITIES IN CHINA.**

# HONGKONG & WHAMPOA DOCK CO., LTD.

HONGKONG

Dock Owners, Ship Builders, Marine and Land Engineers, Boiler Makers, Iron and Brass Founders, Forge Masters, Electricians.

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All classes of CONSTRUCTIONAL and GENERAL ENGINEERING WORK undertaken, also LOCOMOTIVES, RAILWAY ROLLING STOCK and PLANT, BRIDGES, etc.

COAST and RIVER STEAMERS, TUG BOATS and LAUNCHES, SHALLOW DRAFT VESSELS and STERN WHEEL STEAMERS.

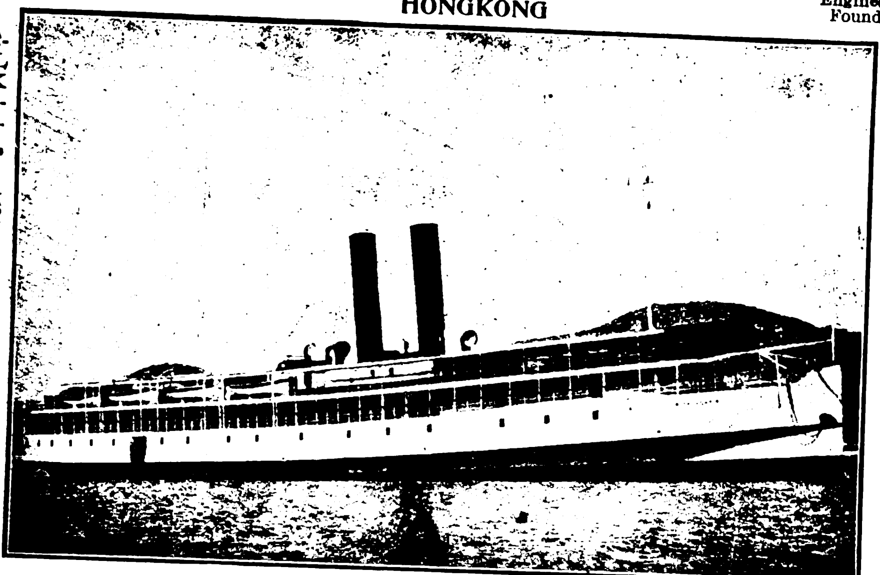
AUXILIARY MACHINERY for MARINE and LAND Purposes.

LAND and MARINE BOILERS of all sizes and classes. GALVANIZING by the Electrical process.

IRON and BRASS CASTINGS of all descriptions.

FORGINGS in IRON and STEEL for SHIPS, ENGINES, and LAND WORK, large and small.

We make a specialty of



TWIN SCREW RIVER STEAMER "TAI SHAN"

Length 290 ft. Breadth 53 ft. Depth 12 ft., fitted with Compound Surface Condensing Engines for a speed of 14.7 knots.

Built and engined complete by the HONGKONG & WHAMPOA DOCK CO., LTD. for the HONGKONG, CANTON & MACAO STEAMBOAT CO. LTD.

HIGH SPEED MOTOR BOATS for PASSENGER and CARGO Traffic.

ALL CLASSES of COCKS, VALVES and FITTINGS in IRON and BRASS supplied.

BOLTS, NUTS and RIVETS MANUFACTURED at SHORT NOTICE.

FINISHED NUTS in BRASS and IRON.

A LARGE STOCK of STEEL and IRON PLATES, BARS and ANGLES, always in hand.

The Company possesses SIX GRANITE DOCKS and TWO PATENT SLIPWAYS and these are equipped for EXPEDITIOUS WORK. Our plant is of the most modern type throughout.

Ship owners and Captains are assured that DOCKING and REPAIRS are carried out PROMPTLY and at MODERATE CHARGES.

The Dimensions of Docks and Slips are as follows :—

| *Name of Dock or Slip* | *Length on Keel Blocks* | *Entrance Breadth* | *Depth Over Sill at Ordinary Spring Tides* | *Rise of Tide* | |
|---|---|---|---|---|---|
| | | | | *Springs* | *Neaps* |
| **KOWLOON** | *Feet* | *Feet* | *Feet* | *Feet* | *Feet* |
| No. 1 Dock, Kowloon . . . | 700 | 86 ft. top / 70 ft. bottom | 30' | 7' 6" | 3 |
| No. 2 Dock, Kowloon . . . | 371 | 74' | 18' 6" | 7' 6" | —— |
| No. 3 Dock, Kowloon . . . | 264 | 49' 3" | 14' | 7' 6" | —— |
| Patent Slip, No. 1, Kowloon . | 240 | 60' | 14' | 7' 6" | —— |
| Patent Slip, No. 2, Kowloon . | 220 | 60' | 12' | 7' 6" | —— |
| **TAI-KOK-TSUI** | | | | | |
| Cosmopolitan Dock . . . . | 466 | 85' 6" | 20' | 7' 6" | —— |
| **ABERDEEN** | | | | | |
| Hope Dock . . . . . . . | 430 | 84' | 23' | 7' 6" | —— |
| Lamont Dock . . . . . . | 333 | 64' | 16' | 7' 6" | —— |

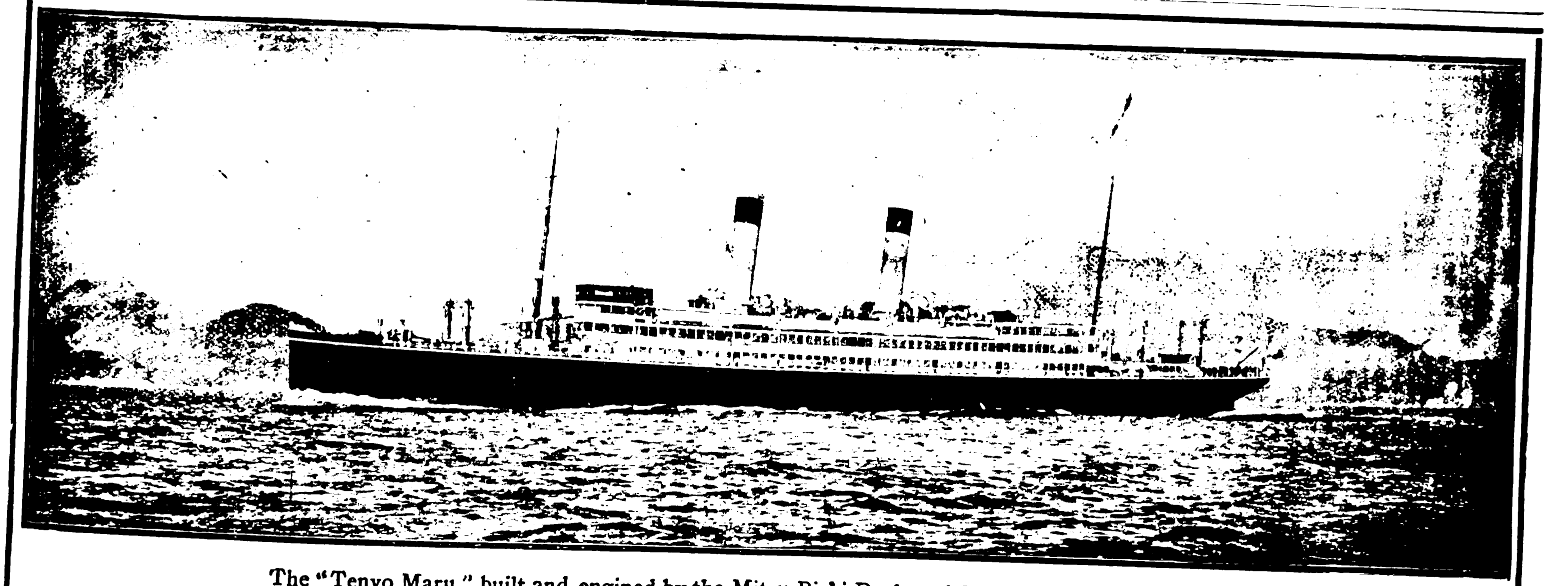
Please Address Enquiries to the Chief Manager, R. M. DYER, B. Sc., M.I.N.A., Kowloon Dock, Hongkong.

**Telephone No. 13 K. Head Office, Kowloon.**

**Town Office, Queen's Buildings Telephone No. 20, Hongkong**

## FINDLAY & CO.

AGENTS. MANILA, P.I.



The "Tenyo Maru," built and engined by the Mitsu Bishi Dockyard & Engine Works, Nagasaki.

# MITSUBISHI DOCKYARDS & ENGINE WORKS, NAGASAKI

**DOCK No. 1.**

| | | |
|---|---|---|
| Extreme Length . . . . | 523 | Ft. |
| Length on Blocks . . . . . | 513 | " |
| Width of Entrance on top . . | 88 | " |
| " " " " Bottom | 77 | " |
| Water on Blocks at Spring Tide | 23½ | " |

**DOCK No. 2.**

| | | |
|---|---|---|
| Extreme Length . . . . . . | 371 | Ft. |
| Length on Blocks. . . . . . | 360 | " |
| Width of Entrance on top . . | 66 | " |
| " " " " Bottom. | 53 | " |
| Water on Blocks at Spring Tide | 22 | " |

**DOCK No. 3.**

| | | |
|---|---|---|
| Extreme Length . . . . . . | 722 | Ft. |
| Length on Blocks . . . . . | 714 | " |
| Width of Entrance, top . . . | 99¼ | " |
| " " " Bottom. . | 88¼ | " |
| Water on Blocks at Spring Tide | 34¼ | " |

**THE BEST EQUIPPED SHIPBUILDING PLANT IN THE FAR EAST,**

**With Special Facilities for Handling the Heaviest Castings and the Repairing or Building of Ships, Engines and Boilers Also Electrical Work.**

**LARGE STOCK OF MATERIAL, AND FITTINGS ALWAYS ON HAND**

**The Powerful Salvage Steamer "Oura-Maru" (712 Tons, 700 I. H. P.) Equipped With Necessary Pumps And Gear, is Always Ready at Short Notice.**

# "Pegasus!" Motor Spirit

*(Brand Name)*

## All Our Motor Spirit

sold in The Far East

is packed in tins and boxes

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This method of packing

enables us to deliver to you

**In Its Original Package, A Motor Spirit With All Its Original Power—Producing Efficiency**

**STANDARD OIL COMPANY OF NEW YORK**

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PHILIPPINE ISLANDS, INDO-CHINA, AND SIAM.

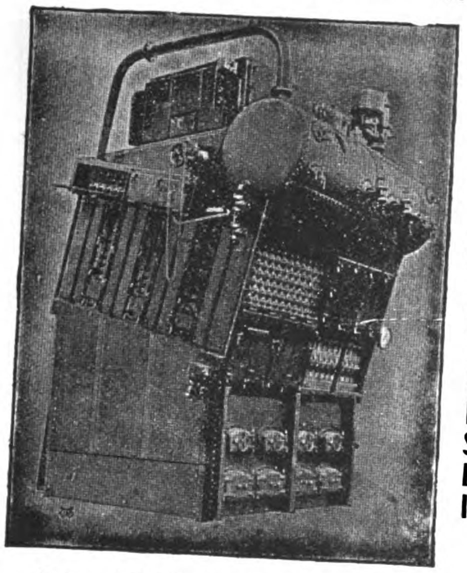
# BABCOCK & WILCOX, LTD.

PATENT

## WATER-TUBE STEAM BOILERS

SUITABLE FOR ALL INDUSTRIES, AND FOR BURNING ANY KIND OF FUEL

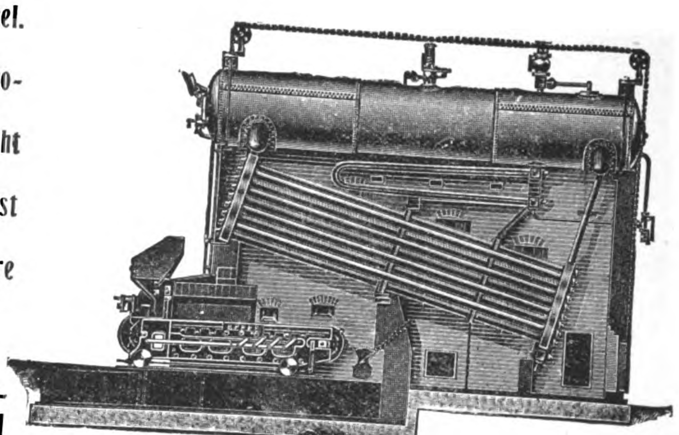
**1100,0,000 H. P. Land-type For Stationary Purposes—2,500,000 H. P. Marine-type Afloat**



Babcock & Wilcox Marine Boiler

ADVANTAGES:

- Simple in Design. Easy to Clean
- Constructed of Wrought Steel. Rapid Steam Raiser
- Economical in coal. Economical in Repairs
- Very Durable. All Straight Tubes
- No Screwed Joints. No Cast Metal
- No joints exposed to the Fire
- Rapid Circulation of Water
- Steady Water Level
- Large Steam Space
- Installed in many large installations in China and Japan



BABCOCK & WILCOX LAND BOILER, fitted wth Patent Superheater and China Grate Stoker

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Steam Superheaters
Feed-Water Heaters
Coal Conveyors
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Water Softeners and Purifiers
Structural Steel Work
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Electric Cranes

For Burning Chinese and Japanese Coal Smokelessly
Complete Steam Piping Plants and all Boiler House Accessories.
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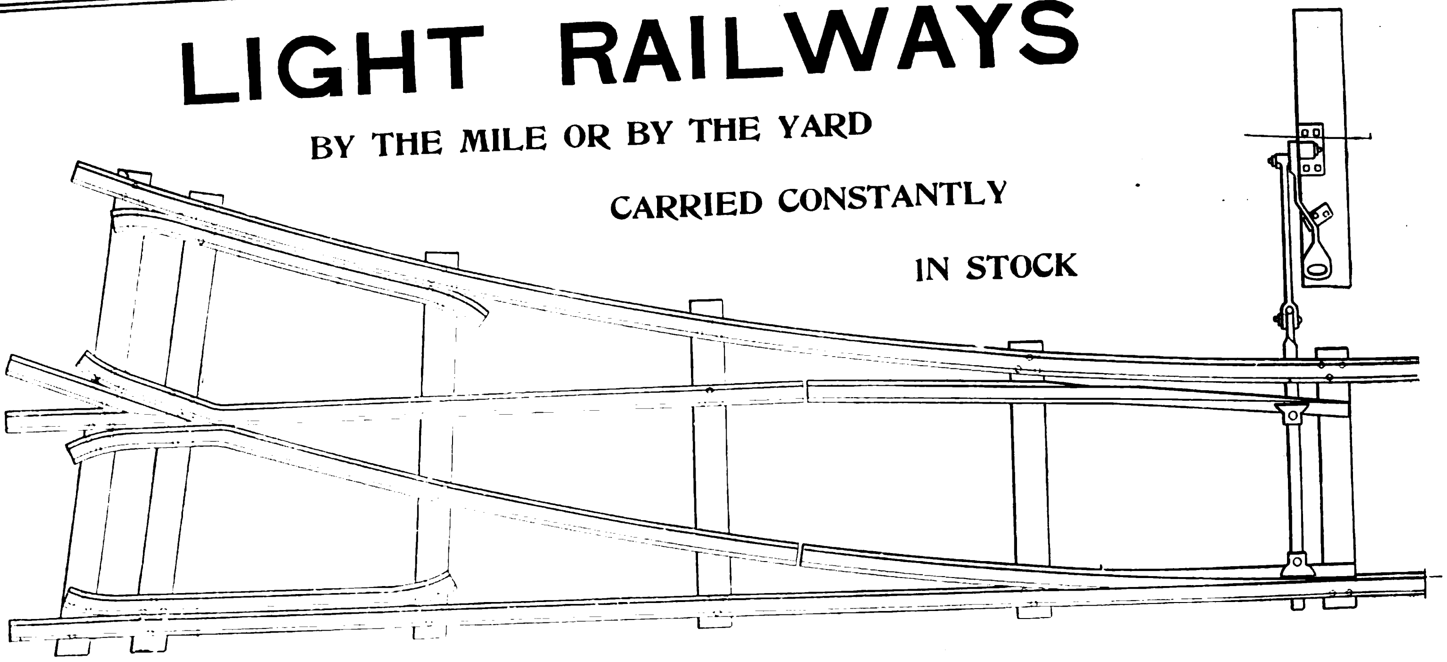
BY THE MILE OR BY THE YARD

CARRIED CONSTANTLY

IN STOCK



## Complete Equipment for Light Railways

Rails. Fishplates, Bolts, Nuts, Spikes, Points, Crossings, Metallic Sleepers.

FOR IMMEDIATE DELIVERY

**PORTABLE SWITCHES** { as shown in illustration above 2 foot, 6 inch gauge, center radius 24 feet } **CONSTANTLY IN STOCK.**

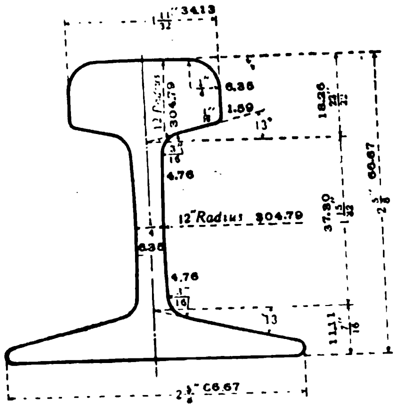
We sell by the Mile or by the Yard.

No inquiry too small or Quantity too Large to figure on.

Order TO-DAY and take Delivery TO-MORROW.

We have the Stock to Meet Every Requirement.

RAIL SECTION 2040



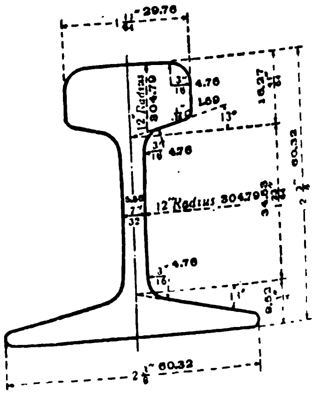
20 lbs. per yard.
9.92 kg. per meter.
31.43 gross tons per mile of single track.
19.84 tonnes per kilometer of single track.
168 ft. of single track per gross ton.
50.4 meters of single track per tonne.

**United States Steel Products Company**

**Union Building, 4 The Bund,**

**Shanghai.**

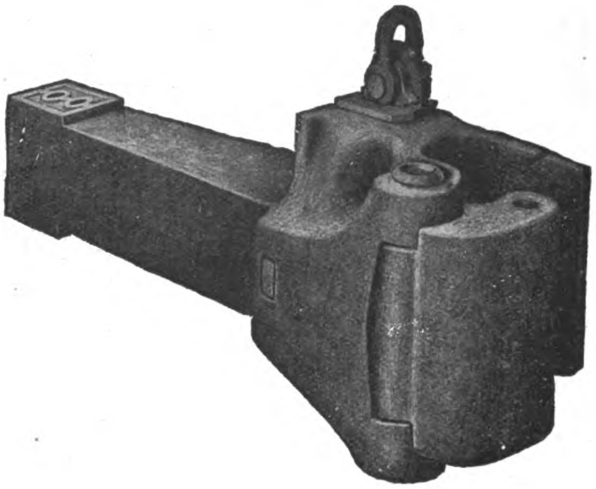
RAIL SECTION 1640



16 lbs. per yard.
7.94 kg. per meter.
25.14 gross tons of single track per mile.
15.88 tonnes per kilometer of single track.
210 ft. of single track per gross ton.
62.97 meters of single track par tonne.

The

# JANNEY-PENN
# Coupler



THE latest development of the Janney type of M. C. B. Coupling originally introduced and promoted by this company. This coupler has all the simplicity of the early type of the Janney coupler, and also has the up-to-date features of a "Lock-to-the-Lock," "Lock-Set," and a "Knuckle-Opener," and complies fully with all the requirements and recommendations of the M.C.B. Association of the U.S.A.

***Lock-To-The-Lock*—**The locking pin cannot climb, being held in the locked position by a trigger the lower end of which projects into a recess in the coupler head, thus preventing accidental uncoupling.

***Lock-Set*—**Lock setting is accomplished by the locking block resting on a seat on the inside wall of the coupler head when raised to the uncoupling position, from which seat it is dislodged on the closing movement of the knuckle in the act of coupling.

***Knuckle-Opener*—**The knuckle-opener pushes the knuckle open to the fullest range of movement from a fully closed position, or from any partially open position, and its path of movement is such as to insure easy and complete opening of the knuckle.

The lock has an extra large bearing surface in contact with the knuckle in the coupler, being approximately five square inches. No portion of the locking block extends beyond the bottom wall of the coupler.

This coupler has the desirable feature of easy accessibility of parts, thus facilitating the making of repairs.

***Manufactured exclusively by***

## THE McCONWAY & TORLEY CO.

**Pittsburgh, Pa., U. S. A.**

*Cable Address—Torley, Pittsburgh*

**CHINA AGENTS: Fearon, Daniel & Co., Tientsin, China - - Andersen, Meyer & Co., Shanghai, China**

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Under conditions existing in China, Oil Stoves for Cooking and heating, and Lamps and Lanterns for public and domestic lighting are necessary to an unusual degree for comfort and convenience. . . .

To meet this need we carry in stock at all our branches a full line of the highest grade of Oil Burning Stoves and Lamps, consisting of:

**RAYO LAMPS AND LANTERNS**
**NEW PERFECTION HEATERS**
**NEW PERFECTION, BLUE FLAME, WICK, COOKING STOVES**

*To Obtain the best Results from the above use only the following Brands of oil:*

**NORTH CHINA**
- Nonpareil
- Indian Head
- Brilliant
- Tiger
- Eagle

**SOUTH CHINA**
- White Rose
- Comet
- Cock
- Eagle

BRANCHES AND DEALERS ALL OVER CHINA
PHILIPPINE ISLANDS, INDO-CHINA, AND SIAM

# CANADA CARBIDE COMPANY,

LIMITED.

Head Office: MONTREAL, CANADA,

Manufacturers and Exporters of

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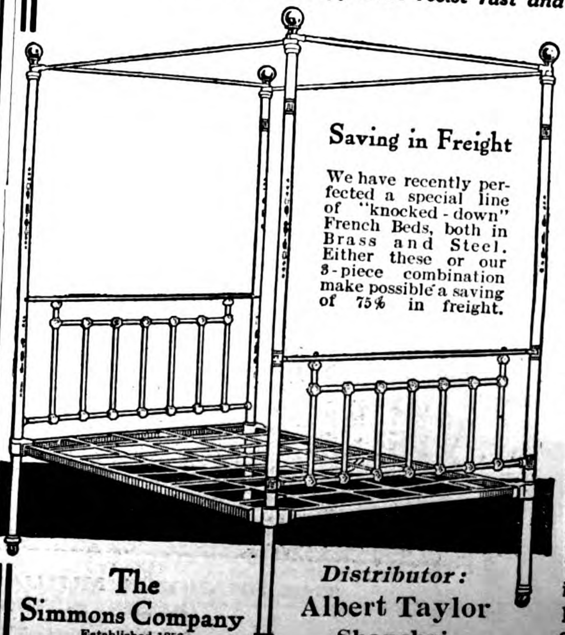

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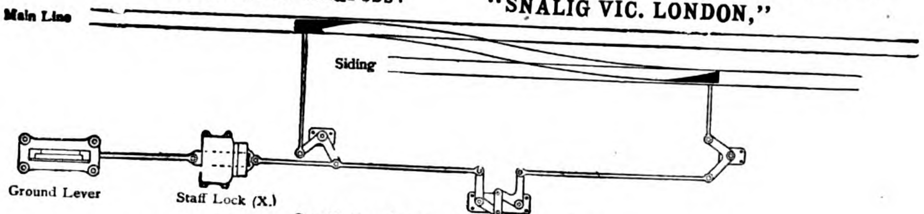


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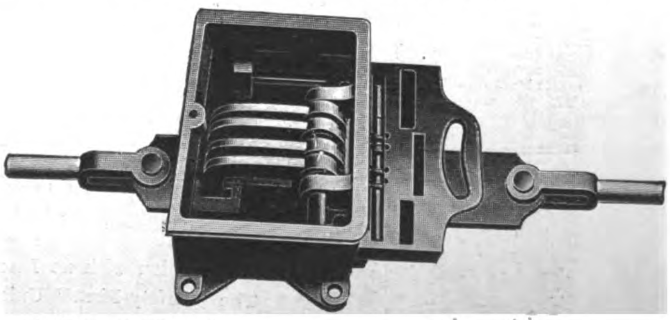

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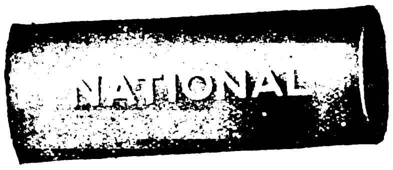


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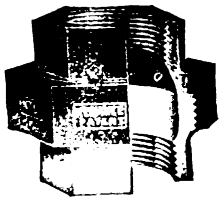

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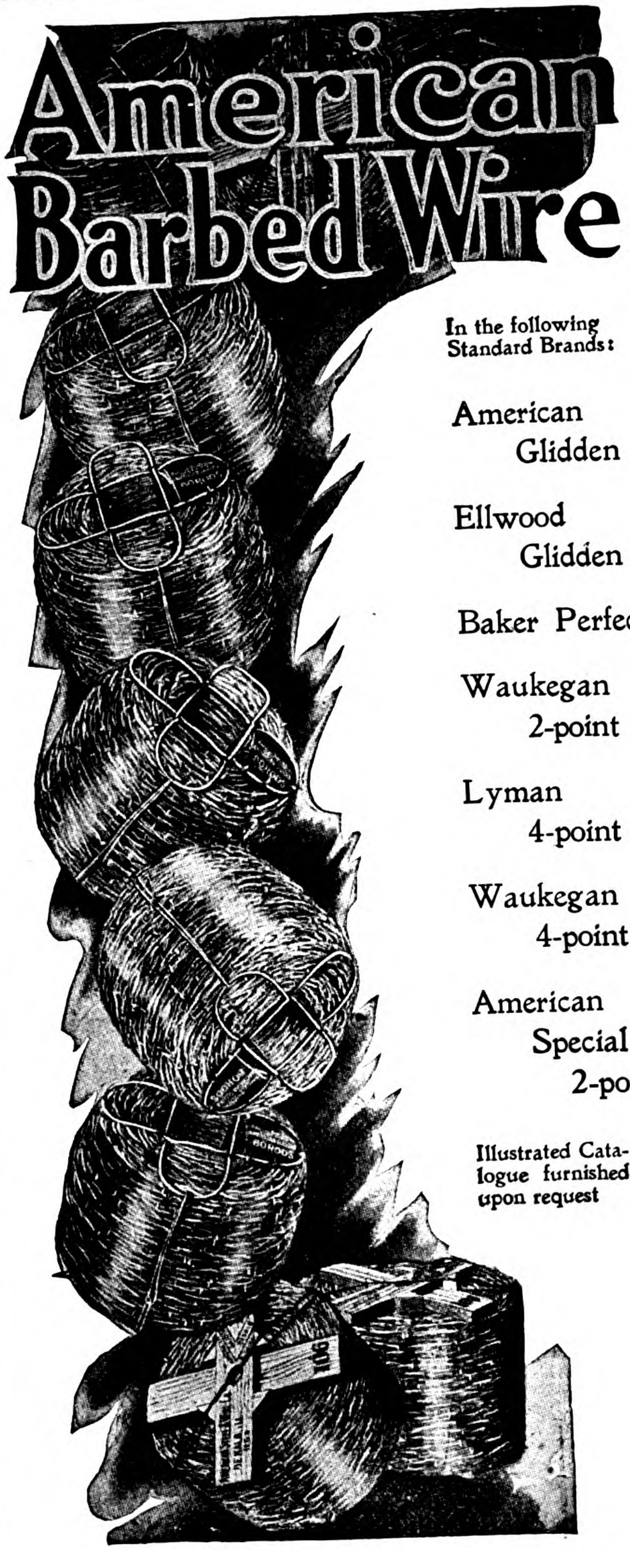


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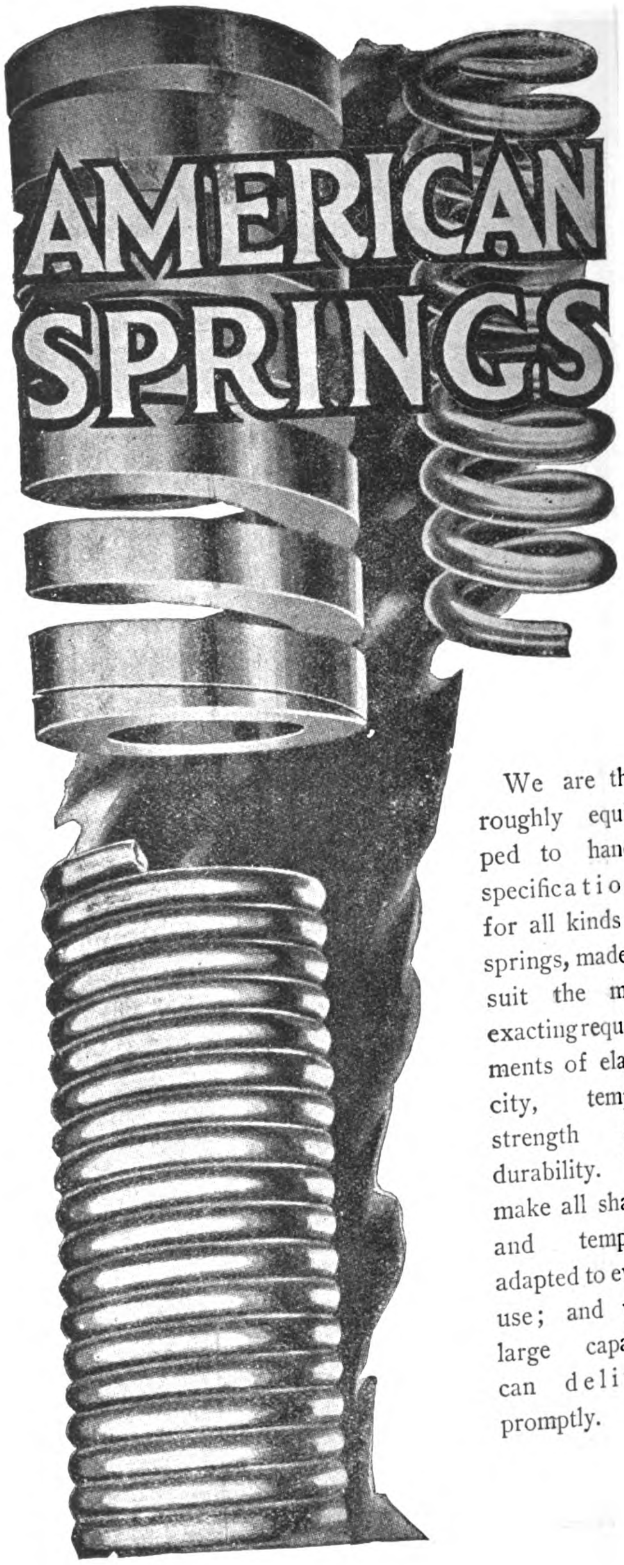


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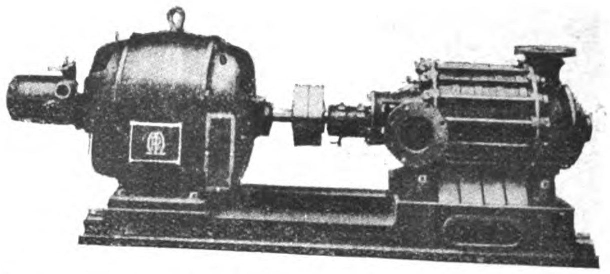

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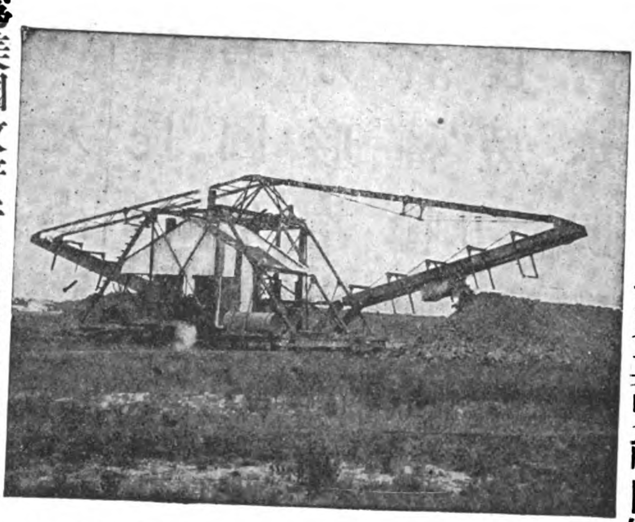
奥司丁鑿溝機器樣式及大小種類極多且各種地土均可挖鑿其兜能自傾外出其機器之料作均鋼所鑄



奥司丁掘土機器能自由運動地之深淺闊狹斜側均適宜合用其兜能自傾外出

圖中之奥司丁連結挖掘機器爲美國政府所用以開巴拿馬運河之用每一連機每點鐘可挖掘六十八立方碼奥司丁公司所出之機器通行於美國英國坎拿大奥司達利亞南亞非利加日本俄羅斯意大利巴西及埃其丁民主國且均由各該政府定購

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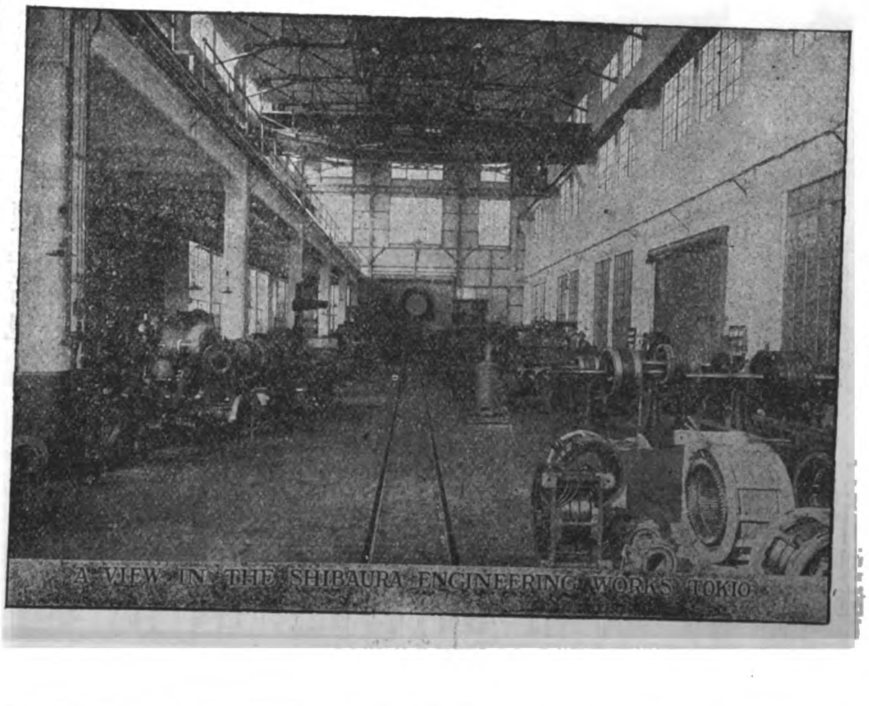

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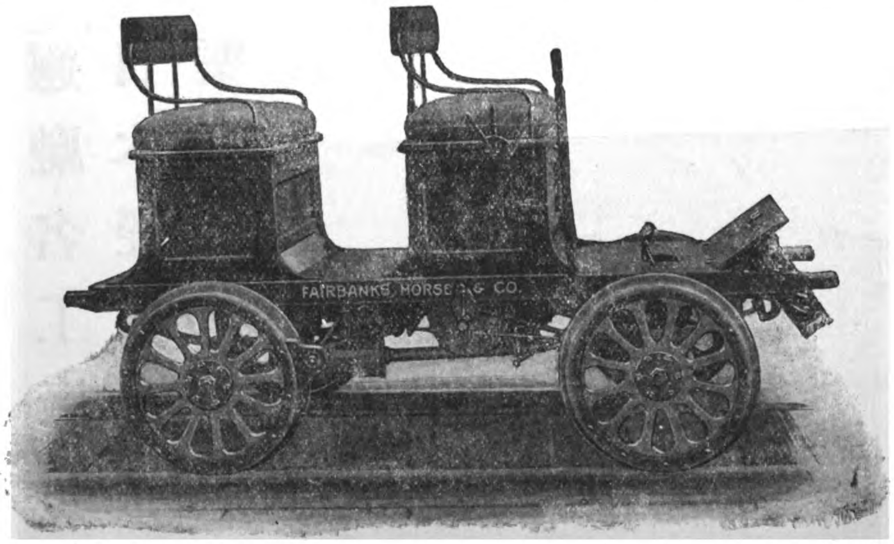


反白司煤油馬達車爲查閱鐵軌之用鐵路人員乘坐最爲合宜蓋此車駕駛甚易車架爲鋼質所製容四人長可隨意三十六吋或過此呎吋亦可

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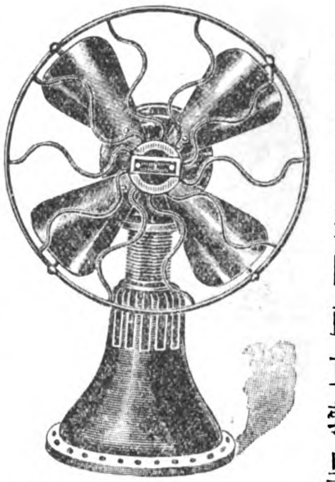
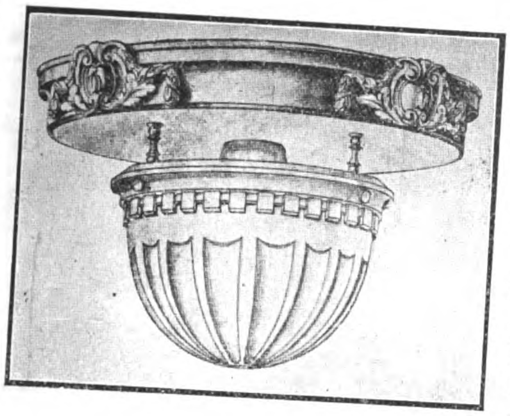


## 新發明無電風扇

本行經理美國藍克勃里持廠(譯即湖風馬達扇)新發明一種無電自來風扇點燒火酒速率快捷每二十四小時祇費洋一角五分而一分鐘內自五百轉至六百轉之多故此風扇非獨內地極端歡迎即裝電之處亦覺搬動靈便危險毫無



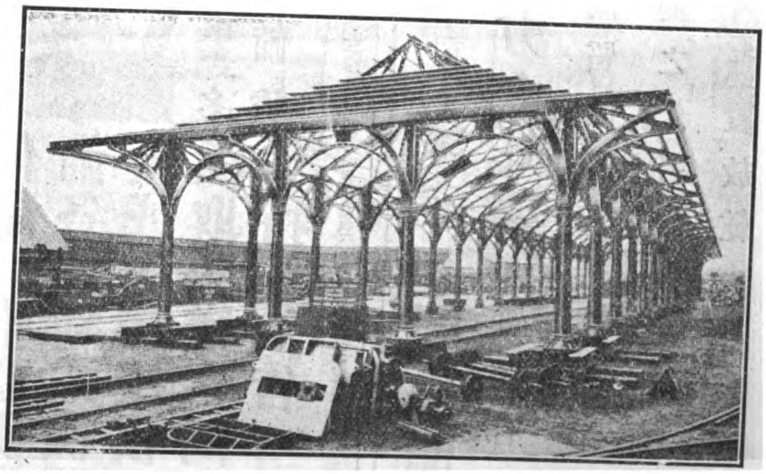
## 新發明白來司康拉脫燈

此燈製造精美燃點清潔明如白晝且光頭柔和其色如銀輕巧可愛效力極佳質地美好因發光勻洽空氣透徹易於料理諸君試購用之方知此燈之適用也倘蒙定購或願任各處經理者請函詢大馬路廿八號柏樂天洋行可也

# 海特雷脫生公司廣告

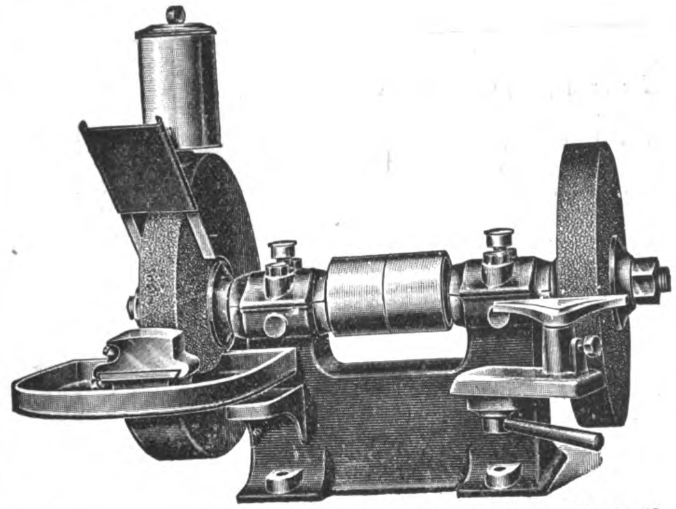
Head, Wrightson & Co., Ltd.

本公司有大廠三所專造煤礦場及各礦場所用之物及裝煤船貨車起重機風箱冶汽爐船塢門等橋坑總齒輪鋼質貨車屋頂煙筒油池之類



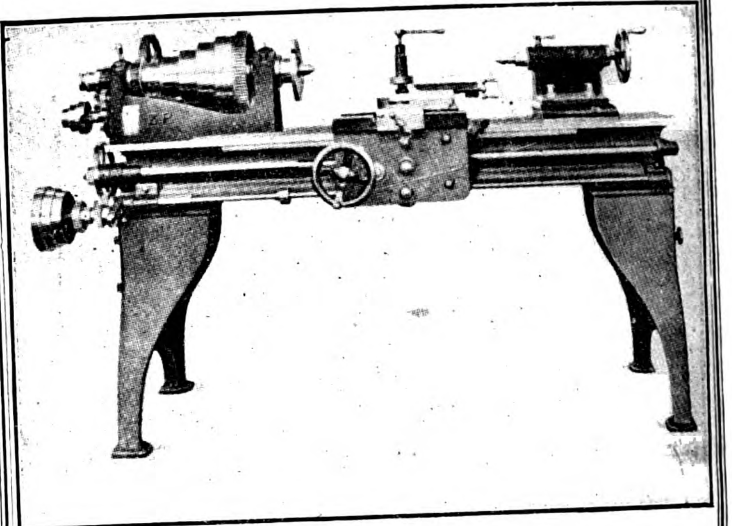
此圖乃香港之車站其屋頂爲本公司所建造本公司爲英國大廠之一每年出鑄件十萬噸出機器一萬七千噸且爲中國印度日本包辦各項工作

## 倫敦愛茂來工廠有限公司廣告
The London Emery Works Co., Ltd.



此圖爲雙頭愛茂來檖式磨機其全體均爲生鐵所製軟鋼磨心直徑一寸其軸枕均爲白色金屬類磨心傍有緊鬆之滑車排於左者可磨潮濕之物因配有水槽碗架蓋頭及墜俱右邊則配有普通磨件尚有最好質地之地球牌愛茂來輪盤兩俱大十二吋厚一吋半
此項磨機亦可大十四吋厚二吋及大十六吋厚二吋之輪盤
若欲知圖樣或說明書可來函索取
工廠開設英京倫敦土丁南英雄工廠

## 用電氣以節耗費



電氣一物利用甚溥用以裝修各項機器非特工作較人力爲速而耗費亦可節省因其出貨多而成事易也凡各機器廠欲裝置電氣馬托或鑽頭磨刀機無論活動與否均可使之流利活潑所需電力或交流或直流及電鎊之多寡均當隨意裝配賜顧諸君幸垂鑒焉

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## 勒克洛炸藥

又名勃辣司丁泡特係**開山開礦用**

**最大爆力之炸藥**其質共有二類一硬質一流質兩種末參合時分裝二處決無炸裂之患并無須多費存放在火藥機倉內祗置放乾爽地方不論何處均極相宜此藥參合後**較之別種炸藥更爲穩當**藥粉裝法用一布捲筒對徑六分或至二寸長六寸半或至八寸爲度卽可應用製造廠林洛泡特公司在美國紐約華爾街一百零六號

Rendrock Powder Co.

美國舊金山
## 瓦爾根製冰機器廠
Vulcan Iron Works

圖爲製冰機之一種

花色繁多不及備載

本廠專造各式製冰機器運銷各地蒙購辦諸君謬加推譽稱爲靈便合用本廠自當精益求精以期仰副雅意現在製備各種新式機器或大或小花樣俱全如欲取閱樣本函索卽奉特此佈告

電碼 "Vulcan" San Francisco

# 交通銀行廣告

BANK OF COMMUNICATIONS

本銀行資本一千萬兩專辦銀行一切交易各項存款無論定期活期其利息均照議給付并匯劃中國各處以及押款等事　總行開設北京　分行東三省牛莊奉天長春吉林哈爾濱遼陽蓋平孫家台鐵嶺錦縣新民屯直隸北京天津張家口保定海甸順德唐山北通州豐鎮勝芳石家莊山西大同陽高陝西澠池山東濟南濟寧棗莊烟台德州河南開封焦作周家口漯河道口彰德鄭州信陽州洛陽郾陽江蘇上海蘇州無錫鎮江揚州浦口板浦徐州清江浦浙江杭州寧波安徽蕪湖蚌埠江西九江湖北漢口宜昌沙市湖南常沙益陽衡州湘潭常德寶慶廣東廣東特別處新列后熱河歸化香港新加坡大連等等地方

總經理　張思仁　史拉克

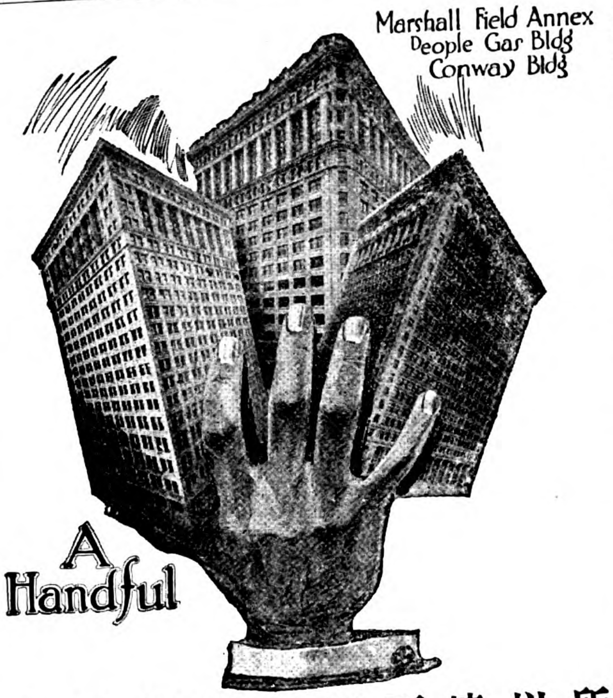
副經理　徐寶琪

仝啓

# 西北展張鐵片公司廣告

North Western Expanded Metal Co.

本公司製造哪白兒展張鉄片專爲近世築造之鋼屋內部所用以上之圖爲美國芝高哥城最大最新近之大廈其內部及底盤均爲本公司所製之哪白兒展張鐵片條板所造蓋以之作底盤其價甚廉以之作墻則耐久因哪白兒牌之條板爲惟一之建築品且爲全球所公認推爲內外建築特別品之標準若用於熱帶處所用以作墻及天花板底則更相宜蓋其性耐久而

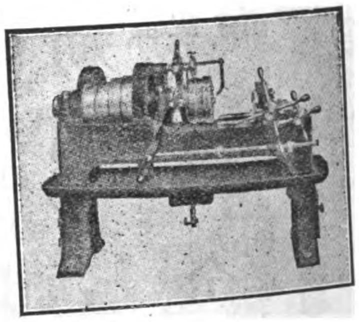



不曲且不笨重易於運輸且避水患此項展張鉄片條板業經由五洲各大建築家實地試驗防熱避風火暴雨等危險實爲建築家所不可少之物

今敬告建築家若欲建造房屋無論何時何地何物先請察驗哪白兒牌之展張鉄片條板本公司備有說明書請來函索取可也

# 英國約書亞西潑有限公司

Joshua Heap & Co., Ltd.

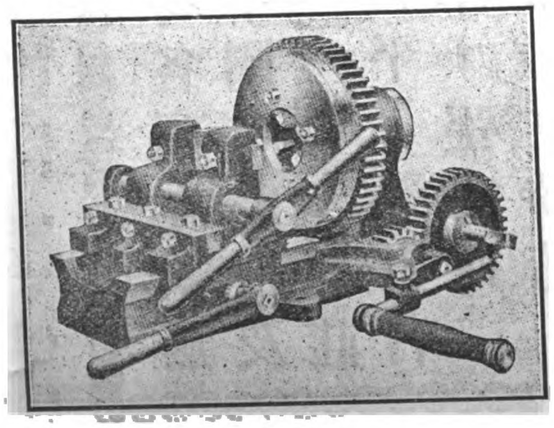


本公司專造製螺絲機器

此圖爲二吋單頭自動製螺絲機器爲多頭製螺絲機器之一曾註册立案爲近世最省工力之機器備有柄頭及自動開機連於螺形頭上及自動關機并配製螺絲各俱無不靈動

本公司所出之註册鋼質螺絲模型爲市上所罕有蓋質地堅實螺絲板易於拆卸且全體皆爲良工所製並無發條或輕脆之料作摻雜其間

此圖爲改良通用之製螺絲機器可製螺絲管彎曲短小之件如對徑二吋大小之物或釘梢對徑二吋半等物均可製造近年來銷數已達二千五百架其大者如對徑八吋之物亦可製造此項機器電力與人力均適用若欲知詳細請來函索取目錄爲禱



# 橫濱正金銀行廣告

Yokohama Specie Bank, Limited

本銀行創設於紀元一千八百八十年總行開設日本橫濱資本日洋四千八百萬元收足資本日洋三千萬元公積日洋一千八百五十萬元英京倫敦各銀行如倫敦及司密夫聯合銀行倫敦聯會股票銀行及派耳銀行均爲本行之經理今將分行及經理處開列如下

安東縣　孟買　加耳谷塔　長春　大連　檀香山　香港　漢口　神戶　倫敦　來因司　遼陽　奉天　紐約　牛莊　長崎　大坂　旅順　北京　舊金山　東京　鐵嶺　天津　靑島　哈爾濱　勞山及耳司

上海亦設分行　活支及定期存款利息均有銀兩洋圓均聽尊便　匯票可通日本高麗臺灣及中國各重要地方并歐洲印度美洲各通商處所并辦理各種銀行所辦各事宜

經理科大麥啟

# 克耶鎖鍵工廠露佈

Joseph Kaye & Sons Ltd., Lock Works, Leeds.

本公廠專製車門鎖鍵滑門門門精巧門鐶門鎖及門門等以應各種用品且製造鋸齒形無縫之純鋼油管承經註冊專賣爲英國之出品供應於英國水軍者不下六萬只大西鐵路大北鐵路蘭克省及雅克省間之鐵路倫敦及西南鐵路南斐洲及印度國有之鐵路均用此純鋼油管盛油也倘承不棄請來信定購是幸

工廠開設於英國离池

# 中國銀行廣告

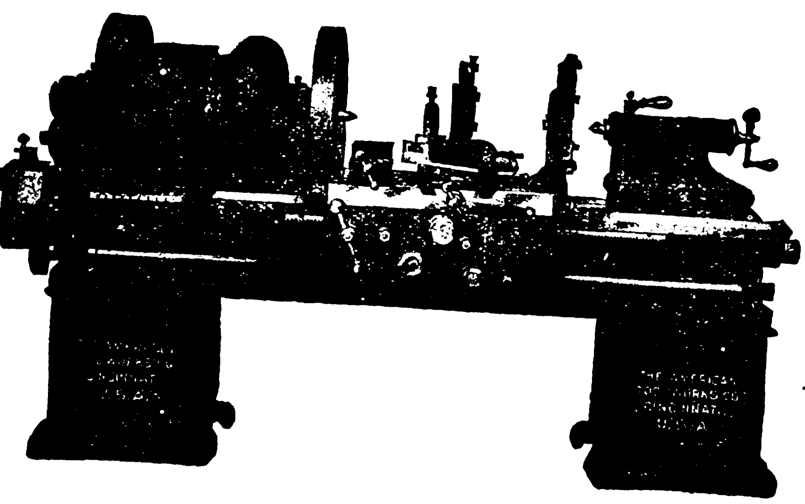
THE BANK OF CHINA

本銀行於民國元年奉　政府命令設立兩年以來信用昭著總行設於（北京）分設（直隸省）天津　保定　邢台　灤縣　唐山　滄縣　濮陽　邢縣　磁州（山東省）濟南　青島　煙台　藤縣　濟寧　周村　惠民　益都　臨清　臨沂（河南省）開封　周口　彰德　漯河信陽　道口（山西省）太原　運城　歸化城（江蘇省）上海　南京　鎭江　無錫　蘇州　揚州　清江浦（安徽省）安慶　蕪湖　大通　徐州　下關　蚌埠（江西省）南昌（福建省）福州　南台（浙江省）杭州　寧波　蘭谿　嘉興　湖州　溫州　紹興（湖北省）漢口　沙市　宜昌（廣東省）廣州　江門　汕頭　瓊州　韶州　潮州（東三省）奉天營口　安東　錦縣　大連　鐵嶺　長春　吉林　哈爾濱　齊齊哈爾　等處享有發行鈔票代理國庫之特權並辦理匯兌買賣生金銀往來存款定期存款抵押放款貼現放款代各公司商號或個人收取本埠及他埠票據款項保存有價證券及一切貴重物件至匯兌一項無論通商大埠蕞爾遐陬凡本行已經分設者均屬便利所收匯費無不格外克己以副光顧諸君之雅意再本行發行鈔票準備充足凡完糧納稅發俸放餉官款出納商民交易以及應付鐵路輪船郵電一律通用現爲便利商民行使本行鈔票起見特於北通縣（海甸鎭）設立兌換所並於本京內外城商店繁盛之區委託殷實商號代兌本行鈔票如有多數鈔票請逕向（西交民巷）本行兌換可也茲將代理兌換處所開列於下

▲注意▼（東四牌樓）寶源銀號（安定門）會源銀號（東珠市口）隆茂源銀號（騾馬市）恆裕金店（西河沿）仁昌金店（後門）永通誠布店（新街口）益泰成布店（西單牌樓）和順公布店（後門）平易銀號（西單牌樓）益大銀號（又珠寶市爐房十家）恆盛銀號同元祥爐房　德順號　聚起號　祥瑞興記　源豐號　復聚號　萬興號　全聚厚記　聚盛源爐房　再本總行營業時間開列如下　陽曆四月一日起至九月底止每日上午九點鐘起至下午四點鐘止由陽曆十月一日起至三月底止每日上午十點鐘起至下午四點鐘止

# 美國機器公司

The American Tool Works



本公司專製各式車牀轉牀鉋床等久爲全球所推許無煩贅述近又新發明一種**阿美利加距半徑轉牀**其靈活便利較從前各種機牀有過之無不及且**質料堅固製造精良**以之裝配各物**分量甚準**無絲毫之錯亂可爲機器界中別出心裁最有價值之品其形式大小不一有二尺二尺半三尺三尺半四尺五尺六尺七尺不等或用皮帶或用馬帶均可應用若欲樣本請來函至本公司取閱可也

**總發行所美國哇哈華省新新納搭城**

# 愛鍊純鋼廠

在英國希斐爾特地方

# 鹿牌鋼

本廠專鍊各種各式尺寸鋼料爲寰球各製造局造幣廠礦務局機器廠打鐵廠等處所用並造超等鎗管鎗彈吸鐵鋼風硬器具快鋼彈簧鋼兼造鏟刀快絞絲鑽鋸錘鋼條鋼片汽車特別鋼料錳質碎石鋼鐵路及電車分路叉橫軌等以及碎礦鋼料並造彈球管子水坭機器一應俱全

賜顧者請臨上海二馬路外灘B字一號接洽或函致亦可

獨家經理上海漢口泰來洋行白

Edgar Allen & Co., Ltd., Sheffield, England.

# 華愛德公司

本公司代聘全球著名工程師專包辦並經理各種工程兼各式工程物料已歷有年所成效昭著爲各國官商各界所推許如蒙　惠顧請向下列各經理處接洽可也

美國紐約滙業處四十三至四十九號
英國倫敦克洛克路九號

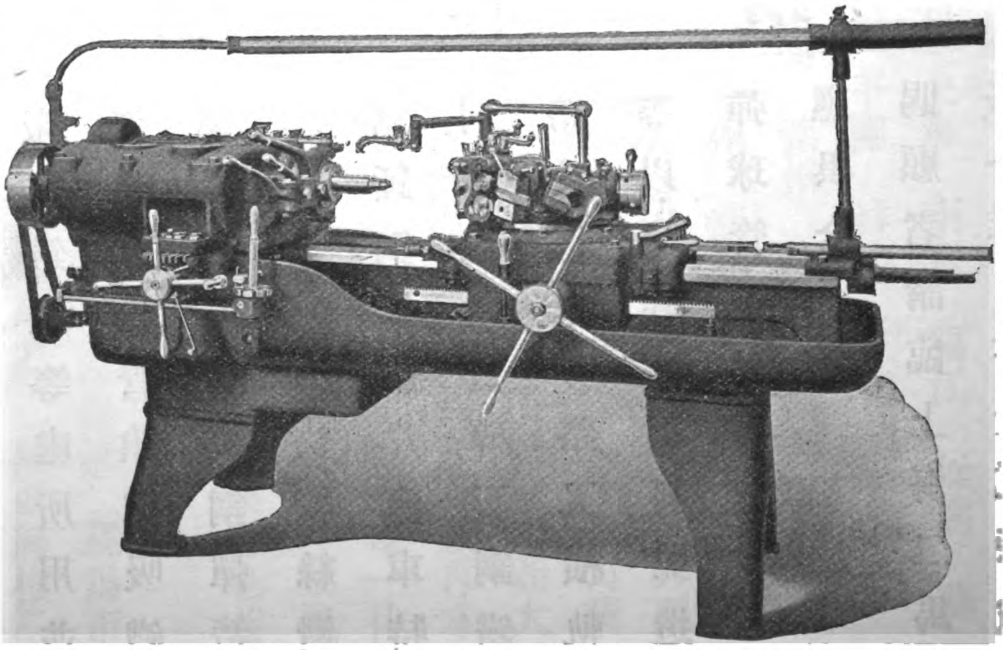
J. G. White & Company



# 羣司蘭姆生機器公司

Jones & Lamson Machine Company.

此圖爲本公司所特之車床若能習學此機完美則得利可操勝劵也此車床爲車塔平面機其大小爲闊三吋長三十六吋專做鐵條柄軸等各種工件故此機及其作用　能使工人幷機器加增出品　因用是項機器不必購用價値高貴之小另件配製工作也



總之製造此種車床之目的　即費一文錢得一文錢之利於購者有莫大之利益

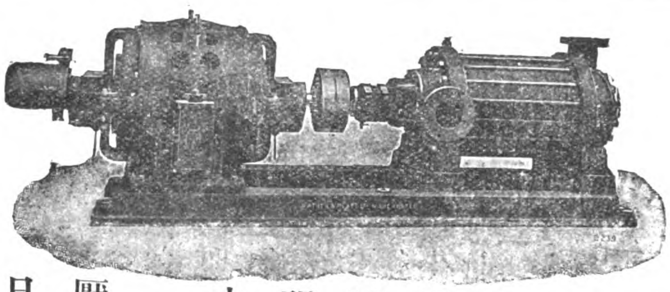
欲知詳細章程請來函索取不費郵資

本公司開設　美國活忙脫省司不林飛而特　英國倫敦維多利亞街九七號

## 麥脫拍來脫輪盤抽機公司

Mather & Platt, Ltd. Turbine Pumps.

輪盤抽機爲本公司所發明且已有四十年之經驗故所出之抽機愈製愈精購用者無不樂用且無論高低均適於用此項抽機之動力或由馬達小輪汽輪速率之汽機或皮帶或繩索之力均可抽動且一經試用則耐久非常不必再行查驗本公司所出之抽機通行於各處極多行試多年從未拆卸開視因本公司所製造之抽機美備洽意也此項抽機有自動壓勻之力裝製齊備且可增減機內之空



穴價格便宜若欲購用而知詳細章程者請來函索取目錄上圖爲六筒之抽機 頭長六百十二尺每分鐘可吸六百五十加侖每分鐘可轉一千四百五十次則所動之力乃藉馬達也

## 交通部吉長鐵路客車時刻表

Kirin-Changchun Railway.

民國四年五月一日改定

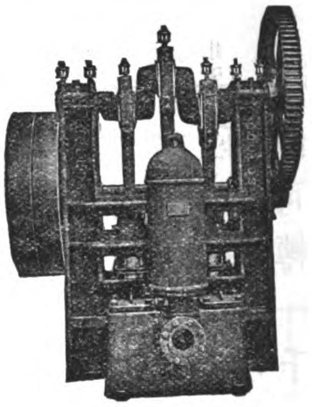
### 由長春頭道溝至吉林（下行車）

| 站名 | | 第一次 客車 | 第三次 客貨車 |
|---|---|---|---|
| 頭道溝 | 開 | 上午七·三〇 | 下午二·三〇 |
| 長春 | 到 | 上午七·三八 | 下午二·三〇 |
| 長春 | 開 | 上午七·四二 | 下午二·四五 |
| 卡倫 | 到 | 上午八·一三 | 下午三·一〇 |
| 卡倫 | 開 | 上午八·一四 | 下午三·二五 |
| 飲馬河 | 到 | 上午八·四六 | 下午三·五八 |
| 飲馬河 | 開 | 上午八·四八 | 下午四·〇三 |
| 下九臺 | 到 | 上午九·〇三 | 下午四·一七 |
| 下九臺 | 開 | 上午九·〇四 | 下午四·一三 |
| 營城子 | 到 | 上午九·一六 | 下午四·二四 |
| 營城子 | 開 | 上午九·一八 | 下午四·二六 |
| 土們嶺 | 到 | 上午九·四〇 | 下午五·〇三 |
| 土們嶺 | 開 | 上午九·五〇 | 下午五·一三 |
| 趙家店 | 到 | | |
| 趙家店 | 開 | 上午一〇·一〇 | 下午五·三三 |
| 樺皮廠 | 到 | 上午一〇·一三 | 下午五·五七 |
| 樺皮廠 | 開 | 上午一〇·二三 | 下午六·〇三 |
| 孤店子 | 到 | 上午一〇·四六 | 下午六·一八 |
| 孤店子 | 開 | 上午一〇·四七 | 下午六·三〇 |
| 九站 | 到 | 上午一一·〇三 | 下午六·三八 |
| 九站 | 開 | 上午一一·〇五 | 下午六·四三 |
| 吉林 | 到 | 上午一一·二五 | 下午七·〇五 |

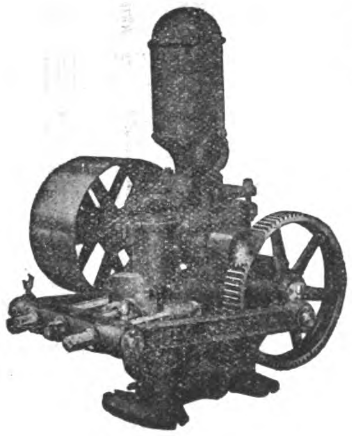
### 由吉林至長春頭道溝（上行車）

| 站名 | | 第二次 客車 | 第四次 客貨車 |
|---|---|---|---|
| 吉林 | 開 | 下午二·三〇 | 上午六·一〇 |
| 九站 | 到 | 下午二·五〇 | 上午六·四三 |
| 九站 | 開 | 下午二·五二 | 上午六·四五 |
| 孤店子 | 到 | 下午三·〇七 | 上午七·〇三 |
| 孤店子 | 開 | 下午三·〇八 | 上午七·〇四 |
| 樺皮廠 | 到 | 下午三·一三 | 上午七·一〇 |
| 樺皮廠 | 開 | 下午三·二四 | 上午七·一三 |
| 趙家店 | 到 | | |
| 趙家店 | 開 | 下午三·四六 | 上午七·五八 |
| 土們嶺 | 到 | 下午四·〇六 | 上午八·一八 |
| 土們嶺 | 開 | 下午四·一三 | 上午八·二四 |
| 營城子 | 到 | 下午四·二三 | 上午九·〇三 |
| 營城子 | 開 | 下午四·二六 | 上午八·五〇 |
| 下九臺 | 到 | 下午四·四八 | 上午九·〇三 |
| 下九臺 | 開 | 下午四·五〇 | 上午九·〇五 |
| 飲馬河 | 到 | 下午五·〇四 | 上午九·一〇 |
| 飲馬河 | 開 | 下午五·〇六 | 上午九·一三 |
| 卡倫 | 到 | 下午五·二八 | 上午九·二五 |
| 卡倫 | 開 | 下午五·四〇 | 上午九·五七 |
| 長春 | 到 | 下午六·一〇 | 上午一〇·二一 |
| 長春 | 開 | 下午六·一五 | 上午一〇·二七 |
| 頭道溝 | 到 | 下午六·二五 | 上午一〇·四七 |

# 美國顧爾機器廠

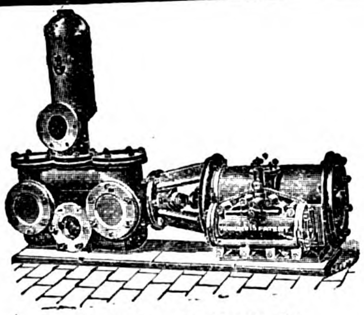


本廠開設已久爲中外各國所馳名專造各種大小抽水幫浦其三角抽水機爲尋常各廠家所最爲合用之機尙有如保險公司所用最爲靈巧便利之轉動抽水機此項機器甚爲輕便備爲消防之用尤爲合宜故凡保險公司俱有備置因其得輕便之利也其餘如自來水廠船廠各機器廠並礦井內外所應用之大小各式抽水機器無不俱全本廠係專造各項抽水幫浦故比他家式樣更多製造尤爲完善凡中外各國之賜顧者悉知本廠機件之精良造具之美備也欲知詳細情形請移玉至本行接洽可也

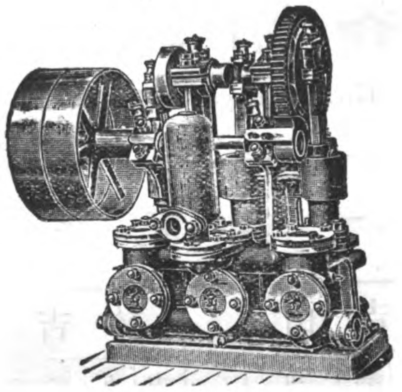


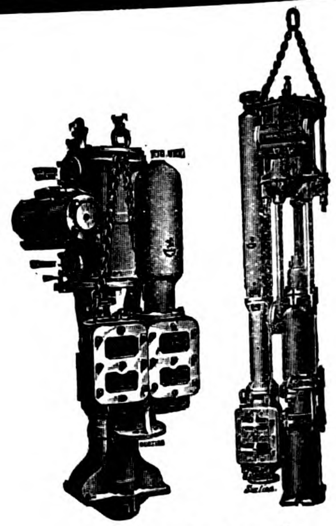
中國經售處上海圓明園路四號協隆 慎昌洋行

The Goulds Manufacturing Co.

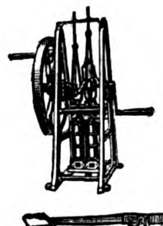


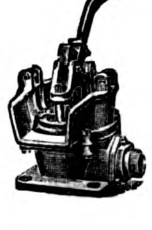
普通汽力抽水機





下垂抽水機
煤船煤礦所用





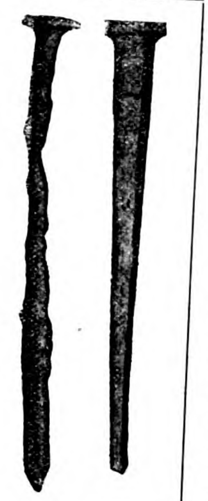
本公司製造各種抽水機專備工商各界採用各式全備不論使用何項動力如人工汽機皮帶風車水電各力之類均能適用如蒙函詢卽將東方目錄寄奉　英國華亨頓城

伊凡斯公司謹啟

Joseph Evans & Sons

# 美國展輾冶鐵工廠廣告

The American Rolling Mill Co.



新舊兩鐵釘之比較方形熟鐵釘可用三十八年鋼鐵釘可用十一年

Agents for China
Chinese American Co.
1 A Jinkee Road, Shanghai

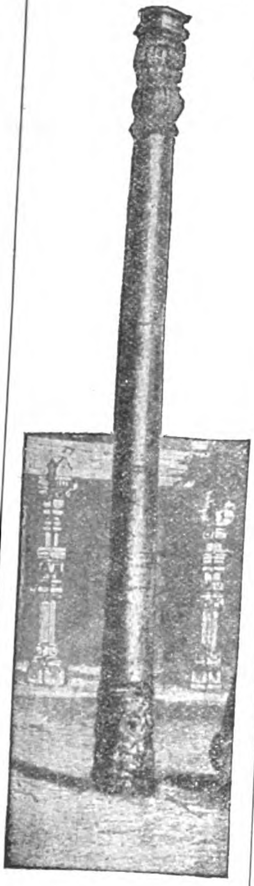
ARMCO IRON

Agents for Philippine Islands
American Hardware & Plumbing Co.
Manila, P. I.

屋頂及屋旁引傳電氣之奥姆可縐紋鐵件

本工廠稟准國家立案爲萬國鐵廠所推許因所鑄之奧姆可鐵潔淨耐用夫鐵之爲物厥用甚大盡人皆知唯提煉不淨銹爛極易蓋異性之金類雜在一處一受空氣之潮濕即發動電流化合力而銹爛乃起與電瓶同一理也故雜質去淨銹生自緩又製造各鐵條鐵板時若質地不勻及有微孔等弊亦爲生銹之原本公司製煉各種鐵器提煉既極純淨製造又極精美稍有成分不足體質不淨者均摒棄重行提煉終以試驗及格爲度絕無苟且之弊本公司之宗旨專務精美不競競以出貨之多爲勝也圖中所載之鐵柱現在印度台里省係鑄於二千八百年以前考其所以能歷如許之久者亦不過質地純淨而已本公司即本此意并經各專門冶金工師悉心研究得完美之製造方法各界賜顧者請認明三角式商標决不致誤

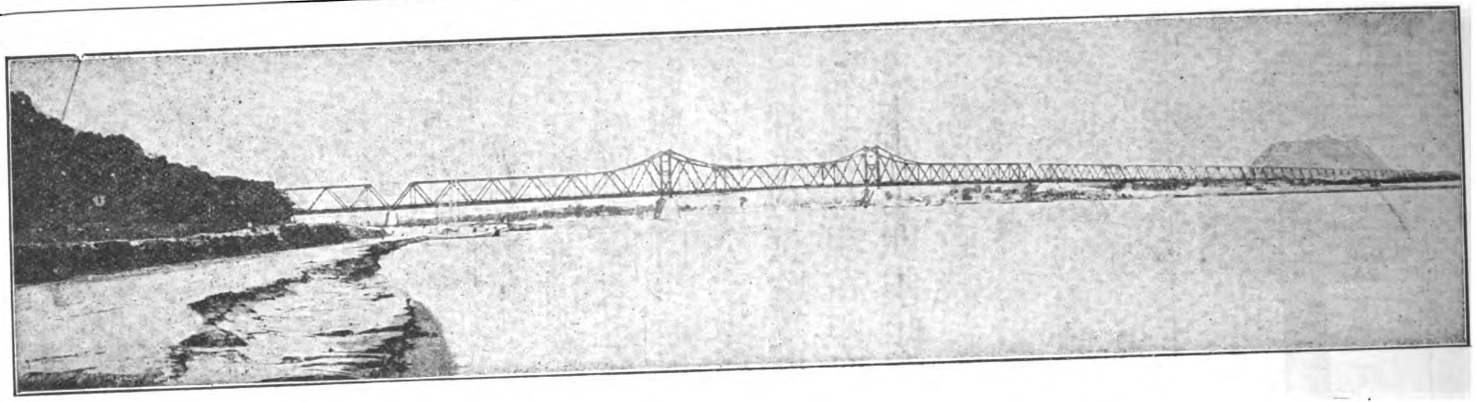
本廠開設美國哇哈哇省
中國上海經理華美公司仁記路一號
得律風一千九百七十一號



此圖乃印度國特而希之大鐵柱建於紀元前九百年爲純鐵所鑄之柱

奥姆可縐紋鐵溝大道鐵路陰溝最適用貨眞耐用欲知目錄請來信索取可也

# 津浦鐵路



## 津浦鐵路局改訂特別通車時刻廣告

本路特別通車上下開到時刻現經改訂與京奉膠濟滬甯等路客車上下銜接自本年十二月一日實行玆將改訂時刻暨各路銜接時刻開列如左

### 下行車

京奉路由瀋陽來之通車星期六日上午十鐘三十五分到天津東站
本路特別通車星期六日上午十一鐘二十分由天津東站開
京奉路由北京來之快車每日上午十一鐘二十五分到天津總站
本路特別通車星期六日上午十一鐘四十八分由天津總站開
膠濟路由青島來之快車每日下午五鐘五十九分到濟南
本路特別通車星期六日下午八鐘十二分由濟南開星期日下午一鐘十三分到浦口
滬甯路開往上海之快車星期日下午二鐘三十五分由南京開是日下午八鐘二十分到上海

### 上行車

滬甯路快車星期一日上午七鐘十分由上海開十二鐘三十分到南京
本路特別通車星期一日下午一鐘四十五分由浦口開星期二日上午六鐘四十分到濟南
膠濟路開往青島之快車每日上午八鐘由濟南開
本路特別通車星期二日下午二鐘三十三分到天津總站二鐘五十三分到天津東站
京奉路開往北京之快車每日下午三鐘四十五分由天津東站開其開往瀋陽之通車星期三日上午一鐘二十五分由天津東站開

### 特別注意

客商星期六日由京來津換乘本路特別通車南行者務請在總站過車勿到東站以免趕車不及

再客商星期六日上午八鐘三十分由北京起程星期日下午八鐘二十分即到上海其由上海北行者星期一日上午七鐘十分起程星期二日下午六鐘五十五分即到北京每次需時不足三十六鐘洵屬最捷之徑順此附告

Chinese Government Railways—Tientsin-Pukow Line

Hongkong & Whampoa Dock Co., Ltd.

## 香港黃埔船澳有限公司廣告

本公司承接製造各種機器鐵路火車橋梁河海明暗輪船拖船淺水火船載客運貨大小快捷毛打輪船舉凡一切水陸起重器機爐鑊鎔鑄銅鐵器具電鍍等等工程並常有大單銅鐵螺絲角鐵鋼板鐵板等料躉賣加以本公司置有大石澳六所旱排二座以便大小船艦入澳之用洵鉅製也

諸君光顧凡有船隻裝修無論大小工程莫不應期完備庶不妄費時日又且工精料美價亦相宜如蒙惠顧請問總司理人 R. M. DYER可也

茲將各澳地址尺寸開列於後

| 澳名 | 澳底長 | 澳口闊 | 水深 |
|---|---|---|---|
| 九龍第一號澳 | 七百尺 | 面八十六尺 底七十尺 | 三十尺 |
| 九龍第二號澳 | 三百七十一尺 | 七十四尺 | 十八尺六寸 |
| 九龍第三號澳 | 二百六十四尺 | 四十九尺三寸 | 十四尺 |
| 九龍第一號旱排 | 二百四十尺 | 六十尺 | 十四尺 |
| 九龍第二號旱排 | 二百二十尺 | 六十尺 | 十二尺 |
| 深水浦澳 | 四百六十六尺 | 八十五尺六寸 | 二十尺 |
| 香港仔第一號澳 | 四百三十尺 | 八十四尺 | 二十三尺 |
| 香港仔第二號澳 | 三百三十三尺 | 六十四尺 | 十六尺 |

本公司通電處乃用 MANIFESTO HONGKONG

香港寫字樓電話第二十號

本廠寫字樓電話第十三號K

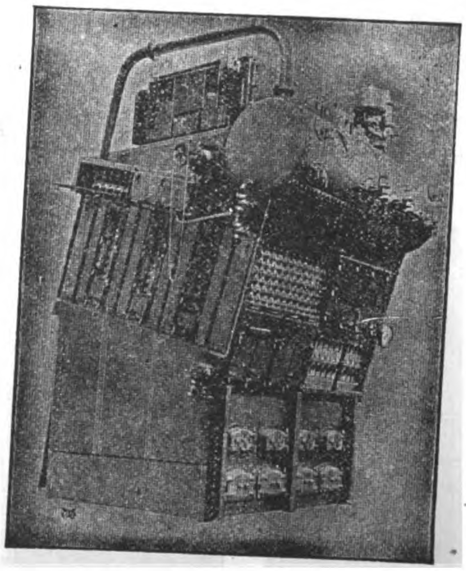
呂宋代理處 FINDLAY & CO., MANILA, P. I.

## 拔柏葛魏闍司有限公司

Babcock & Wilcox, Ltd.

## 製造特別水筒鍋鑪

本公司陸地所用之鍋爐與加增熱力機器及最新自行燃煤之帶鍊機器係屬相連用之於電燈紡織麵粉造紙織呢兵工造幣礦務水泥自來水等廠最爲合宜



航海用之汽鍋圖

本公司專造加增熱力機器自行燃煤之帶鍊機器蓄熱機器電力起重機器起卸煤之機器鋼質烟囪及輪船軍艦所用之鍋爐等

公司之中國總辦事處在上海四川路一百零三號

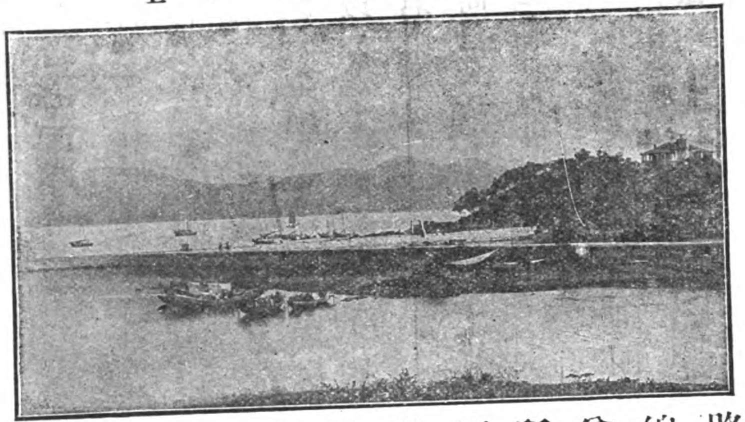
製造廠設在英德法美等國

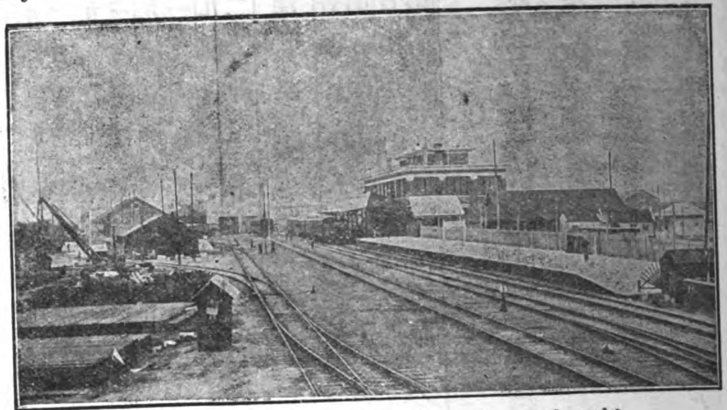
# 廣九鐵路

Canton-Kowloon Railway

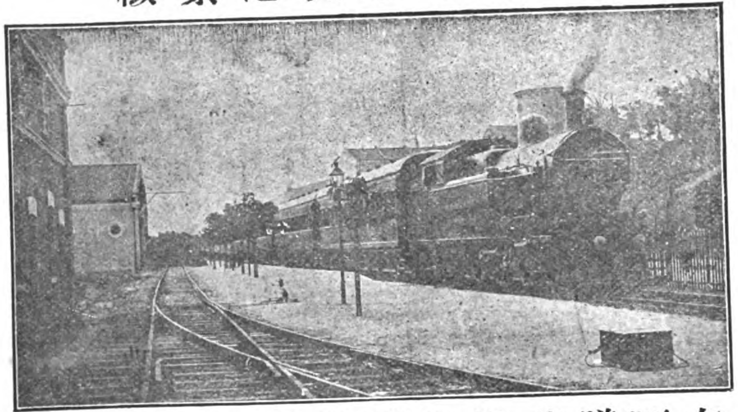
下列乃華段圖景該段八十九英里

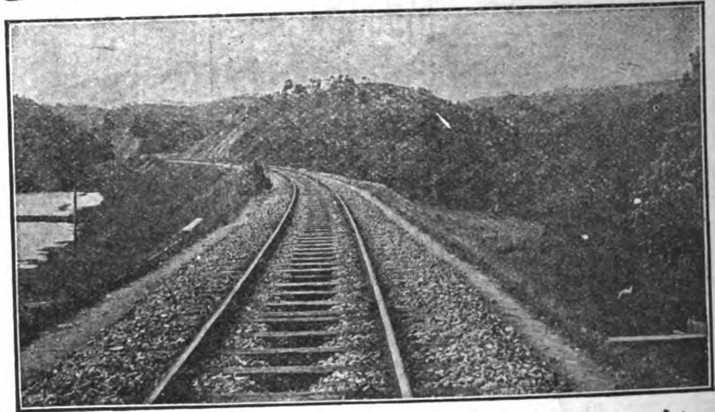
下列乃英段圖景該段二十二英里



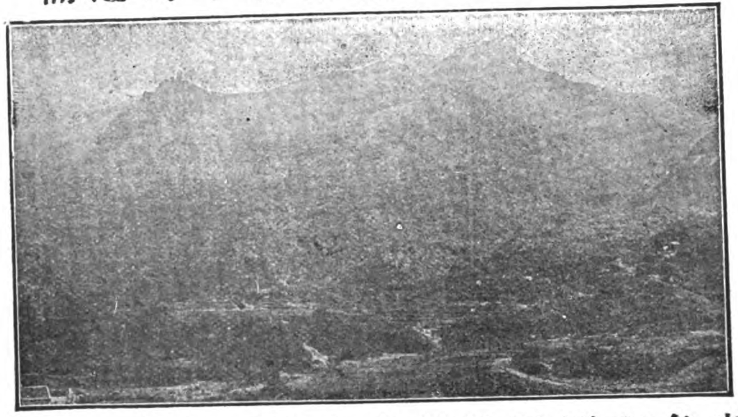


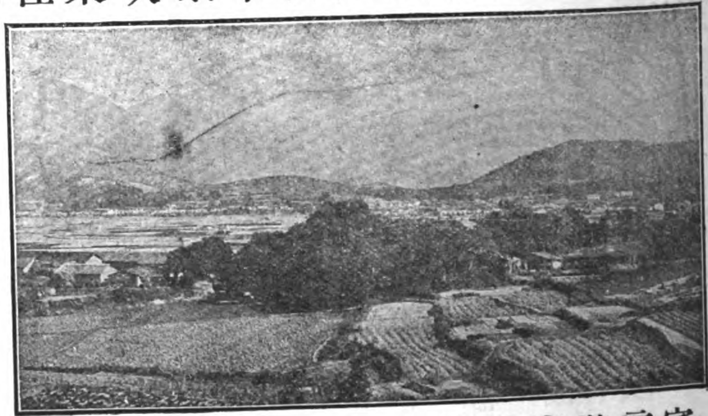
廣州香港間最捷最廉之路線所兼經各處之景緻



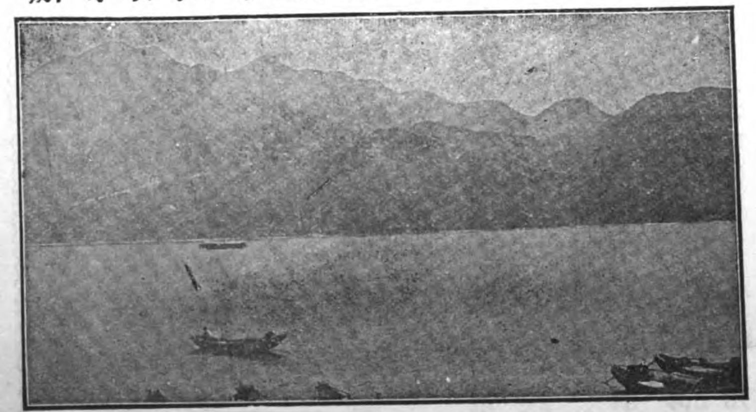


每日省港有直通快車貳次來往並有西膳茶點以備搭客不時之需





富商遊客搭快車可即日來回在港在省各有四點餘鐘之久儘可從容專辦



謹將本年夏天時刻表開列於下

香港開
上午六點四十五分快車
上午十一點十五分
上午十二點五十五分

廣東到
上午十點四十分快車
下午六點十分
上午四點四十分快車

廣東開
下午七點快車
上午八點三十分
上午十二點快車
下午四點三十分快車

香港到
上午十點四十分快車
下午四點十四分
下午三點五十三分快車
下午七點五十三分快車

並備有專車租賃車費從廉如欲知詳細者請看告白或問省城及香港鐵路總局可也

# 英國康模造車公司

Commercial Cars, Ltd., Luton, England

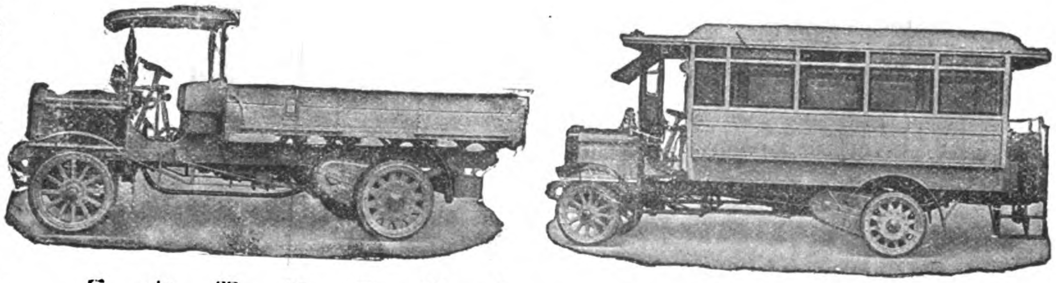
格言曰觀運輸機關之隆替足覘以國家之盛衰本公司專造工藝界及公家所用車輛工料堅實精良無比取價低廉如貨車灑水車救火車客車等均可

康模牌

"COMMER" CAR.
REG. TRADE MARK.

車輛

按式定造必能合意所裝油機燃燒煤油或汽油在東方應用最爲便適本公司總廠在英國勒頓城內英國康模造車公司謹啟



此種車輛裝有汽油機大小分爲十四號載重一噸至七噸載客十位至三十四位機器有二十至一百馬力



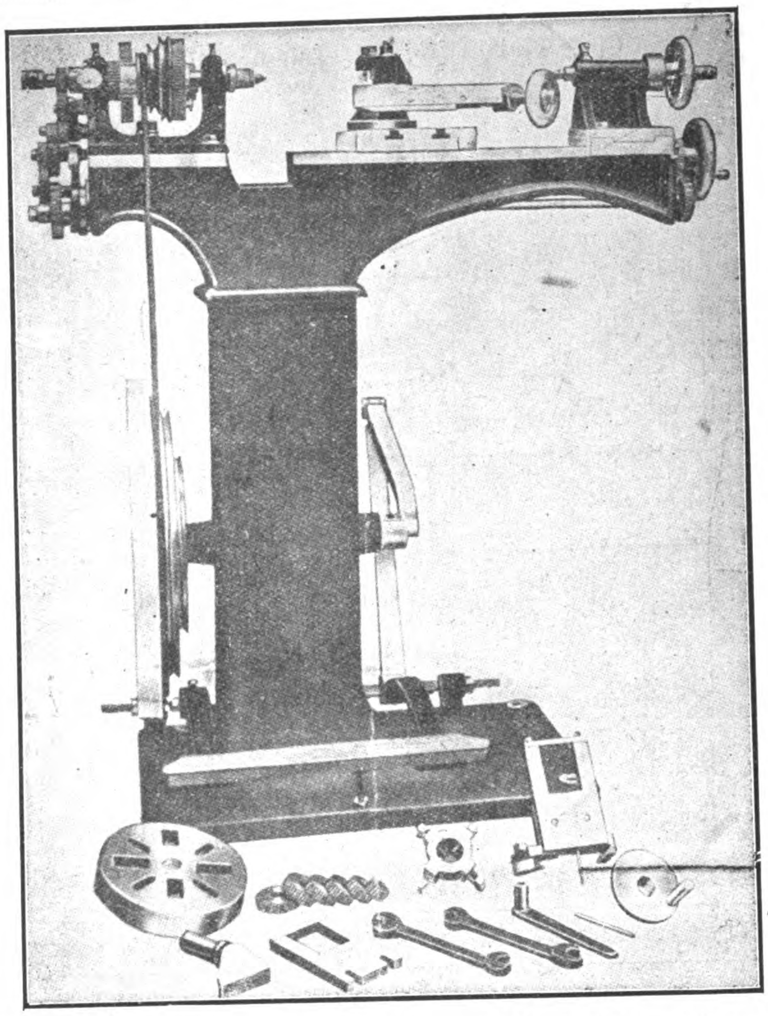
# 英國來大滙有限公司廣告

F. Reddaway & Co., Ltd.

本公司獨製駱駝牌皮件專製救火皮帶鐵甲皮帶及皮布等件且所製皮件爲水或汽或藥水所不能侵入者本公司叉製造橡皮器俱以供鐵路并工藝廠及開礦工作等處之用若承各界諸君光顧請向經商人詢問駱駝牌可也

總公司及工廠開設英國曼區司得

# 怡和洋行機器房廣告



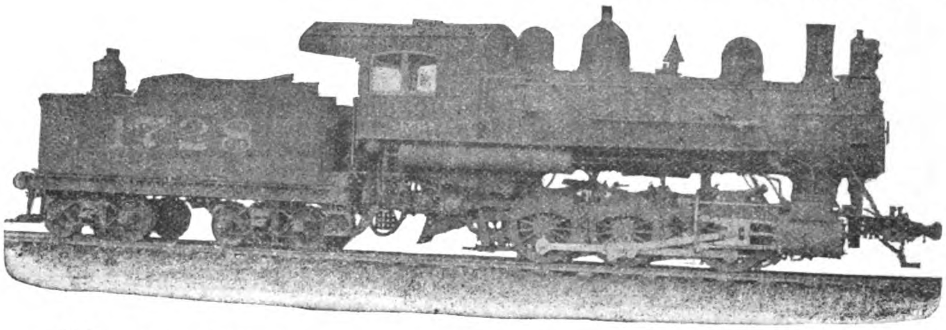
本行分設滬濱數十餘載專辦各種機器如下　鐵軌　車輪　車頭　紡織機　磨麪機　搾油機　碾米機　磚瓦　鋸木牀　造紙機　印書機　鎗礮　製革機　電燈　餅乾　火力引擎　煤氣引擎　火油引擎　鍋爐　發電機　開礦吸水機及馬達引擎等並常備現貨如下
火力引擎　煤氣引擎　立式鍋爐　吸水機　手搖吸水機　大小車床　修機應用各件　淨茶機　紙百　配更　皮帶等其餘一切零件不及詳載倘蒙賜顧無不歡迎定價亦格外克己請至圓明園路本帳房接洽電話一零九六

Jardine, Matheson & Co.

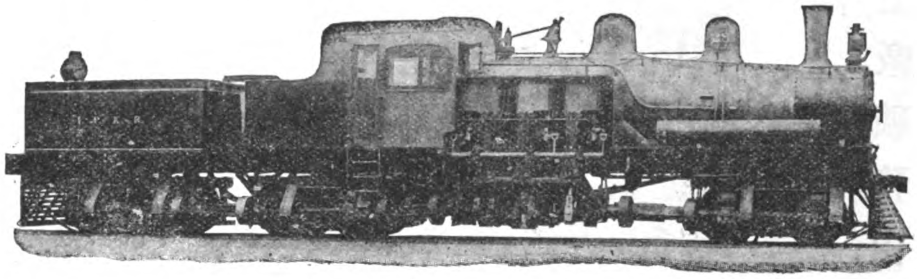
# 賚瑪火車公司

Lima Locomotive Corporation

本公司專造各種火車頭式樣玲瓏質料堅固或用橫桿式或用齒輪式務求輕便靈捷至速率及拖重力尤非尋常者所可比擬



此圖爲本公司代美國南部鐵路所造之十五輛二十寸暨二十六寸轉轍式之火車圖樣



此圖爲本公司代中國京張鐵路所造三輛齒輪式一百噸重之火車圖樣

製造火車不獨求其堅固而且取其靈活本公司各種出品久爲東西各國所推許近年更大加擴張所聘工師均爲歐美著名專家所用機器亦均係新式以故所造各種車頭既能堅固復靈活而穩妥不惟於康莊平坦之大軌道能行止自如即以行駛於山嶺曲徑之小軌道亦能旋轉如意且特製齒輪式之拖重車其重力能拖十噸至一百五十噸其餘花樣繁多均載B字樣本中欲閱者來函索取當卽寄奉

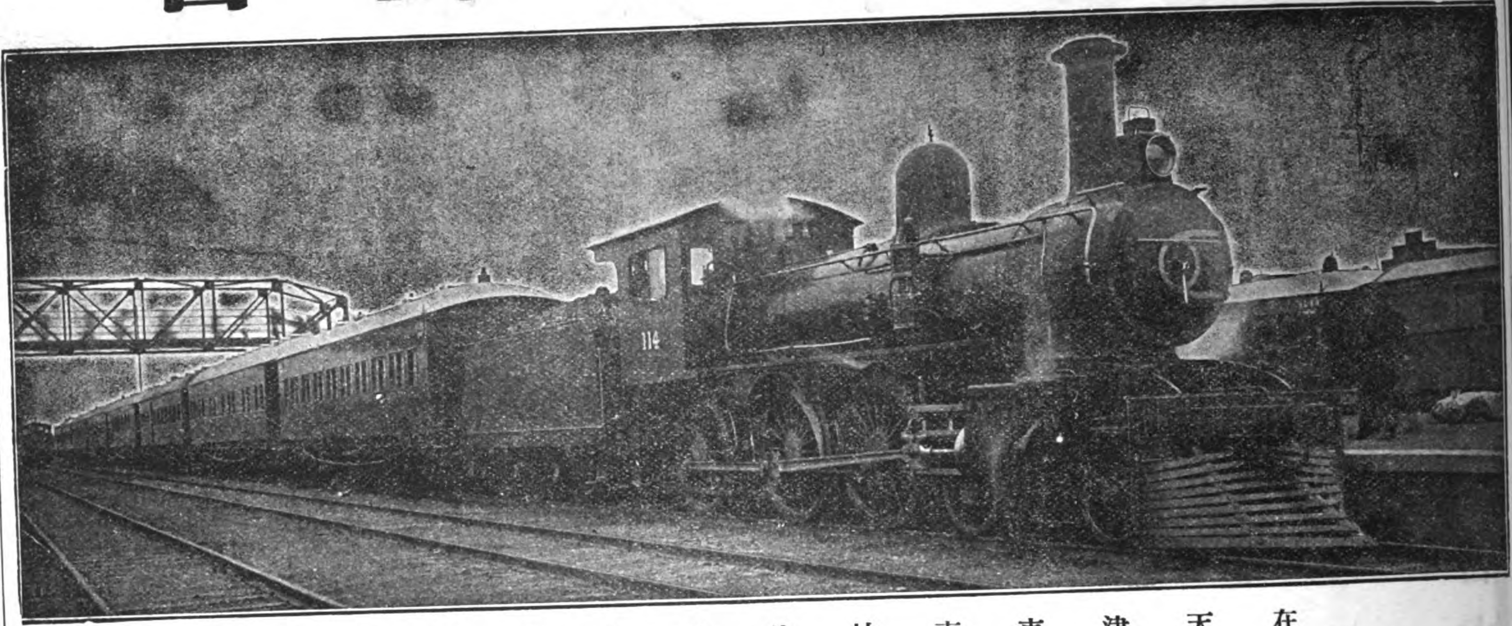
總發行美國哇亥俄省賚瑪城

分售處中國 香港 上海 廣東 天津 新旗昌洋行

京奉鐵路



# 京奉鐵路廣告



在天津東車站停放之床位通車

啓者本路路綫係與附近各路互相聯絡東則接連南滿路可達歐洲南則接連京漢路可達長江一帶商埠由京漢路中心點并可達至正太路之太原府道清路之開封府汴洛路之河南府北則與京張路綫相連可達至萬里長城四面貫通無遠弗屆本路綫所經名勝如北京

北京車站

通車頭等睡房

瀋陽之皇陵殿宇天津之北方商務總匯唐山之工廠礦務山海關之萬里長城牛莊之南滿洲商埠俱屬繁盛之區足供遊覽至京瀋直達通車每星期來往一次備有飯車睡房精潔適意以便行旅而廣招徠倘蒙

光顧毋任歡迎之至特此佈告

Chinese Government Railways of North China

# 美國紐約克美孚油行廣告

The Standard Oil Company of New York

本行所出之**鎖可聶瀝青油**爲生瀝青油由格致術所製成如
欲引長其效用黏合其物質柔固其原料以及天氣溫熱度之容納
無不隨心所願
**鎖可聶瀝青油**可用於任何堅硬之物不加他種之油亦合於用
下列之各處均可用此**鎖可聶瀝青油**
建築永久之道路　屋頂水路工廠地板拍球圍場　水涵管洞
用於鐵路車結處電桿電柱等處　包鋼質建築物及溝管等物
**鎖可聶瀝青油**可用於法侖表熱二百二十一度之融點故於
最熱之天氣亦合用適度也**鎖可聶瀝青油**非試用之物乃合衆
國多年實用之油功效最著之物品也
欲知詳細請函達上海五馬路十一十二號
美國紐約克美孚油行光油部可也

## 司帝反生公司廣告

W. F. Stevenson & Co., Ltd.

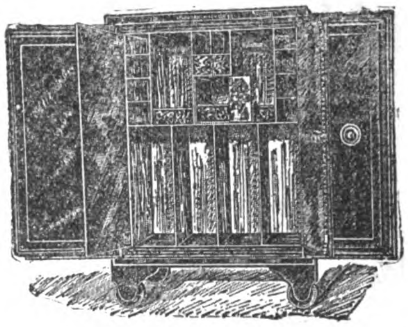
小呂宋　伊羅伊羅　塞步

本公司駐小呂宋單獨經理白弗羅匹次公司之農業機器克老司來弟兄公司之煤汽機及油汽機奧司丁製廠之造路機器威廉滑脫公司之航海機器及水鍋等

合羣愛司倍司督司東方經理處

## 晉隆洋行廣告

Herring Hall Marvin Safes. Mustard & Co.



赫令好馬文保險箱爲上海所罕見目下陳列於本公司之售賣間若欲知詳細價目請來函索取目錄幷價格表爲荷本公司在中國爲單獨經售此項保險箱之公司

公司開設上海圓明園路二十二號

電話第十五號

## 馬爾思公司

A. J. Morse & Son Diving Apparatus.

本公司創設於紀元一千八百三十七年專製下水應用之器俱若欲定製無不立辦

公司開設美國鮑思敦高街第二百二十一號

經理處小呂宋弗蘭克司決浪克

## 希米脫加熱機關車蒸機公司廣告

The Schmidt Superheater For Locomotives.

The Schmidt Superheating Co., Ltd.

本公司所製之加熱蒸機中有四百九十多條之鐵道用二萬八千五百架機關車之加熱蒸機均爲倫敦及西北鐵路公司所審定若承購買請向上海經理處瑞記洋行定購可也

公司開設英國韋司民司得維多利亞街二十八號

# 上海耶松機器船廠有限公司

The Shanghai Dock & Engineering Co., Ltd.

電報行名 Telegraphic Address and Code

"FARNHAM"

A. B. C. 4th and 5th Editions
A.-1 Watkin's, Scott's
Western Union
and
Engineering.

密碼本用

總公司

在百老匯路廿六號

德律風第七號

Address.

電話號碼 Telephone Number

| | |
|---|---|
| 大班處 | 七五七號 |
| 書記處 | 一八七號 |
| 總辦處 | 六七八號 |
| 幫辦處 | 一八八七號 |
| 總寫字間 | 七號 |
| 浦東寫字間 | 二三號 |
| 浦東機器間 | 一二二七號 |

祥生機器廠造船所

本廠所造輪船模型英一千九百零四年在美國聖魯易賽會得賞金牌

The Model exhibited at St. Louis Exposition and awarded the Gold Medal in 1904.

熱水汽管司即丁火爐各種式樣俱全

All Kind of Steam Heating Institutions.

本廠共有船塢五處長自三百五十五尺至五百三十二尺船塢口闊自五十三尺至七十七尺深十六尺至廿四尺 本廠價格可稱東方第一低廉 本廠船塢工場共有基地四百四十八畝佔有水面一英里半之長 碼頭方船均全以便各輪船修理時可以靠傍小輪修理並可拖至岸上各船塢均備有起重吊機可受六十五噸之重物 各造船處及工場均裝用電燈並有活動吊機可吊六十噸重之物並有最新式機器應用物件機器間及工場均裝輕便鐵道 本廠備有水鬼多名撈船器具及吊機浮船一遇招呼隨時應命無論海船江輪明輪暗輪拖駁小輪機器駁船挖泥船吊機浮船以及碼頭方船等如蒙詢問價目無不從速答覆 各種修理及拆舊換新等本廠均可承接並能迅速從事 本廠並有船上岸上所用機器爐子開礦機抽水機以及各種機件電氣自來火火油司丁各種機器俱全如蒙賜顧請即駕臨或函件接洽均當歡迎也

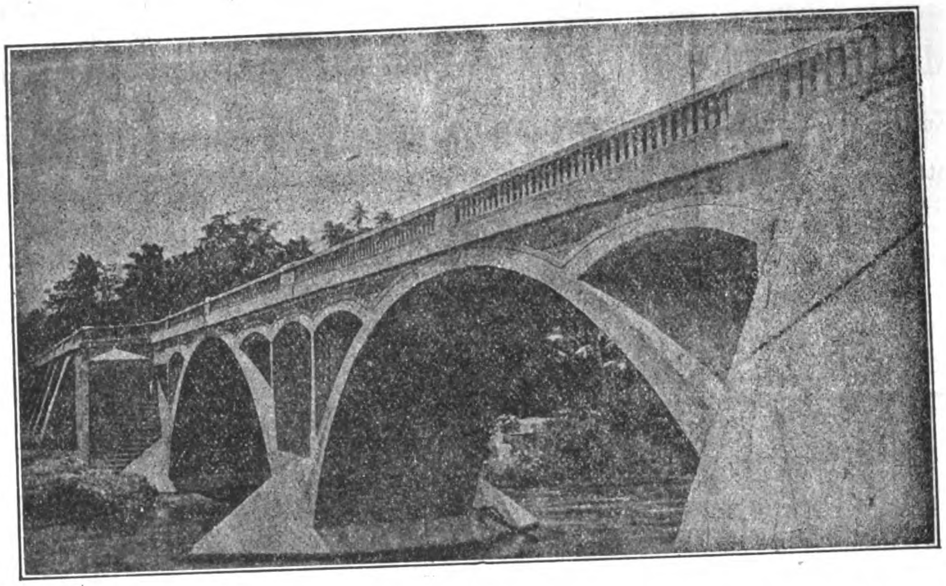
# 青洲英泥

Green Island Cement Company, Ltd.

燒青泥磚

大小明暗瓦溝

水斗等器



花階磚

大階磚

火爐磚及泥

亞路卑扒拉波歷握橋用二千五百桶青洲英泥而建成

本行在別埠代理處

上海支行

日本支行

天津支行

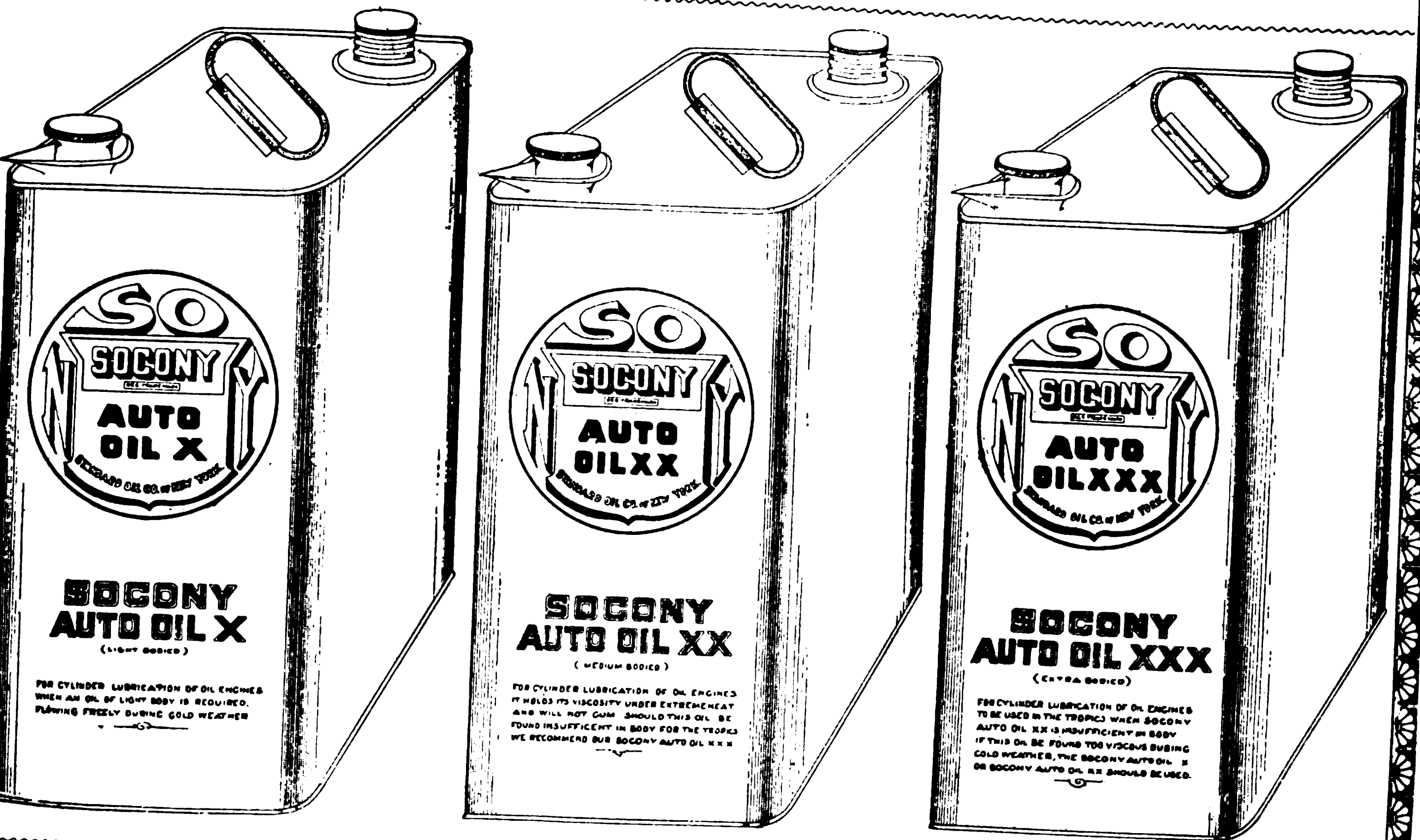
代理分銷處

架剌吉打 端拿摩利臣公司
新加坡 士沼片民
長口及漢口壹帶渣甸洋行
仰光 希活
孟米 士片拿公司
庇能 列公司
中國海岸及臺灣渣甸洋行

非律賓羣島全權代辦人小呂宋威廉晏打臣公司

# 美孚油行廣告

Socony Auto Oils.　　Standard Oil Co. Lubricating Oil Department.




本行所出鎖可聶自轉油乃由格致考驗鍊成特供馬達家所需用且此油精緻能使馬達機器運動合度且可經久省用而免磨擦之弊蓋馬達機器若遭磨擦較用油爲費所謂機器之馬力者即殺力也不可荒廢本行之鎖可聶自轉油分三種一種爲一愛克司之油用於輕小之圓油機上於寒冷之天氣必能自由流行也一種爲兩愛克司之油亦用於圓油機上適用於盛暑之時蓋凝結合度不致汚抹倘此油因天時之故不適於用可用三愛克司之油一種爲三愛克司之油亦用於圓油機上特備爲熱地所用即兩愛克司油不足即以此油代之若承各界諸君不棄欲知詳細請來函索取說明書即汽車油之指南本行專做光油遐邇聞名以上三種油桶祈認明庶不致誤

美國紐約克美孚油行光油部敬啓

# 新旗昌洋行

本行佈設英京神戶廣州香港上海天津紐約等處專辦出入口貨代理船務及抽佣經理人

香港書信箱號數第壹百三十一號卑字
上海郵政局信箱第八十四號
各枝行掛號電報碼用旗昌二字

## 本行總司理各公司列下

● 非律賓輪船有限公司
● 維新織造有限公司
● 廣州省城地產有限公司
● 永安人壽保險有限公司
● 中呂輪船有限公司
● 勢力電燈有限公司
● 青洲英坭有限公司
● 香港麻纜織造有限公司
● 均益按揭有限公司

## 代理各公司列下

● 厘拉仁士洋面保險有限公司
● 大洋海面保險有限公司
● 洒水海及火燭保險有限公司
● 英北及商務保險公司
● 羅天仁保險有限公司
● 煜舍燕梳有限公司
● 北美燕梳公司
● 上洋軟菓及紙料有限公司
● 美亞輪船公司
● 美滿航務公司
● 祁連航務有限公司
● 香港電車有限公司
● 楊子燕梳有限公司
● 地球洋面保險有限公司
● 大洋意外保險有限公司

## 上海英商新旗昌洋行機器處廣告

本行樓子房現設江西路六號電話三四八七號

本行經理各種機器如紡織碾米榨油磨麵造紙開礦墾荒抽水挖坭大小火輪全副引擎鍋爐及火車頭客車貨車鐵路材料並自來水一切物件其餘鋸木車鑽刨床各式大小引擎鍋爐及磨電機發動機煤氣引擎發煤氣機以及得律風電燈電氣應用一切另件等具色色俱全均係外洋著名廠家特別精造新式玲瓏堅固但各項名目繁多未便盡載倘承賜顧或蒙函詢當即竭誠詳細奉答價亦格外克己以廣招徠尚祈惠臨方知言之不虛也

## 在中國全權代表各公司列下

滅隨路城火車工廠
澳地士依里威滔公司
波路深孖汽喉公司
抛亞瓦斯合股有限公司
抛亞不厘有限公司
李孖普鐵廠
倫深末禪及制花利有限公司
盧爹士麽滔有限公司
船主琴實使順有限公司
所利雲機器公司
爲拉列地有限公司
華臣製造公司
和蛙連毛滔工廠

裝鐵路燈工廠
壓活公司
占士科士打有限公司
占士提邊士公司
立可父子公司
可夫文製造公司
贊鶴建臣父子有限公司
耳昔則臣父子有限公司
精建兄弟有限公司
奇布尼及則給士製造公司
廉孖車頭及機器公司
文寧麥士謂及摩公司
妙千斤塵不歷其滔公司

美國布魯亞公司
美國鋼線公司
大英靴路士比電線纜有限公司
班尼士製造公司
比厘路公司
表花盧不歷鞭公司
表花盧士派士厘公司
布律端父子公司
插父子鎖鑰與銀箱有限公司
地吐律滔路公司
的有限公司
贊的建臣公司
胡路扶公司

Shewan, Tomes & Company

# 瑞生洋行

設分行在漢口天津北京等處

本行開設在華歷有年所承蒙 官商訂購各種機器或全廠或零售無不價廉物美屢承 嘉許遐邇皆知凡官商諸公購辦機器務祈惠臨 敝行 估開價目繪呈圖說格外克己上海漢口兩處另設機器陳列所陳列各種最新式樣機器及五金器具鋼地軸皮帶輪掛脚等以備諸公駕臨觀覽特此佈告

上海瑞生洋行謹白

Shanghai Machine Company

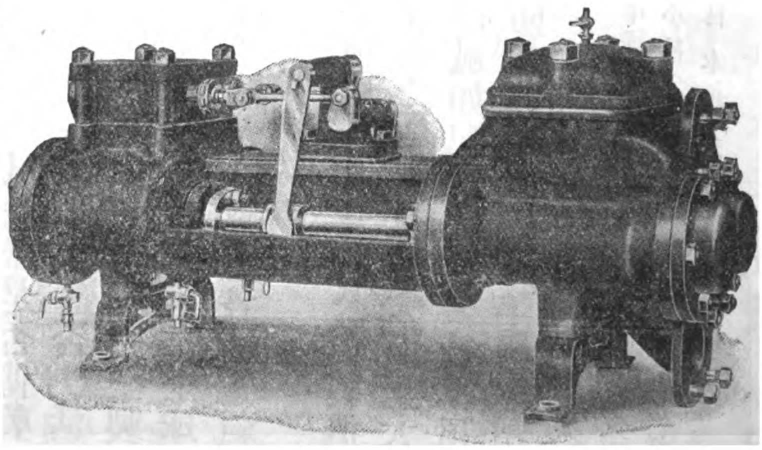
# 魏廷敦起水機器有限公司

Worthington Pump Company, Limited.

本公司起水機器亦在各國著名賽會得有金牌

本公司亦有製造廠在以下之國

英國 法國 美國 澳國 德國 印度國



本公司亦有辦事處在以下載明之各國

比利時 南亞斐利加 坎拿大 澳大利亞 中國 葡萄牙 墨西哥 巴西國 俄羅斯 阿珍甸 西班牙 義大利

中國總辦事處在上海九江路第三號

# 美國派愛而車頭電燈公司告白

Pyle-National Co.

## 下圖表明用二萬二千支光派愛而車頭電燈之功用

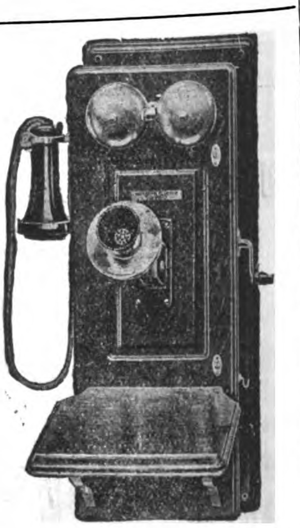
此圖的係攝自美國鐵路車站其攝影之地點相去

車頭有半英里之遙足徵派愛而燈之功用非小

派愛而燈能發有力明亮之光可使車頭司機者之視線能達半里之外且使其能瞭視一切可避危機派愛而燈之功用上已略言之矣總之人咸樂用此種燈因知其無美不臻也

# 西方電氣公司廣告

The Western Electric Co.

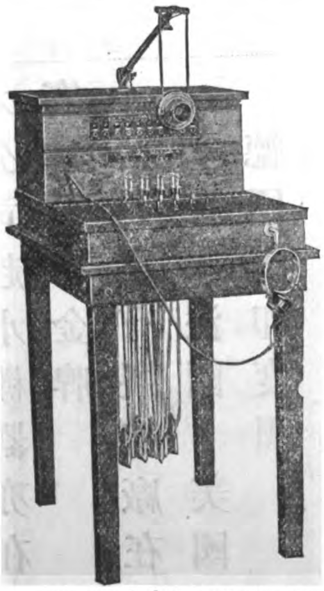


第一三一七號磁氣發電機德律風

若欲研究貴處德律風機器是否傳聲清淅必須先看所用之各種器俱有否　活司得商標之牌號是否爲本公司所完全製造者本公司所製電氣器俱完美可靠全球馳名且爲世界最老最大之製造各種電氣器俱之製造廠

且德律風各種機件亦爲本公司製造物品之一小自私家之德律風起大而至大城內全體之德律風如配電石板裝德律風家所用之配件防護俱線纜線件手器隔電俱等物件

中國經理處上海黃浦灘四號西方電氣公司
小呂宋經理處愛令加格令加洋行
日本經理東京日本電氣公司



第一八〇〇號分段配電石板

"SAVE TIME AND FREIGHT"
"TELEPHONE OUR NEAREST HOUSE"

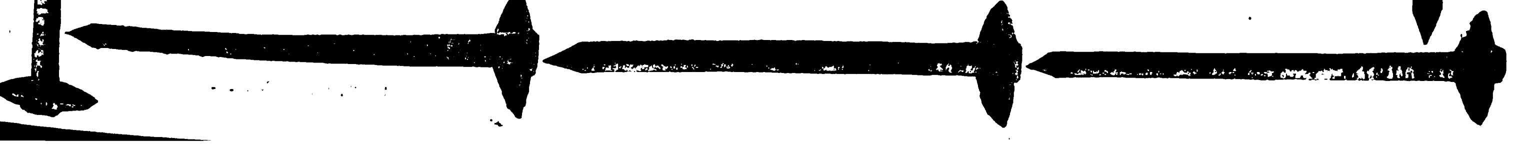
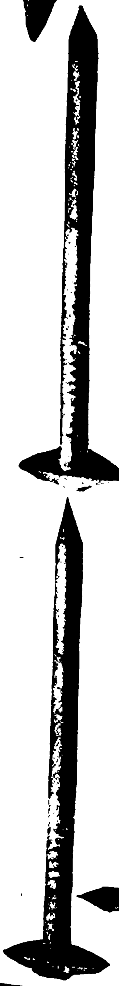
# 正太鐵路客車時刻表
The Cheng-Tai Railway

## 上行各車

| 站名 | 價目 頭等 元 | 頭等 角 | 二等 元 | 二等 角 | 三等 元 | 三等 角 | 慢車 開 點 | 慢車 開 分 | 客貨車 開 點 | 客貨車 開 分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 石家莊 | | | | | | | 七 | 〇三 | 七 | 三十 |
| 大郭村 | | 五 | | 三 | | 二 | 七 | 十六 | 七 | 四五 |
| 獲鹿縣 | | 九 | | 五 | | 三 | 七 | 三二 | 八 | 〇三 |
| 頭泉 | 一 | 二 | | 七 | | 四 | 七 | 五一 | 八 | 二三 |
| 白王莊 | 一 | 五 | | 八 | | 五 | 八 | 十一 | 八 | 四六 |
| 五里鋪 | 一 | 七 | 一 | | | 六 | 八 | 二一 | 八 | 五八 |
| 微水 | 二 | 一 | 一 | 一 | | 七 | 八 | 三六 | 九 | 十五 |
| 南横口 | 二 | 三 | 一 | 三 | | 八 | 八 | 四九 | 九 | 二九 |
| 南張村 | 二 | 五 | 一 | 四 | | 九 | 九 | 〇二 | 九 | 四三 |
| 井陘縣 | 二 | 八 | 一 | 五 | 一 | | 九 | 二五 | 十 | 十五 |
| 北峪 | 三 | 一 | 一 | 七 | 一 | 一 | 九 | 三六 | 十 | 四一 |
| 南峪 | 三 | 三 | 一 | 八 | 一 | 一 | 九 | 四七 | 十 | 五一 |
| 娘子關 | 三 | 六 | 二 | | 一 | 二 | 十 | 十八 | 十一 | 十七 |
| 程家隴底 | 四 | | 二 | 二 | 一 | 四 | 十 | 三四 | 十一 | 三四 |
| 下盤石 | 四 | 五 | 二 | 四 | 一 | 五 | 十 | 五十 | 十一 | 五二 |
| 巖會 | 四 | 八 | 二 | 六 | 一 | 六 | 十一 | 〇四 | 十二 | 十四 |
| 亂流 | 五 | 三 | 二 | 九 | 一 | 八 | 十一 | 二四 | 十二 | 三六 |
| 白羊墅 | 五 | 六 | 三 | 一 | 一 | 九 | 十一 | 三八 | 十二 | 五二 |
| 陽泉 | 五 | 八 | 三 | 二 | 二 | | 十二 | 三七 | 十三 | 二十 |
| 賽魚 | 六 | 二 | 三 | 四 | 二 | 一 | 十二 | 五三 | 十三 | 三七 |
| 坡頭 | 六 | 五 | 三 | 六 | 二 | 二 | 十三 | 〇九 | 十三 | 五四 |
| 測石驛 | 六 | 八 | 三 | 七 | 二 | 三 | 十三 | 三二 | 十四 | 十六 |
| 芹泉 | 七 | 三 | 四 | | 二 | 五 | 十三 | 五六 | 十四 | 四十 |
| 壽陽縣 | 七 | 八 | 四 | 二 | 二 | 六 | 十四 | 十九 | 十五 | 十三 |
| 郭村 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 三二 | 十五 | 二九 |
| 上湖 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 四七 | 十五 | 四六 |
| 盧家莊 | 九 | | 四 | 九 | 三 | | 十五 | 〇三 | 十六 | 十 |
| 段廷 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 十八 | 十六 | 二七 |
| 東趙村 | 九 | 八 | 五 | 三 | 三 | 三 | 十五 | 三四 | 十六 | 四六 |
| 北合流 | 十 | 二 | 五 | 五 | 三 | 四 | 十五 | 四七 | 十七 | 〇三 |
| 榆次縣 | 十 | 五 | 五 | 七 | 三 | 五 | 十六 | 〇九 | 十七 | 三三 |
| 鳴李 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二一 | 十七 | 四七 |
| 北營 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 三三 | 十八 | 〇一 |
| 太原府 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 四五 | 十八 到 | 十五 |

## 下行各車

| 站名 | 價目 頭等 元 | 頭等 角 | 二等 元 | 二等 角 | 三等 元 | 三等 角 | 慢車 開 點 | 慢車 開 分 | 客貨車 開 點 | 客貨車 開 分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 太原府 | | | | | | | 七 | 五三 | 八 | 〇六 |
| 北營 | | 五 | | 三 | | 二 | 八 | 〇七 | 八 | 二一 |
| 鳴李 | | 八 | | 五 | | 三 | 八 | 十九 | 八 | 三四 |
| 榆次縣 | 一 | 二 | | 七 | | 四 | 八 | 四五 | 八 | 五九 |
| 北合流 | 一 | 六 | | 九 | | 六 | 八 | 五九 | 九 | 十四 |
| 東趙村 | 二 | | 一 | 一 | | 七 | 九 | 十三 | 九 | 二九 |
| 段廷 | 二 | 四 | 一 | 三 | | 八 | 九 | 二九 | 九 | 四七 |
| 盧家莊 | 二 | 八 | 一 | 五 | 一 | | 九 | 四五 | 十 | 〇七 |
| 上湖 | 三 | 二 | 一 | 八 | 一 | 一 | 十 | 〇三 | 十 | 二六 |
| 郭村 | 三 | 六 | 二 | | 一 | 二 | 十 | 十九 | 十 | 四三 |
| 壽陽縣 | 四 | | 二 | 二 | 一 | 四 | 十 | 三七 | 十一 | 〇七 |
| 芹泉 | 四 | 四 | 二 | 四 | 一 | 五 | 十 | 五三 | 十一 | 二四 |
| 測石驛 | 四 | 九 | 二 | 七 | 一 | 七 | 十一 | 十三 | 十一 | 四七 |
| 坡頭 | 五 | 二 | 二 | 八 | 一 | 八 | 十一 | 二五 | 十二 | 〇一 |
| 賽魚 | 五 | 六 | 三 | | 一 | 九 | 十一 | 三八 | 十二 | 十九 |
| 陽泉 | 五 | 九 | 三 | 二 | 二 | | 十二 | 三九 | 十三 | 三五 |
| 白羊墅 | 六 | 一 | 三 | 三 | 二 | 一 | 十二 | 五一 | 十三 | 五一 |
| 亂流 | 六 | 四 | 三 | 五 | 二 | 二 | 十三 | 〇四 | 十四 | 〇八 |
| 巖會 | 七 | | 三 | 八 | 二 | 四 | 十三 | 二四 | 十四 | 三七 |
| 下盤石 | 七 | 三 | 四 | | 二 | 五 | 十三 | 四十 | 十四 | 五三 |
| 程家隴底 | 七 | 七 | 四 | 二 | 二 | 六 | 十三 | 五七 | 十五 | 十二 |
| 娘子關 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 十七 | 十五 | 四五 |
| 南峪 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 三三 | 十六 | 〇一 |
| 北峪 | 八 | 七 | 四 | 七 | 二 | 九 | 十四 | 四二 | 十六 | 十二 |
| 井陘縣 | 九 | | 四 | 九 | 三 | | 十四 | 五八 | 十六 | 五五 |
| 南張村 | 九 | 二 | 五 | | 三 | 一 | 十五 | 十 | 十七 | 〇九 |
| 南横口 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 二一 | 十七 | 二一 |
| 微水 | 九 | 七 | 五 | 三 | 三 | 二 | 十五 | 三三 | 十七 | 三五 |
| 五里鋪 | 十 | | 五 | 四 | 三 | 四 | 十五 | 四九 | 十七 | 五五 |
| 白王莊 | 十 | 二 | 五 | 六 | 三 | 四 | 十五 | 五八 | 十八 | 〇六 |
| 頭泉 | 十 | 六 | 五 | 七 | 三 | 六 | 十六 | 十三 | 十八 | 二三 |
| 獲鹿縣 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二八 | 十八 | 五七 |
| 大郭村 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 四十 | 十八 | 五七 |
| 石家莊 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 五一 | 十九 到 | 〇十 |

# 美國鋼鐵出產公司廣告

本公司所出鍍鉾彈簧鐵釘久爲光顧諸君所歡迎蓋以之釘屋頂實較勝於螺釘螺蓋螺圈也且價格又廉此四面之釘圖即本公司之出品長二吋四分之一諸君若購用之則屋頂不滲漏貨物不致損壞且省修理費若欲購者請向上海江西路愛字二十四號門牌可也

THE UNITED STATES STEEL PRODUCTS COMPANY.

## 白老頓製銅公司廣告

The Broughton Copper Co., Ltd.

本公司冶銅製造紫銅黃銅青銅管子滊冶合度堅固異常特供航海及機關車幷種種用具叉製造銅塊銅條銅片及銅版幷製電銅版及夾銅等物

公司開設英國曼區司得

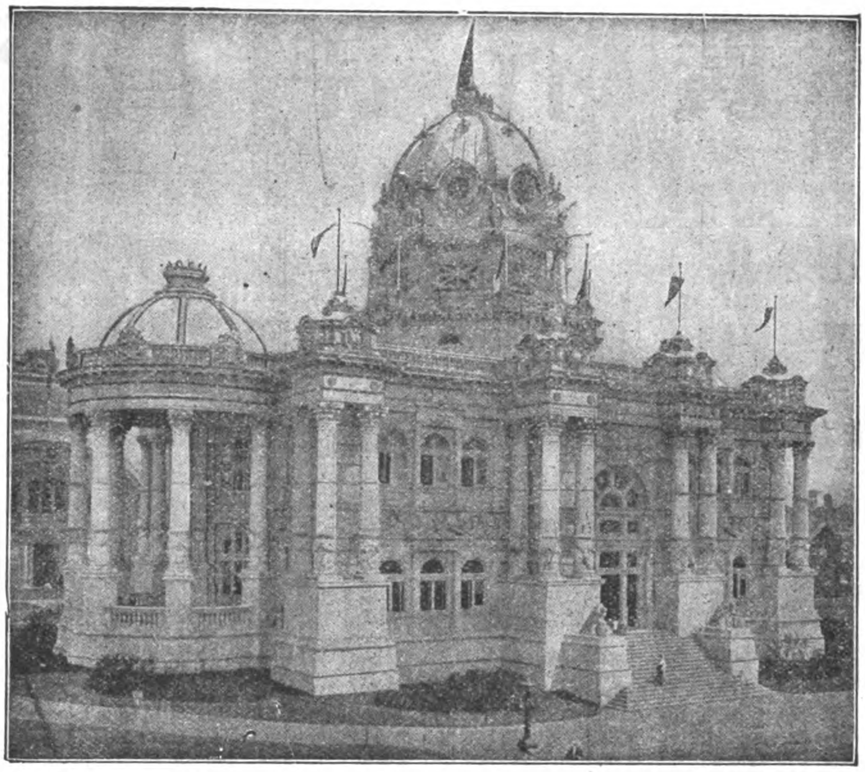
## 安德生公司廣告

Wm. H. Anderson, & Co. Manila, P. I.

本公司專做出口進口貨物幷代客買賣且爲以下所列各公司駐小呂宋之經理司

革林島水門汀泥公司　香港纜索製造公司　立培麥克聶立培公司　司活夫公司　勃老司活克白耳克考蘭特公司　婹磨督公司　大愛地特保險箱光滑油溝渠管火磚火泥及羅勃老特避火之瓦若承各界光顧新通函定購可也

本公司開設小呂宋小打克羅橋



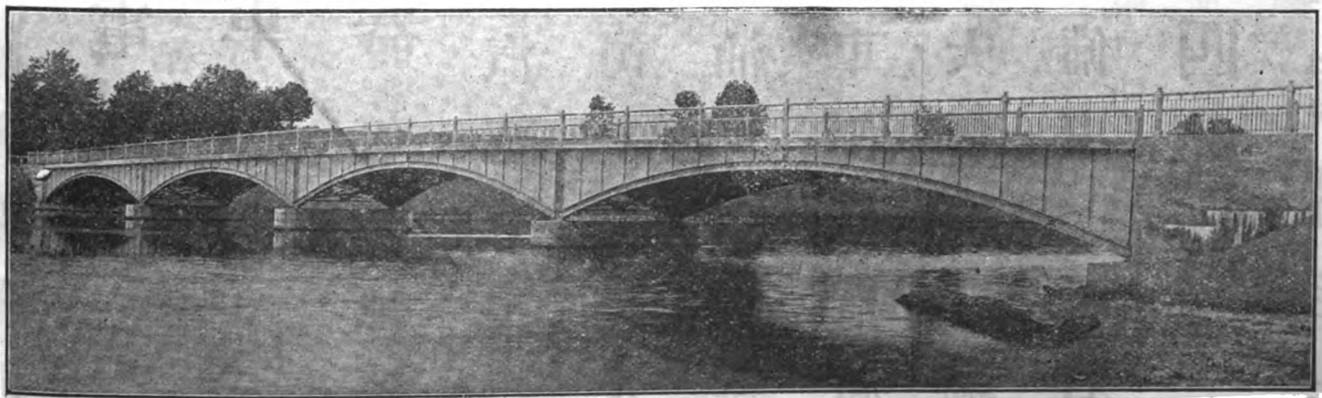
此爲巴蘭夢羅和平宮其工程之堅固久爲世界所稱譽然建築時需用鋼鐵至四百餘噸之鉅者本公司所供給特攝之以供賞鑒

# 美國鋼鐵公司

電碼 "Steelyard." Shanghai

經理處 上海黃浦灘第四號

本公司專辦各種建築鋼鐵品並包造鐵橋鐵房自來水煤氣塔及各種鐵管等物無不全備



此爲美國牛查西省克那基湖哈爾門橋橋共四彎每距九百二十四寸約重二十七萬一千餘噸計用鋼鐵甚夥均屬本公司之出品

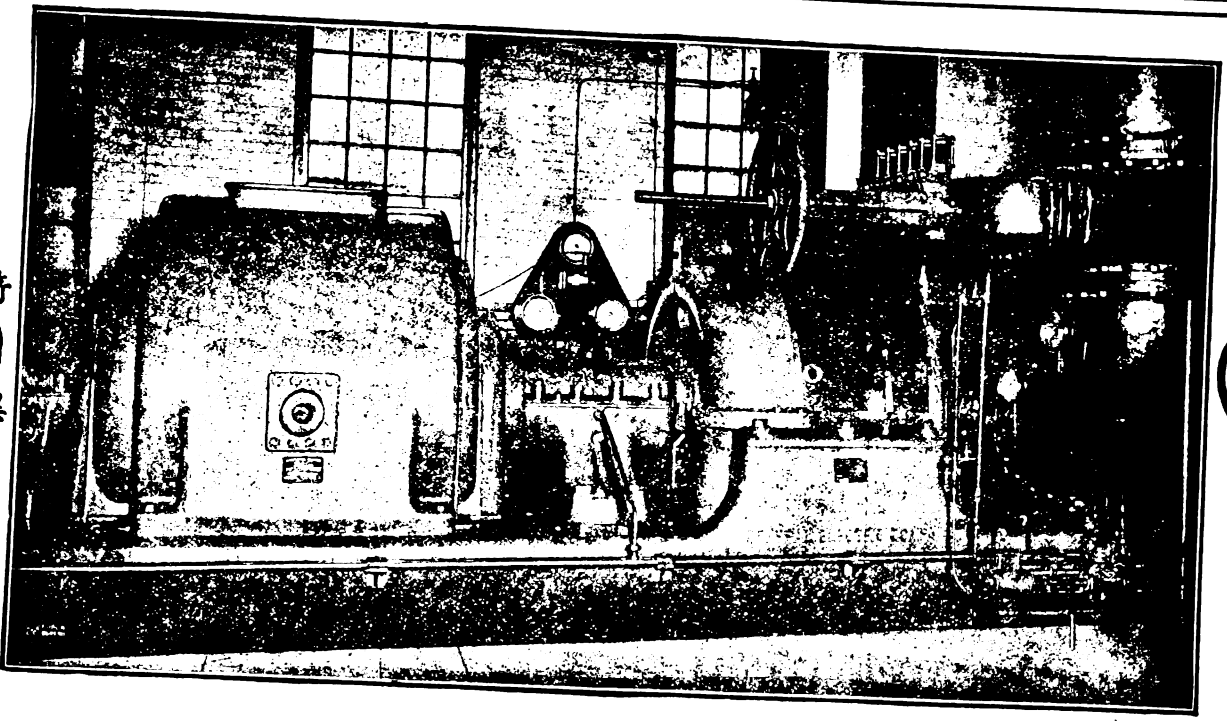
United States Steel Products Company

# 慎昌洋行廣告

Anderson, Meyer & Co., Ltd.

本行設立已久遐邇馳名專辦歐美各國名廠各種機器所有電燈全廠機器及各項電機電話火車鐵路鋼軸鋼鐵各軌各式車牀刨床測量繪圖儀器並各種汽油機器等件無不俱全所有本行經理之　美國愛特生電汽總公司　英國湯浦電機公司　浦特製造火車公司　漢司火車燈公司　施端林電話公司　范落汽油行船機器廠　右孚亞士工程儀器廠　鄧特摩阿車刨機器廠　馬士維爾石棉廠等均係環球著名各大廠中外馳名凡賜顧者均知各名廠機器之完善美備也　諸君欲知詳細請移玉至上海圓明園路四號

中國經售處上海慎昌洋行



奇異商標

B T-H

美國紐約**普通**又名**奇異電汽總公司**為環球獨步世界第一之電汽製造廠與英國著名**湯輔公司**係屬聯號性質近年新發明一種**透頻汽機**係與磨電機直接相連而用便利異常且自七啓羅滑脫推至二萬啓羅滑脫其汽機之工料無不堅固精良而用煤亦省使用極靈即裝置機件亦能省佔地位誠現今電廠**惟一無二之電機也**此機發明後各國爭相購用僉謂較舊式之電機其使用之利鈍相去殆不可以道里計**又新造一種光明省電之曼士達拉絲燈泡**此燈泡乃本廠獨家創造係以數十年之電學經驗參照美國國家頒定規程研究製造而成故質地既極精良燃點尤能經久發行以後風行全球因其能省電力而光線之足備反出各種新式電燈之上因之銷路日廣愈推愈遠洵為**電燈泡中之魁首**又**奇異商標各種電氣風扇**省電多風用久無炙手諸患可免一切危險**又電話機器**式樣玲瓏裝置簡便內地躉購且可代為裝置餘如各種電燈全廠電機家常裝用之電汽器具並礦機鑽石機升降起重各機轉滾提鍊電機傳電器電汽船大小各廠應用之電機幫浦潔淨機貯水所發電機避電測電等機泉水發光機以及各種海陸軍用電光照遠燈電扇轉動等機凡屬於電汽各項大小機件及各樣附屬之件無不完全齊備　賜顧諸君欲知詳細請　駕臨**上海圓明園路**四號本行寫字間接洽無任歡迎此佈

**中國經理處上海慎昌洋行**

General Electric Company

# 麥康韋討萊公司廣告

The McConway & Torley Co. Janney—Penn. Coupler.

邇來新發明之**愛姆西皮近耐**形連結俱爲本公司所輸入及研究所得者此連結俱卽**近耐**形之化身而變成目下最通用之對鎖鎖具及肘節開具爲美國**愛姆西皮**會所推許茲將各所製造者一一說明於後

對鎖者卽既爲輪制所鎖住則鎖條決不向上活動因下端凸出干連結之空處免致脫節也

鎖具者卽以鎖砧置於連頭之內端俟不連結之端向上轉動時卽按節而合若欲解脫此鎖具當於連結時拔去之

肘節開具卽由最相結連之處或略分開之處開放至最大開放處其運行處自由且肘節開放完備

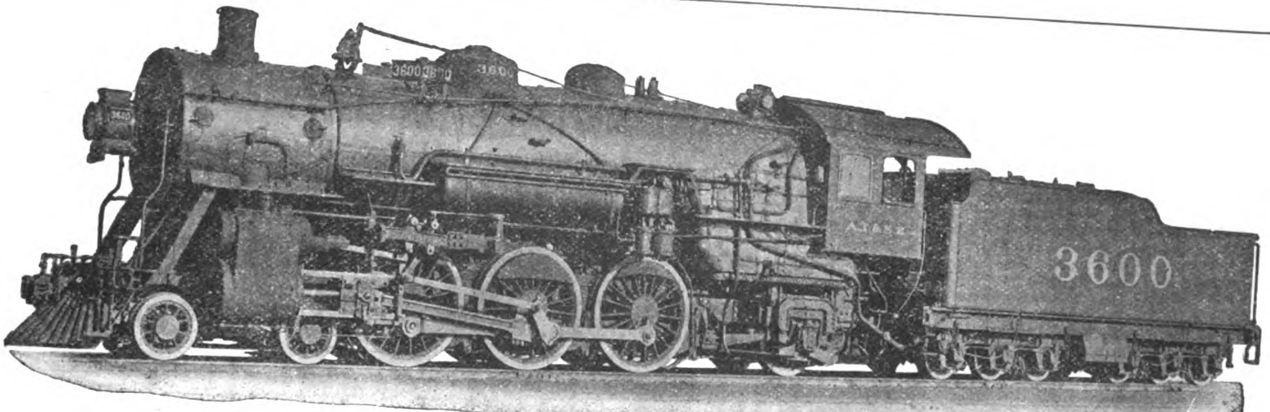
其鎖面形極大約五方吋故能使肘節附合且鎖砧大小適合於連結端之下此連結俱備有各種之附屬品且易於修理此項連結俱爲本公司所專製

總公司開設美國本色萬尼亞省匹此勃

中國經理上海慎昌洋行天津協隆洋行

# 巴爾威機器車頭廠

The Baldwin Locomotive Works



愛克生討庇格散打非各鐵路之太平式車頭

美國搭客之快車中其大半皆有本廠之太平式(四—六—二)機器車頭所拖帶此項車頭機器能載重力拖帶重車因機器內包函之力足使速率按時增高也

汽筩長二十六吋闊二十六吋　主動輪直徑七十三吋

汽機壓力二百磅　火爐佔地六十六另十分之七方呎

熱水面積四千四百四十三方呎　加重熱水面積九百八十方呎

主動輪重十七萬二千五百五十磅　機器共重二十八萬八千七百磅　拖力四千一百磅

太平式之機器車頭爲愛克生討庇格散打非鐵路所有爲近世最新式之機器見上圖

此條鐵路爲乘客最多故車行之次數亦多辦法亦妥善

此車頭用油爐特意擴充其極大之力每邊之主動輪之重限五萬八千磅

此項機器已爲本廠帶往巴拿馬萬國賽會場之物件中之一

中國經理　上海 北京 張家口 天津 香港 漢口　愼昌洋行

日本經理東京舍爾法辣薩有限公司

# 美國鋼鐵公司

上海黃浦灘第四號 電碼 'Steelyard' Shanghai

## 專運美國鐵管公司各種物品

並製各式銅鐵自來水自來火蒸汽等氣管

大小自八分之一至三十寸

隨意配合無不適用

## 汽鍋上應用之鋼管

質料或剛或柔式樣或大或小尺寸或長或短

各式井內所用管子

## 無縫煤氣管或煤油鐵管

其重量能抵三千七百磅壓力

用於各種大壓力煤氣空氣亞馬尼亞及炭氣等物最爲合宜

## 空心鐵柱

用以建築電車軌道電桿德律風桿及各種電氣柱枝

其外尚有各項工程應用之鋼鐵管子

及自來火自來水龍頭等件一應俱全

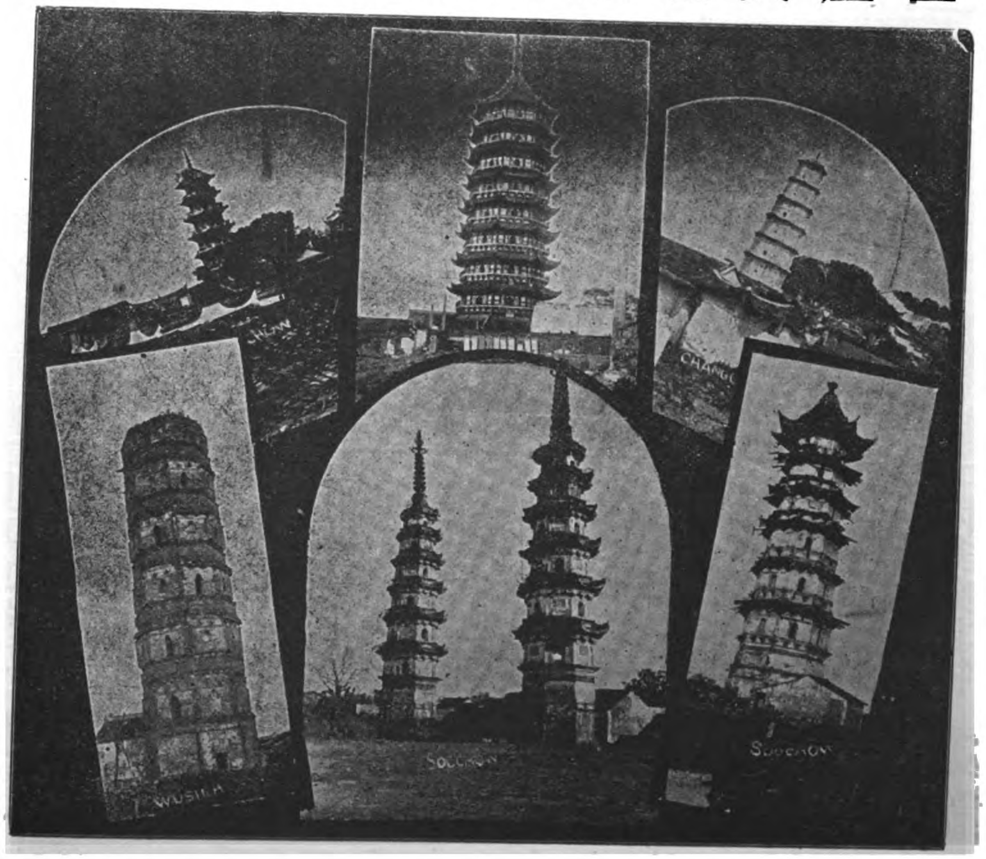
United States Steel Products Company

# 滬寧鐵路廣告

Shanghai-Nanking Railway

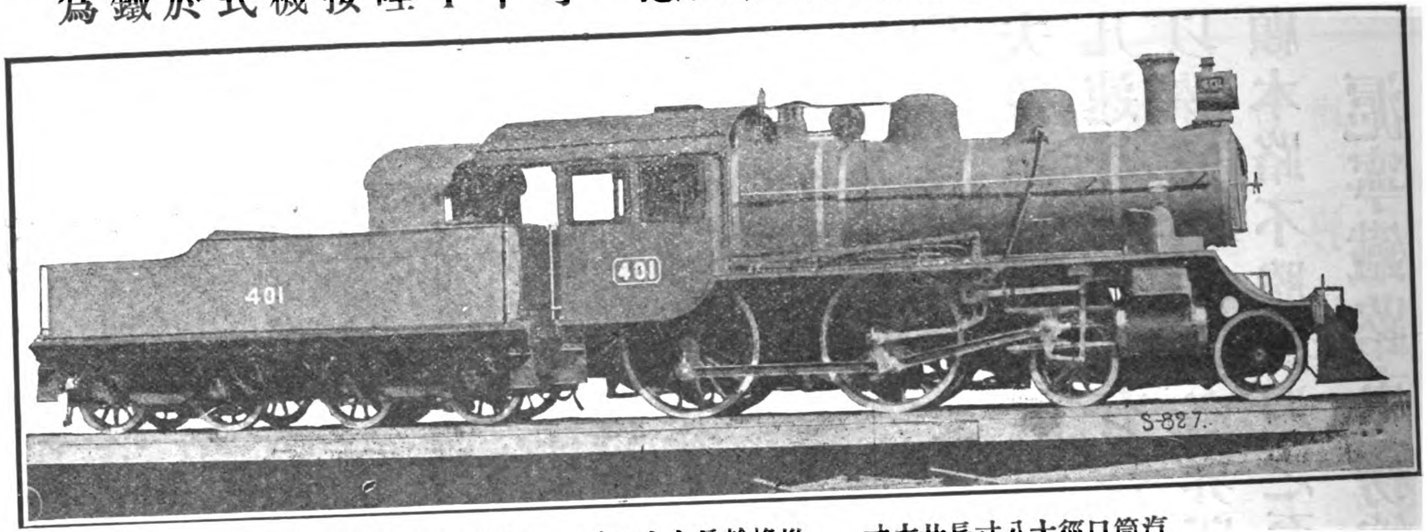
啓者本路工程均照歐西頭等鐵路最新款式建築軌道堅固車行穩捷往來時刻必依規定各站之候車客房停車月臺不但地方寬敞布置亦極周密往來搭客無擁擠窒塞之虞各等客車座位舒暢氣候咸宜頭二等之車尤爲美麗無匹電燈電鈴電扇廁所盥室色色完備並有餐車隨行以備搭客不時之需西膳茶點酒水俱全價廉物潔衛生合宜每晚加走夜車以便行人睡臥車上設有床位備客休息至淞滬一段之設施亦與幹路無異各站及車上之員司夫役招待搭客處處周到運貨亦甚穩凡速於交通上有益者無不日事改良以臻完備久蒙各界所贊譽倘承
光顧本路不勝歡迎之至

滬寧鐵路車務總管敬啟



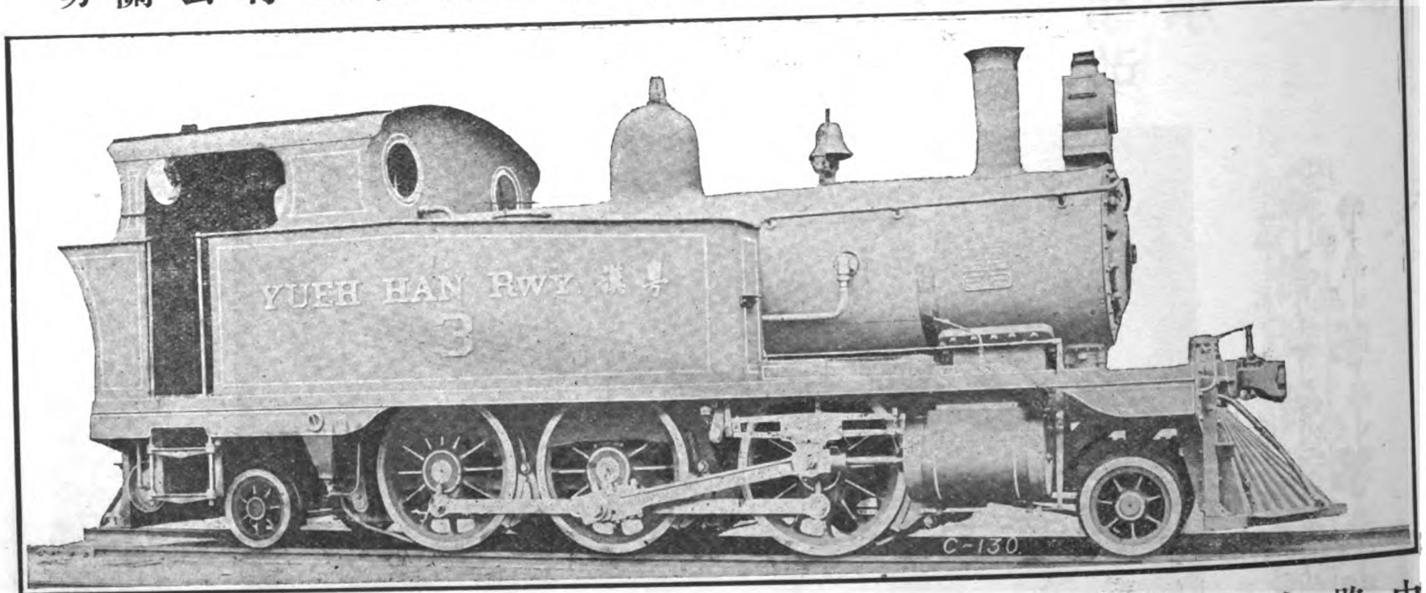
# 美國製造火車公司之火車極合用於中國鐵道

美國所製造之八輪火車頭即近時朝鮮鐵道所用之八輪火車頭甚爲合用已著明效拖客車至六輛或八輛其速力計一點鐘可駛二十至四十五英哩之遙按此種機關車式樣用於中國鐵道尤爲適宜




汽筩口徑十八寸長廿六寸　推挽輪長七十二寸　拖力一萬七千九百磅

火車頭之製造也在購辦者無不以最新式最適用爲貴而製造家亦必以最新式最適用者求合於購辦者之心爲能達其目的夫果欲合購辦者之心則必須經機關師之幾番商榷始可辦理如　貴客欲與本公司在中國之經理處三井洋行面商則本公司當派機關師就商一切概不需費




中國粵漢鐵路之六輪雙水櫃車拖帶貨車或客車或貨車客車連帶之列車其速力與上圖記八輪車頭快慢有異者因此車速力較小拖帶列車之數遂少但前後有兩小輪可無旋轉機而能進退自如故駛行之時便捷多矣其特別出色之處卽在此兩小輪也

**在中國經理處三井洋行上海天津廣東漢口香港厦門盛京**

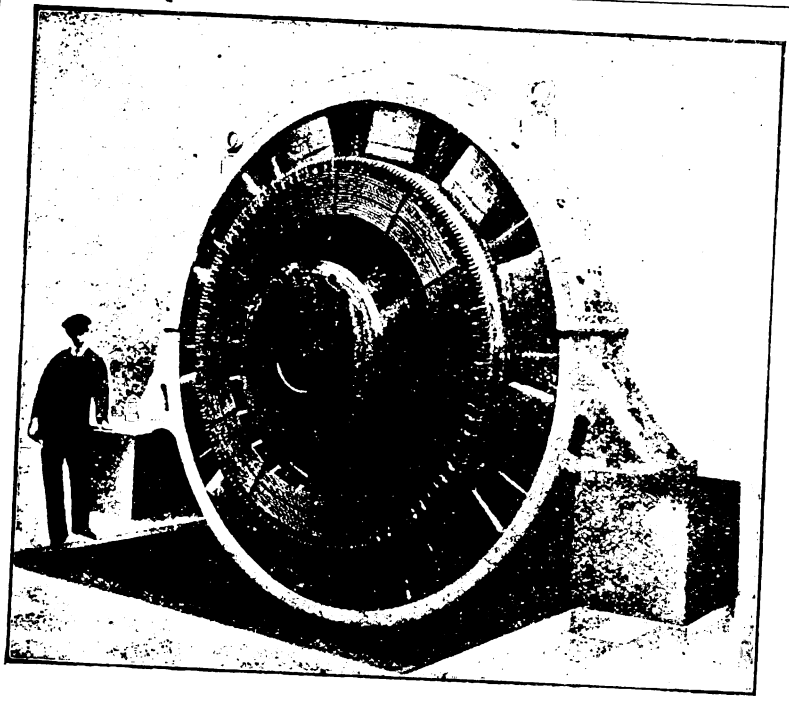
**本公司在美京紐約禮拜堂街三十號　電碼**

Locomotive New York
Annual Capacity; 3500 Locomotive.

American Locomotive Company

# 佛克耳司有限公司廣告

Vickers Limited



此圖為車鈎汽機發電機克羅瓦德一千五百電流自五百至五百三十每分鐘旋轉一百八十次

本公司專造各式電機
直接車鈎汽機發電機
旋轉變壓器
脫羅交流發電機
馬達發電機
馬達及轉轍發動機

總公司開設英國京城百勞匯路
工廠在英國吉非特及柏名罕

# 麥加利銀行廣告

Chartered Bank of India, Australia and China

本銀行為皇家所特許立案之銀行開設於英國倫敦監督門第三十八號
資本英金一百二十萬鎊
公積英金一百八十萬鎊
專做匯兌以及銀行各種營業事務今將經理及分行開列於后

經理處及分行列后

愛立灼　曼谷（暹羅）　巴塔非亞（爪哇）　孟買（印度）　加爾各答（印度）　廣東　西部　可倫坡（印度）　特利（印度）　福州　海洪　漢口　香港　伊羅伊羅（小呂宋）　依巴　卡拉基　克蘭神戶（日本）　克拉蘭博　馬特拉司（印度）　馬來半島（小呂宋）　鈕約　北京　檳榔嶼　卜克　仰光　西貢　式拉卡　上海　新加坡　蘇拉排耶　台浜　天津　橫浜

定期存款可來行面議利息每半年一付每年六月三十號及十二月三十一號為付息之期
活期存款若在二百鎊以上則按月結算尾款常年利息二厘

本銀行之往來銀行列后

英吉利銀行　倫敦城及米蘭銀行　倫敦府及韋司朋司銀行　英吉利國立地方銀行　蘇革蘭國立銀行

組合司理　活脫海　傅蘭塞　同啓
副司理　柏來司登

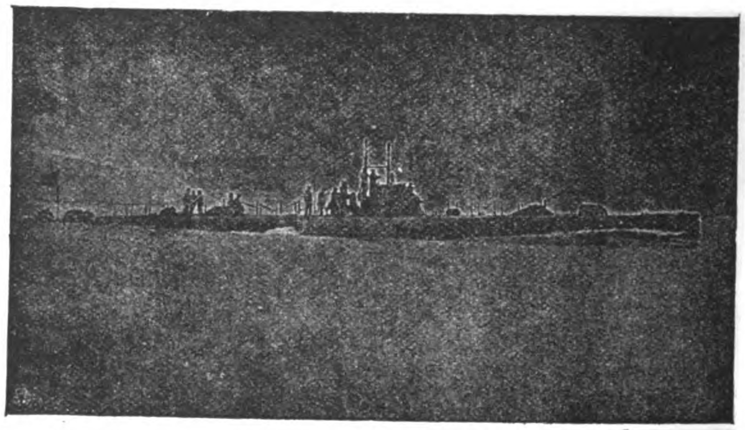
# 福祿氏磨機廠

The Fuller-Lehigh Pulverizer Mill.

陳立所中所陳立之機器不下
四千架而福祿氏磨機實首屈
一指且價廉而又能磨不易磨
之各物品　如白煤　石綿石
瀝青砧　硫酸重土　炮克
石脫　烟煤　骨煤　炭精
水門汀石　水門汀磚　粉墨
炭　金苗　黃泥　煤炭
焦炭　銅苗　白雲石　肉色
之石　燒過之黃泥　粉泥石
鑄鐵板面　福祿氏土　玻
璃　金石英　黑鉛　石膏
海持來石灰　鐵苗　磁土
鎔巖　石灰　石灰石　砂石
磁鐵石　大理石　赭石
礦苗　螺蛔　漆　燐石
膏　巴得蘭水門汀　拍特立
耳礦滓　石英　壳　硅酸
礦滓　石板　雲母石　屈破
立　大小砂石　赭鐵礦　皓
金　淨白粉
諸君若欲以磨成之煤生爐請
查本廠所積之粉煤　用本廠
所製展轆壓之用本廠之火轉
乾機乾燥之用本廠之磨而粉
磨之若承各界光顧請來函索
說明書爲禱
本廠所出福祿氏牌機器如
絞縺　輓輪　齒輪　磨管
砌襯　壓機　磨機
工廠修理以及特式之鑄品
均可代辦請閱第五十號目
錄可來信索取
萊哈車子車輪車軸工廠白



# 飛愛山喬其哇有限公司出售海軍戰利品廣告



頭等淹沒魚雷艇
水雷坑道
炸藥隧道 消滅敵人水雷之用
形如浮桶之水面炸擊器
海底防範各種之軍械
各種電力發動之快行汽艇

Fiat-San Giorgio, Ltd., Spezia (Italy)



# 日本三菱長崎造船廠

**主要製作品**
郵客旅貨便
物石油槽汽
船達頻汽船
快遊船各種
兵船各種汽
機汽鑵及電
氣機械

**特許製作品**
巴遜斯式達
頻同式發電
機斯董式滿
嘎黃銅公杜
拉普羅冷汽
機威耶式抽
水抽氣各機
暨爾特抽氣
機

**海難救助船**
大浦丸(七百
拾六噸)

**船渠及船架**
乾船渠叁基
船架壹基而
第叁乾船渠
係蘇士以東
最大者

**工場地基及職工數**
拾叁萬玖千
坪壹萬餘名

Mitsu Bishi Dockyard & Eng. Works

## 美國尼馬司公司廣告

E. I. du Pont de Nemours & Company.

本公司爲全球最大之製造炸藥公司專製炸藥轟炸膠及開煤礦用之安全火藥轟炸火藥響墩電氣響以電氣轟炸各種機器已有百年之久素爲全球所公認推爲本公司所製者爲首屈一指

且所製之火藥均包裹妥貼以便運往各國不致有虞

本公司所出安全火藥專用於開煤礦業經由美政府之礦務部試驗審定

本公司有工廠三十所沿太平洋大西洋岸亦有工廠以便運輸

本公司設在美國達耳華省韋銘頓城

若承賜顧請通函爲禱

## 大愛門車鏈製造公司廣告

Diamond Chain & Mfg. Co.

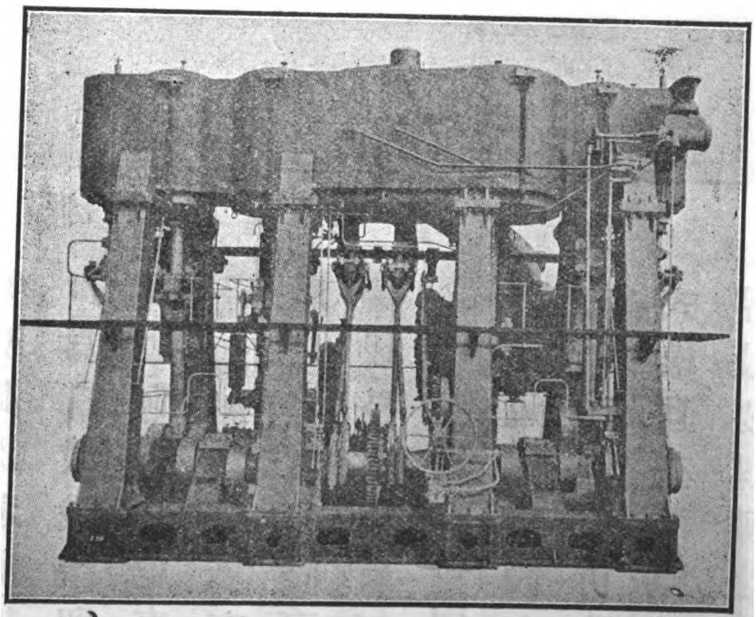
本公司專造各式車鏈如脚踏車氣車自動車馬達貨車以及傳力之各種車鏈均爲鋼質造成且爲頭等貨物業已二十五寒暑公認大愛門(譯金鋼鑽鏈)鏈爲各鏈之泰斗本公司所出之貨物質地堅實應用耐久且製造合度若接定單後卽可運輸不論用何種國文字通信均可若欲索樣本目錄或價目表者請來函詢問可也

本公司開設美國印第安省印第安波利斯城

## 英國東北輪船機器公司廣告

North Eastern Marine Engineering Co., Ltd.

本公司專造三次或四次自漲力汽之合抵力汽機及平置水輪以及各種船隻



此圖爲四次自漲力汽之合抵力汽機計馬力四千八百匹

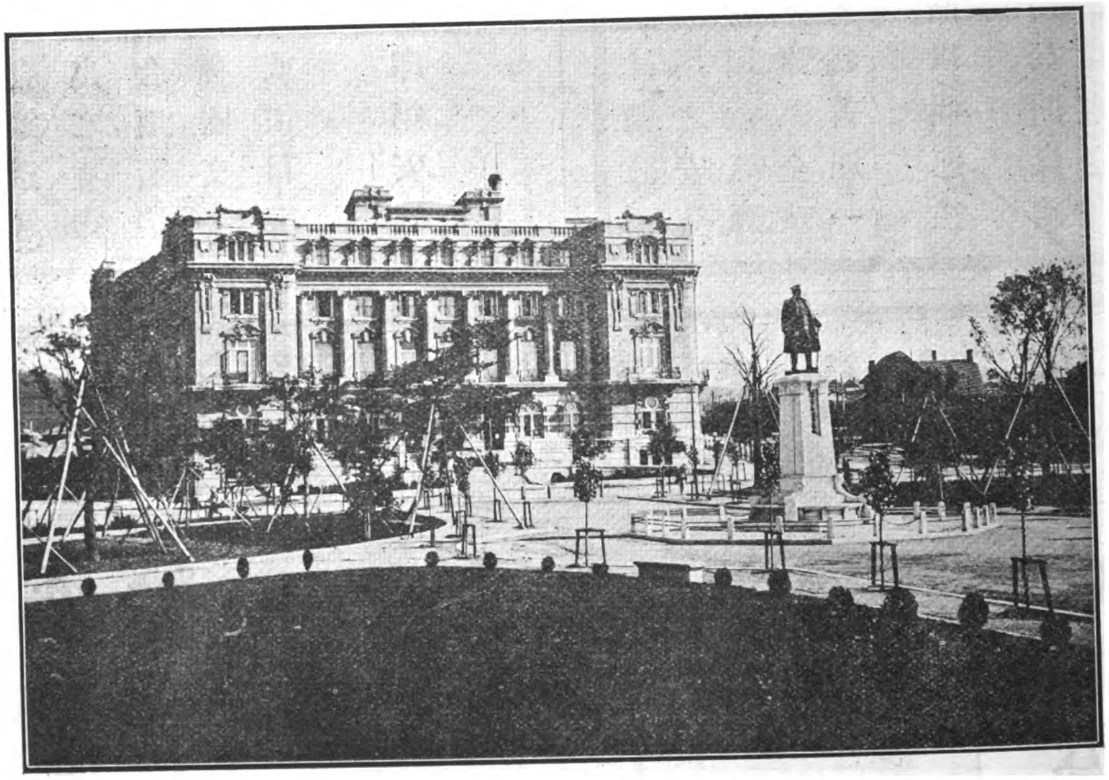
# 南滿鐵路公司廣告

South Manchuria Railway Company, Dairen

諸君何不乘今年假期之時往南滿一遊乎蓋該處地土高燥景緻秀美且爲歷史所載之戰地并有最寬大最佳美之大旅館爲旅行最愉快之地遊擊漁魚打球海水沐浴以及種種遊戲無不可行且更有特異點綴爲近時所改革者

諸君除此外尚有他需乎若一遊於該地待返家後則必神清氣爽爲從來所未有

**欲知假期消遣之法**



**可詢問旅行事務所**

大連夏賣多旅館

除輪軌可達外在大連(爲特異之城及海口使人與趣)星亇浦(爲中國北方之最佳美浜海躱避所)旅順口(爲日俄戰後留有毀壞砲臺之處)奉天(爲滿洲之京城有美麗之皇宮皇陵可以參觀)長春(爲東三省之咽喉且有三國鐵路之通系)均設有新式之旅館均仿歐洲式樣且在撫順(爲世界最要煤礦之一)設有總會

諸君若欲知詳細請來信索取有美麗圖畫之指南書不索分文

斐律濱全島銀行卽原日之西班牙斐律濱人銀行改名創設在西歷壹千八百五拾壹年 準備資本壹千萬元已收資本銀四百五拾萬元經斐島政府承認有附貯公欵所有銀行營業事宜買賣滙單各埠處如 英國倫敦滙票 法吧黎 西班牙馬德里 吧詩倫那 德國伯林 咸北 澳洲西德尼 舊金山 芝加哥 香港與及一切總滙商市各區由電滙兌及附貯日息長期或逐日收支其利息悉照市面行情酌議另設支行在斐島屬之衣路埠其餘各埠皆設有代理人

倫敦 National Bank of Scotland, Ltd. 巴黎 Comptoir National d'Escompte

馬德里 Banco Hispano Americano 吧斯倫那 Crédit Lyonnais

伯林 Deutsche Bank 西德尼 Bank of New South Wales

紐約 Kountze Brothers 芝加哥 Continental & Commercial Nat'l. Bank

舊金山 Wells Fargo Nevada National Bank 香港 Banque de L'Indo-Chine

上海 International Banking Corporation 斐島詩務 International Banking Corporation.

本銀行寫字樓在嗎尼拉市些灣帝大街門牌第拾號

總理人 樊挨示拂

協理人 馬山洛

The Bank of the Philippine Islands

# 德華銀行

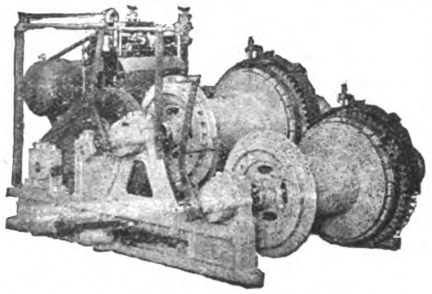
總行在上海分設香港廣東北京天津漢口靑島濟南橫濱神戶新加坡加耳各搭柏林漢堡等處資本七百五十萬兩創始於一千八百八十九年利息活存者二釐存款有定期者可向本行詢問兼做各處匯兌總經理萬葛君

Deutsch-Asiatische Bank

# 立奇華製造公司廣告

Lidgerwood Mfg. Co.

本公司製造扯升機𤸎司令油或蒸氣或電汽於各處均適用所定造之機器及電升機已不下三萬六千具欲知詳細請來函示知



公司開設於美國紐約省自由街九十六號歐洲經理處在英國倫敦京城

# 森茂司製造公司廣告

The Simmons Mfg. Simmons Bedsteads.

本公司專造床架爲全球最著名之鐵床廠之冠已有五十年之閱歷且所配料作均精美無匹質地堅實且合於各地之天時水土而款式及模樣爲各國所宜

若欲知詳細式樣請直接來函本公司索取或由經理人間接亦可

開設美國威司根辛省開諸息

請君何不乘今年假期之時往南滿一遊

欲知假期消遣之法

# 滙豐銀行

△資本金
一千五百萬元
△英金公積
一千五百萬元
△銀公積
一千六百七十五萬元
△貯備股東應付金
一千五百萬元

定期存款利息額如蒙函詢當卽通知需用銀者如以相當之物作抵均可議辦其餘各種銀行交易皆應有盡有滙票則可滙至歐洲印度新金山美洲中國及日本各大商埠

Hongkong & Shanghai Banking Corporation

# 花旗銀行廣告

本行招集資本及歷年贏餘共計美金六百五十萬元總行設在美國鈕約城全球通商大埠無不設經理以廣招徠商界遊歷界保信買賣滙票及電滙等事無不辦理妥善以副各界信任茲將已設分行各埠分列於左

孟買　巴拿馬帶　北京
加爾各答（印度）　漢口　舊金山
廣東　香港　上海
色盤　神戶　新嘉坡
哥倫　小呂宋　橫濱
墨西哥城　巴拿馬　倫敦

總董候白登　總理格林

International Banking Corporation

# The Bank of the Philippine Islands

**FORMERLY BANCO ESPANOL-FILIPINO**

**(ESTABLISHED 1851)**

| | |
|---|---|
| Authorized Capital | P10,000,000.00 |
| Capital fully paid up | 4,500,000.00 |
| Reserve funds | 1,375,000.00 |

**Official Government Depository**

General Banking Business

Buys and sells drafts on London, Paris, Madrid, Barcelona, Berlin, Hamburg, Sydney, New York, San Francisco, Chicago, Hongkong, Yokohama, Kobe, Nagasaki and all other principal cities.

Telegraphic Transfers

Interest allowed on fixed deposits and current accounts at rates which may be had on application.

BRANCHES: ILOILO, ZAMBOANGA

**AGENTS:**

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PARIS: Comptoir National d'Escompte
MADRID: / BARCELONA: Banco Hispano-Americano / Crédit Lyonnais
BERLIN: / HAMBURG: Deutsche Bank
NEW YORK: National City Bank
SAN FRANCISCO: Wells Fargo Nevada National Bank
SEATTLE: Seattle National Bank

CHICAGO: Continental & Commercial Nat'l. Bank
AUSTRALIA: Bank of New South Wales, Sydney.
HONGKONG: Banque de L'Indo-Chine
SHANGHAI: Bank of Territorial Development of China, Ltd. / International Banking Corporation
CEBU: International Banking Corporation
YOKOHAMA: / KOBE: Yokohama Specie Bank, Ltd.
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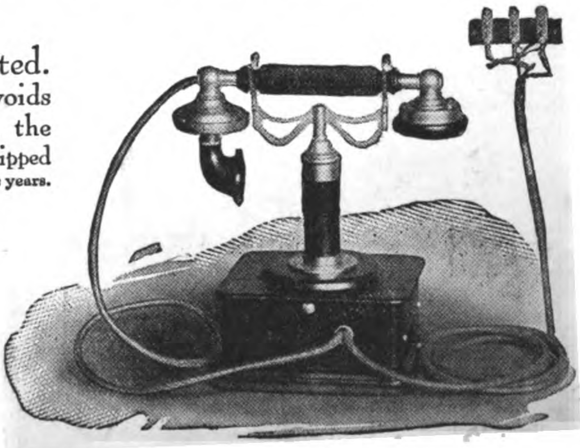
**FOR all telephonic purposes—portable telephone service, intercommunication systems, local lines, small magneto exchanges, universal exchange, common battery system—KELLOGG SYSTEM is the most efficient service in the world. The largest or smallest telephone unit supplied.**

¶ A popular type of Kellogg Telephone is illustrated. It is a compact and reliable model, and assures a service that avoids trouble and repair expense. The parts are easily accessible; the most convenient type of telephone to use for all conditions and purposes. Equipped with our standard ringer, induction coil and Kellogg transmitter which is guaranteed for five years.



¶ The set can be furnished for magneto or common battery service or with separate bell box and stand, if desired, for wall or table use. Highest quality material used throughout with careful assembling and testing. The price is reasonable and we ship promptly and properly. Built in our own extensive factory. *KELLOG SYSTEM is in Universal use. "USE is the TEST."*

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| E. G. Clarke, Peking | AMALGAMATE |
| Paterson Simons & Co., Singapore | PATERSON |

# THE FAR EASTERN REVIEW

AUGUST, 1916

Vol. XIII., No. 3

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遠東時報

THE PRESIDENT OF THE REPUBLIC OF CHINA
LI YUAN-HUNG

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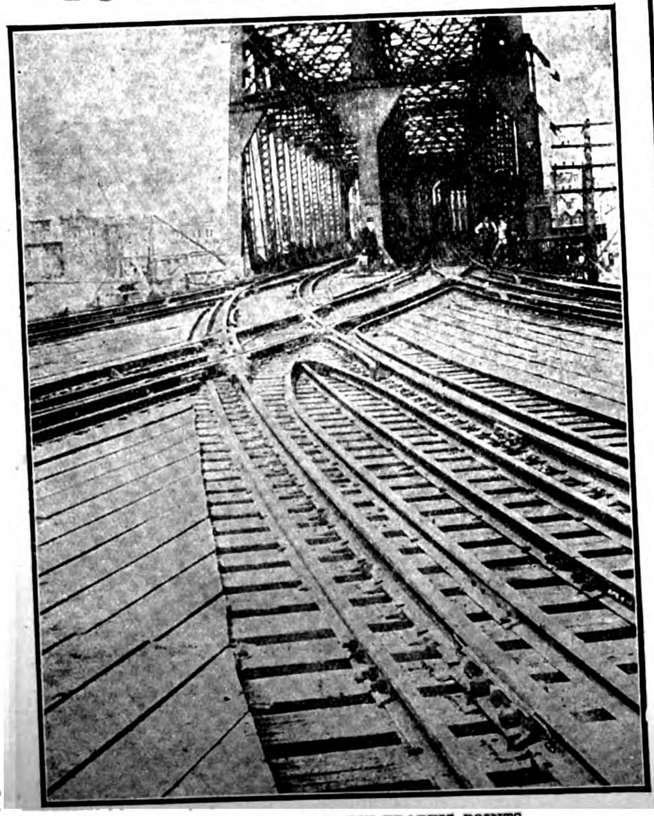
THE WINBY PATENT

## BOLTLESS RAIL ANCHOR



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Prevents Rail Creeping & Spreading of Track

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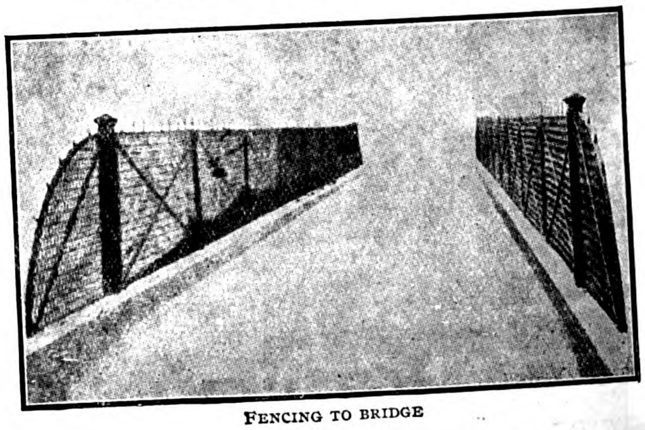

FENCING TO BRIDGE

For:—
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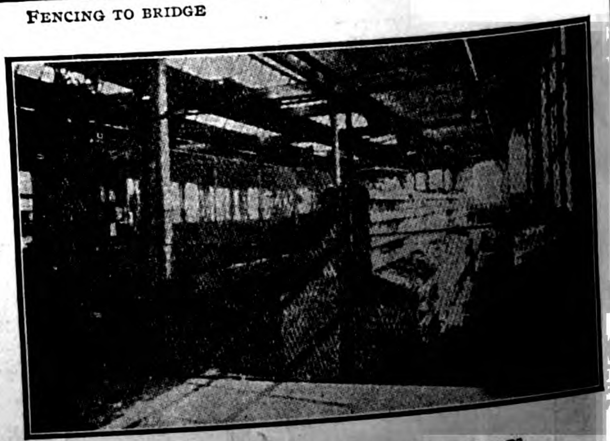
Concrete
Construction



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SOLE AGENTS: WILLIAM JACKS & Co.

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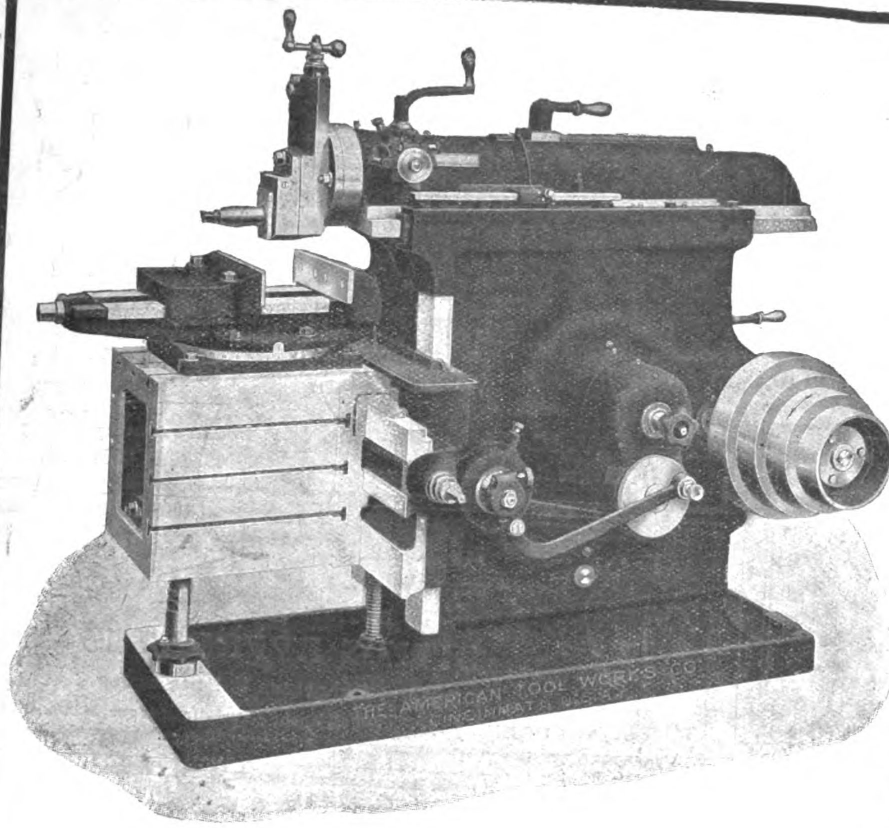
Head Office
5, East India Avenue, London, E.C.




AMERICAN

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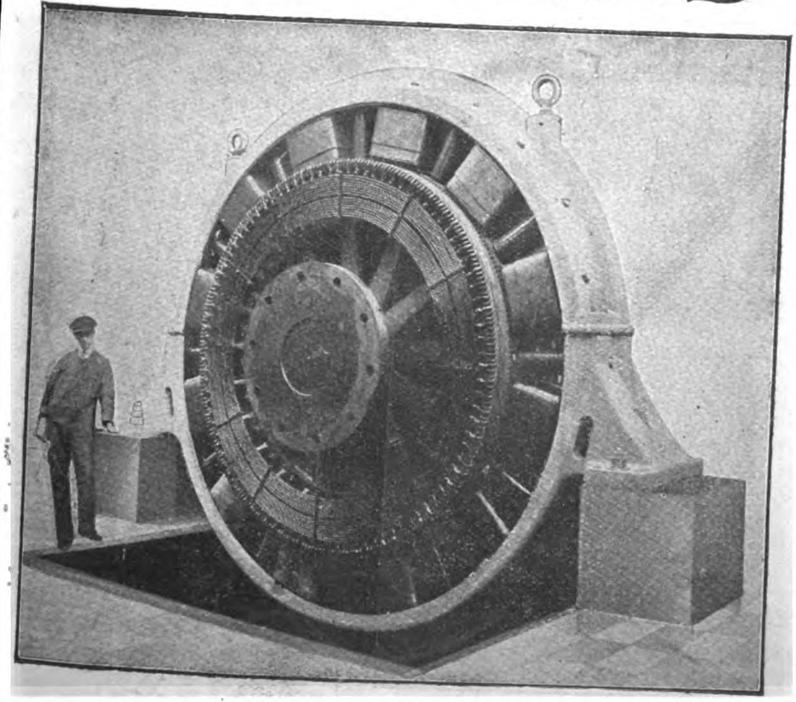
It is an unusually powerful machine, consequently is admirably adapted to heavy manufacturing requirements just as its high degree of accuracy has made it a favorite in tool rooms where accuracy is essential.

Write immediately for complete description of this new Shaper.

**The American Tool Works Company**

Lathes - Planers Cincinnati, U. S. A. Shapers - Radials

**VICKERS LIMITED.**



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**of every description.**

**Generators for direct Coupling to Steam Engines.**

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for ALL PURPOSES.

ALSO

# KAYE'S

PATENT
SERRATED SEAMLESS
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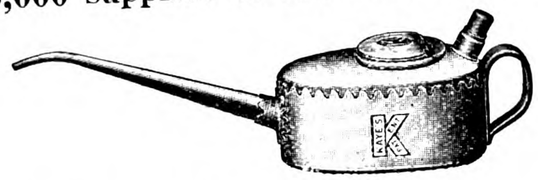
80,000 supplied to the British Navy



As used by the Great Western Railway,
Great Northern Railway,
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MARINE and LAND TYPES for all Duties.

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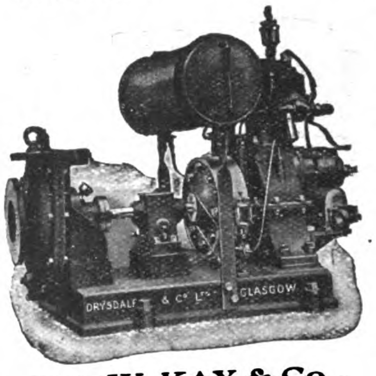

*Agents:* **W. KAY & Co.,**
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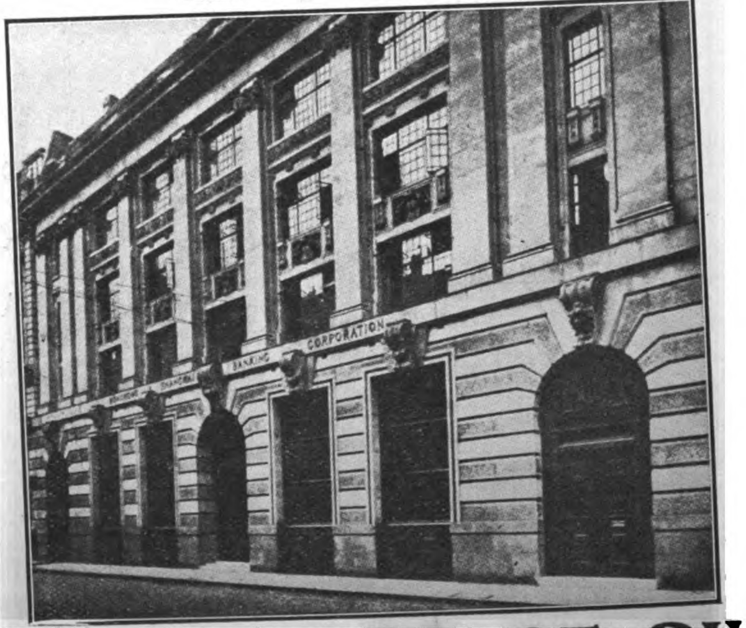

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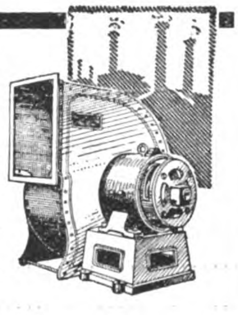

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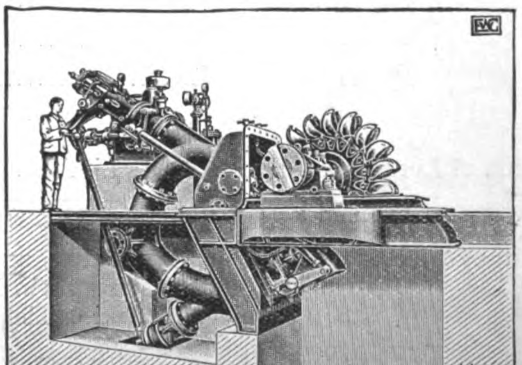

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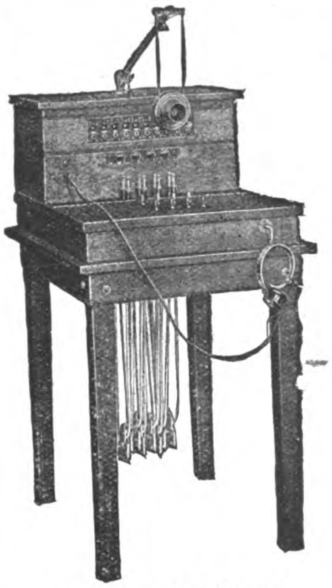

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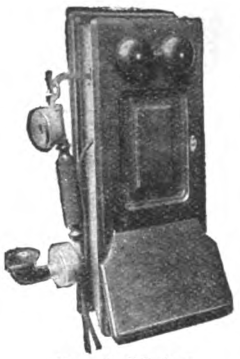

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*Reserve Fund* ........ ,, 18,550,000

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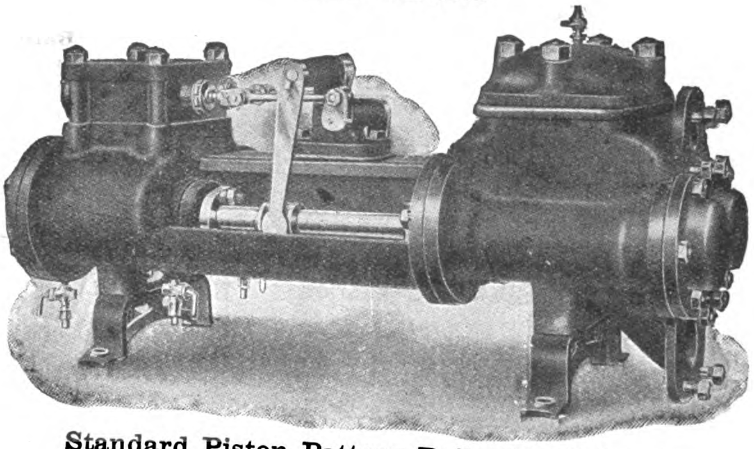

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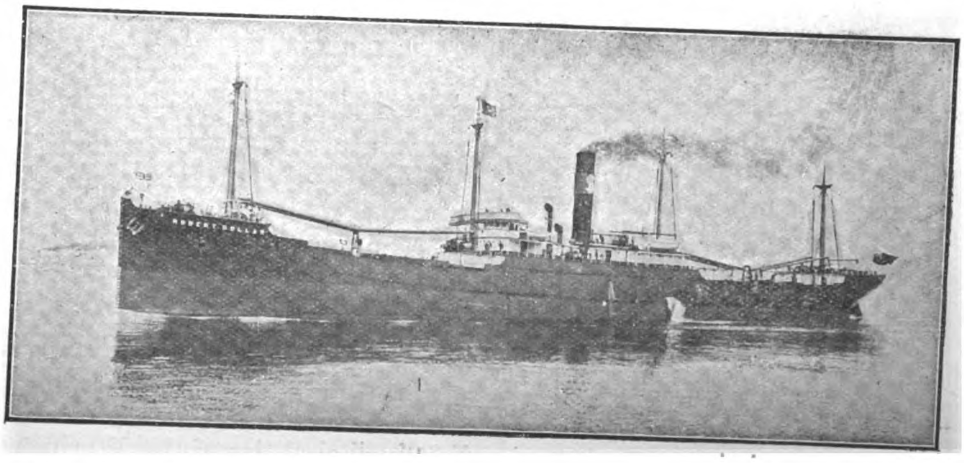

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$33,000,000
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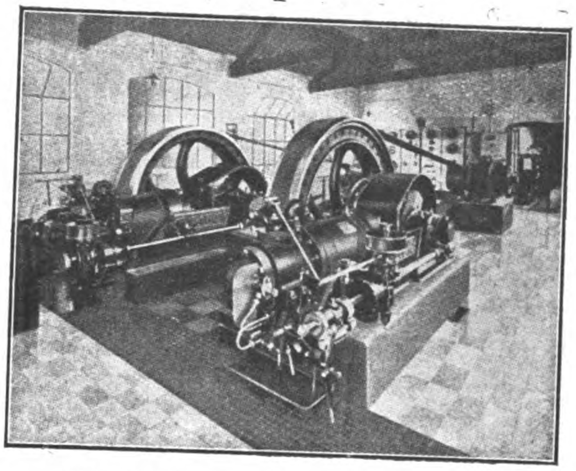

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uses same Oils as Diesel.

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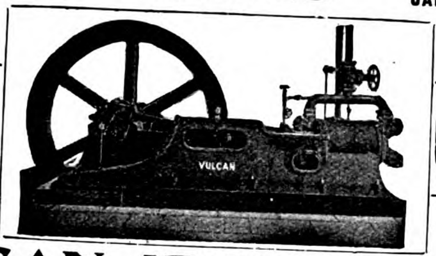

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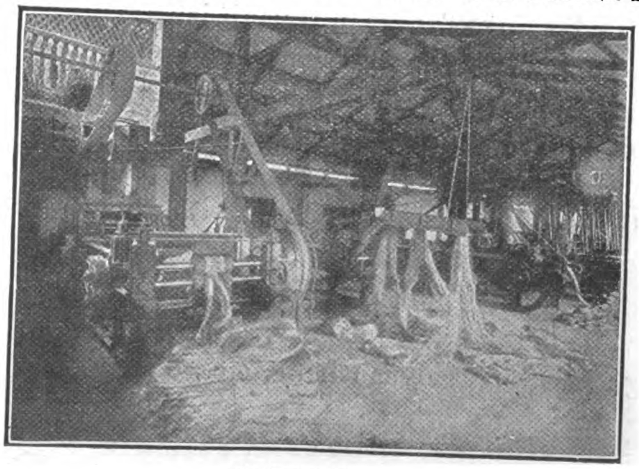

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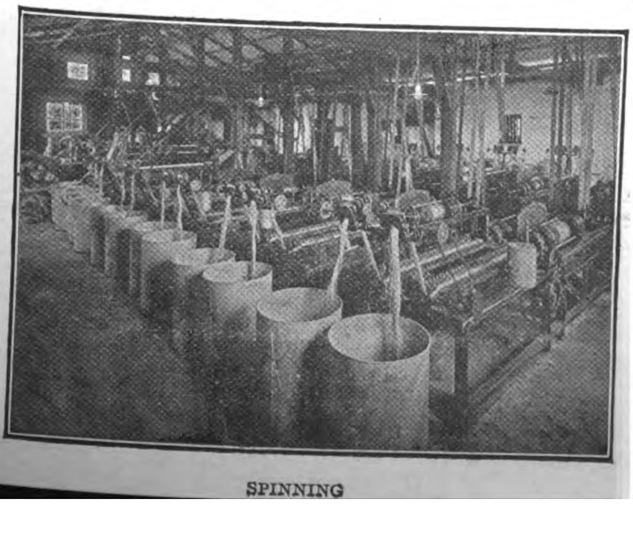

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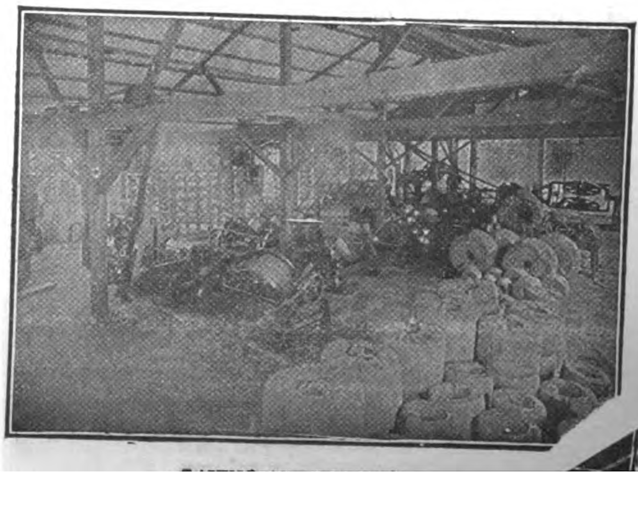

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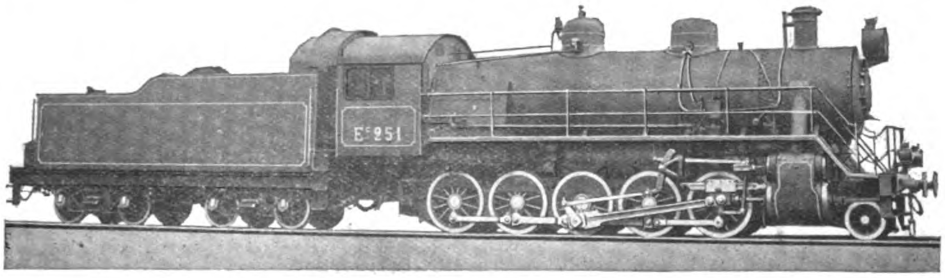

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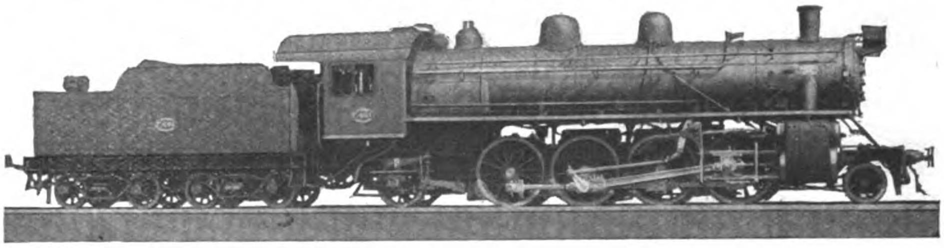

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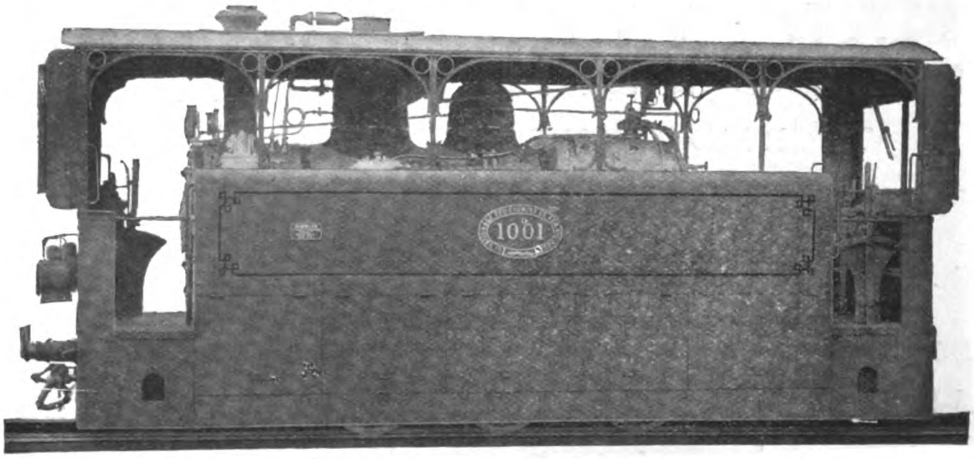

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Total Weight of Engine, 58,900 pounds, all on driving wheels; Diameter of Driving Wheels, 34 inches; Boiler Pressure, 180 pounds; Cylinders, 11½×16 inches; Maximum Tractive Power, 9,521 pounds.

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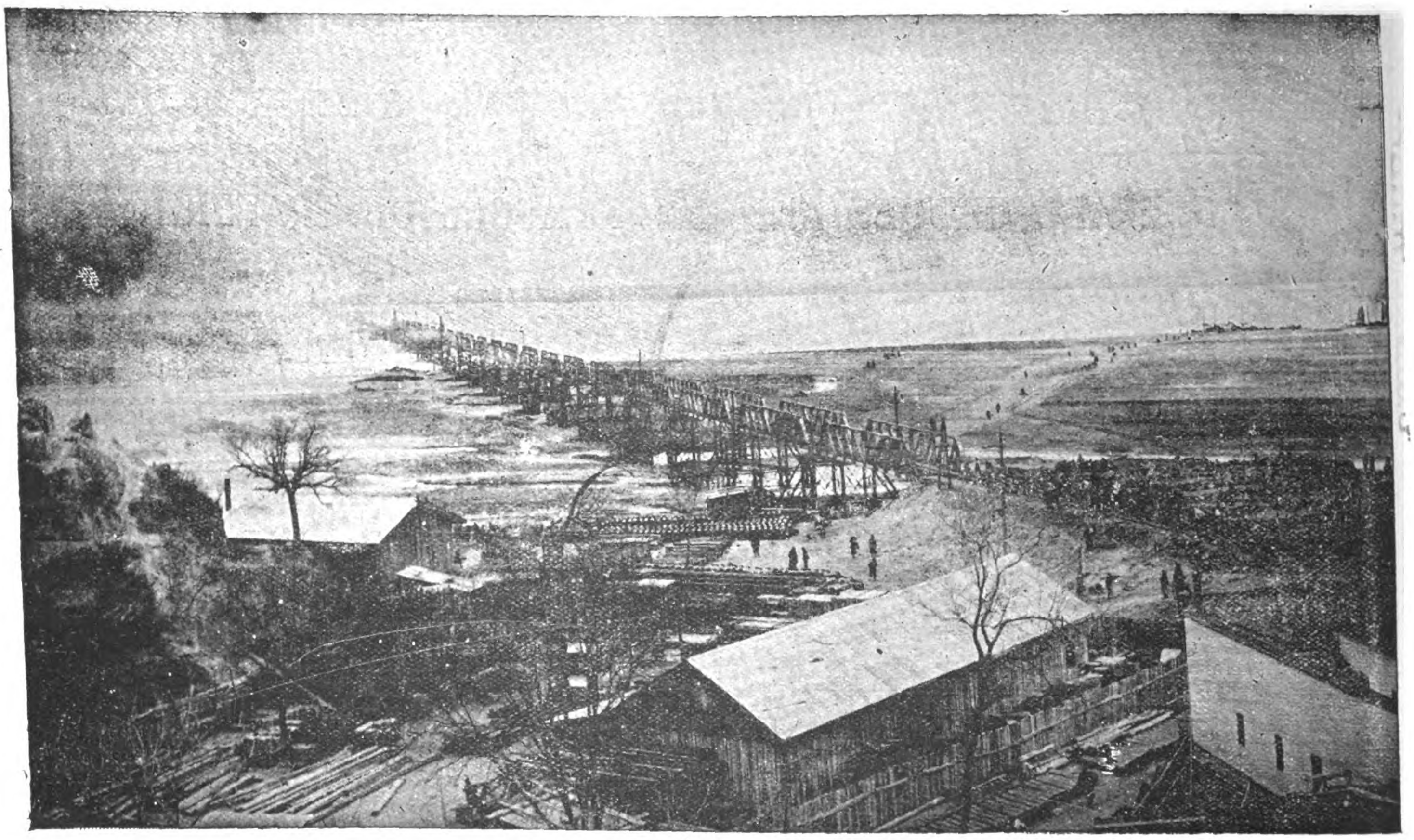

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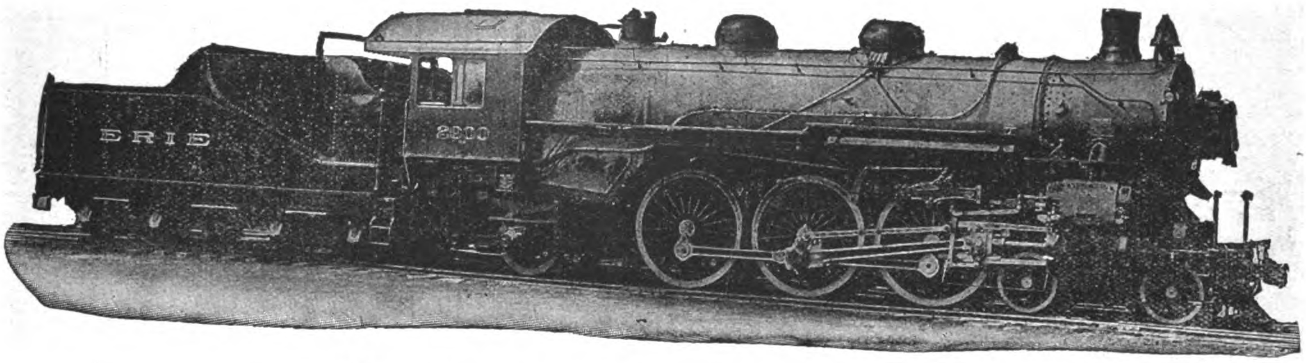


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## LIMA HEAVY PACIFIC TYPE

This locomotive combines the latest improvements and developments in design, materials and economic devices for saving fuel, etc.

Built for the **ERIE RAILROAD** for heavy fast passenger service where maximum capacity was desired.

General Dimensions as Follows:

Cylinders, 27 × 28 inches
Driving wheel base, 14 ft.
Total Wheel base, 36 ft. 2 inches
Drivers, diameter 79 inches
Boiler, straight locomotive type
Boiler diameter 79 inches

Weight on drivers, 176,000 lbs.
Total Weight, 287,000 lbs.
Tractive Power, 40,700 lbs.
Factor Adhesion, 4.24
Superheater, Schmidt
Valve motion, Baker

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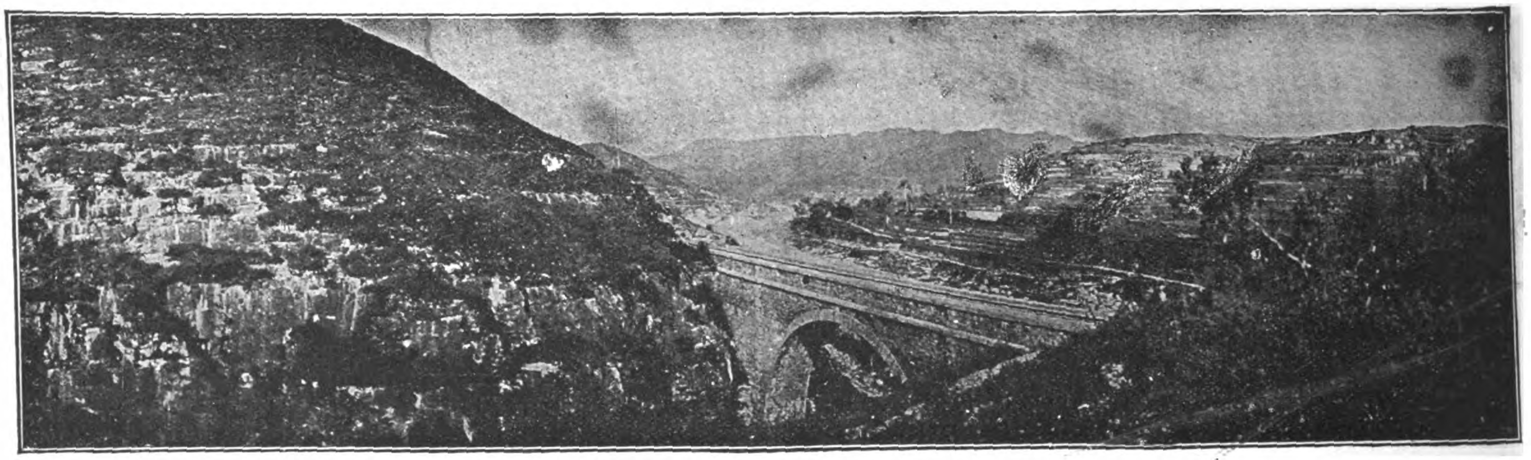
# Chinese Government Railways

## The Cheng-Tai Railway

(CHINESE GOVERNMENT SHANSI LINE—CHENGTINGFU TO TAIYUANFU)

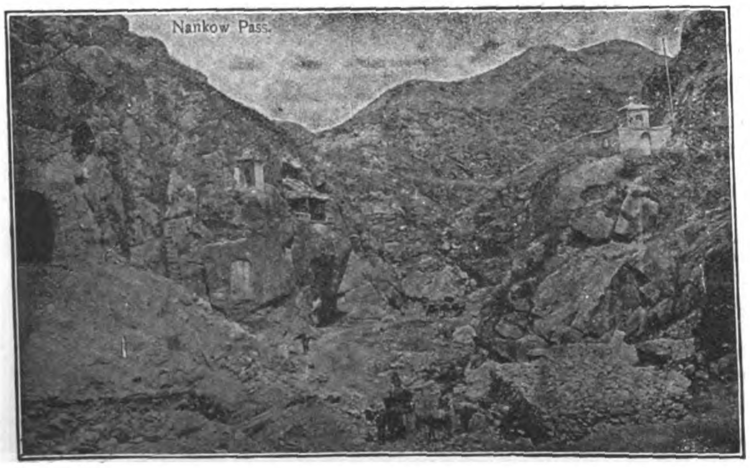


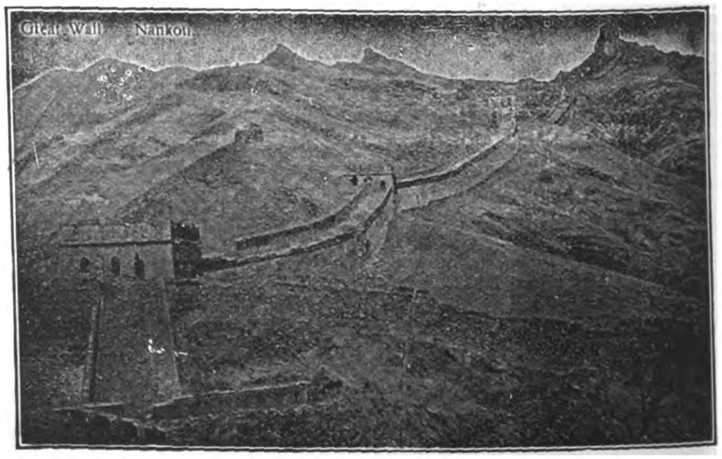
VIEWS ALONG ROUTE OF CHENG-TAI RAILWAY

The trains of this line connect with the through service of the Peking-Hankow Railway, affording Travellers the opportunity of seeing the most picturesque part of China. The line passes through a mountainous section of country, rich in Mineral Resources to the Provincial Capital of Shansi at Taiyuanfu. This interesting city is a great educational center, and famous for the fine quality of its artistic embroideries.

## The Peking-Kalgan Line

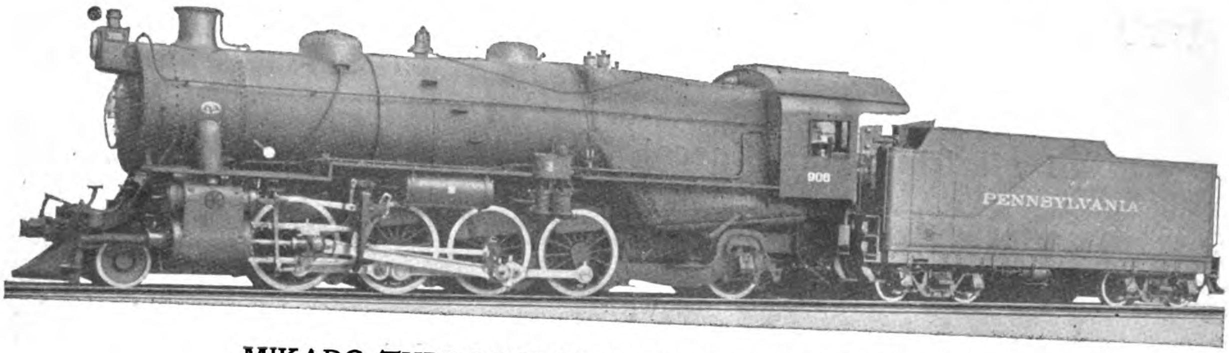
*"THE ROAD TO THE GREAT WALL"*




This line follows the ancient caravan route and military highway from Mongolia into China by the way of the historic Nankow Pass. This pass is the Key to Peking, and Kalgan is the gate of the Country. From here the great camel caravans set out on their long journeys across Mongolia to Siberia and Central Asia. This old frontier mart, retaining its time-honored characteristics, one of the most interesting sights of the Old World, is made accessible by the new railway. The line also carries the passenger in two hours from Peking to Nankow, when the Great Wall of China and the Ming Tombs may be seen. A foreign hotel is operated by the railway authorities at Nankow, where chairs and guides may be secured for the Tombs.

# Mikados for the Pennsylvania




MIKADO TYPE LOCOMOTIVE, PENNSYLVANIA R.R.

Cylinders, 27×30″
Driving-wheels, diameter, 62″
Steam pressure, 205 lbs.
Grate area, 70 sq. ft.
Water heating surface, 4058 sq. ft.
Superheating surface, 962 sq. ft.
Weight on driving-wheels, 237,500 lbs.
Weight, total engine, 314,600 lbs.
Tractive force, 57,800 lbs.

Increasing traffic has necessitated the use of heavier motive power on the Pennsylvania R.R., and Mikado (2-8-2) type locomotives are now replacing Consolidations (2-8-0 type) in main line service. The Mikados represent an increase in tractive force of 25 per cent., as compared with the Consolidations.

The equipment of the Mikados includes a superheater, Belpaire firebox with combustion chamber and brick-arch, piston valves, and Walschaerts valve motion with screw reverse mechanism. Particular attention has been given to the design and construction of the machinery. The reciprocating parts are light in weight, so that the excess pressure on the rail due to the centrifugal action of the counterbalance, is kept within reasonable limits. With high boiler power and comparatively large driving-wheels, these locomotives can be used in fast freight service if desired.

The illustration shows one of 75 Mikado type locomotives recently built for the Pennsylvania by The Baldwin Locomotives Works. The design of these locomotives was prepared by the mechanical department of the Railroad Company.

## THE BALDWIN LOCOMOTIVE WORKS

**Cable Address:—"BALDWIN, PHILADELPHIA"** **PHILADELPHIA, PA., U.S.A.**

**Agents for China:—ANDERSEN, MEYER & Co., Ltd., SHANGHAI, TIENTSIN, PEKING, KALGAN, HONGKONG, HANKOW, CHANGSHA, and HARBIN**

**Agents for Indo-China, Straits Settlements and Siam—Andersen, Meyer & Co., Ltd., Shanghai**

**Agents for Japan:—SALE & FRAZAR, Ltd., TOKYO.**

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## PROSPECTING AND DEVELOPMENT

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**BORING** to any depth required

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**Diamond Boring Machines**

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**Accurate results guaranteed.**

For further particulars and estimates—apply

**PEKIN SYNDICATE, LTD.**

SHANGHAI, TIENTSIN, HANKOW, PEKING.

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金鋼鑽鑽機打礎

技師工人皆歷練能手

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上海 天津 漢口 北京

# Why not Spend This Year's Holiday in South Manchuria?

Magnificent Climate, Beautiful Scenery, Historic Battlefields,
Hotel Accommodation of the Best, Comfortable Travelling.
Good Shooting, Capital Fishing, Fine Golfing, and Sea Bathing ad lib.,
Combined with the Distinctive Quaintness of the Country undergoing the most
Striking Evolution of Modern Times.

## What more do you want?

All this and much more can be obtained in South Manchuria at moderate outlay,
and you will return from the trip charmed, revived, and
invigorated as never before.

**Ask the Travel Offices what they think**

**Of this Holiday Scheme.**

YAMATO HOTEL, DAIREN

In addition to its Train and Steamer Services, the South Manchuria Railway Company provides Modern Hotels on European lines at Dairen (whose phenomenal rise as a City and Port affords interesting study), Hoshigaura (the finest seaside resort in North China), Port Arthur (where the ruined forts are maintained just as they were left at the close of the Russo-Japanese War), Mukden (the Manchu Capital where the picturesque Imperial Palaces and Tombs may be inspected), Changchun (the key of Manchuria and the junction for three Railways), and gives equivalent to European Hotel accommodation at its Club at Fushun (one of the most important Collieries in the World).

Information on any subject and a beautifully Illustrated Guide Book supplied gratis by the

## South Manchuria Railway Company,

**DAIREN.**

Telegraphic Address:
**Mantetsu.**

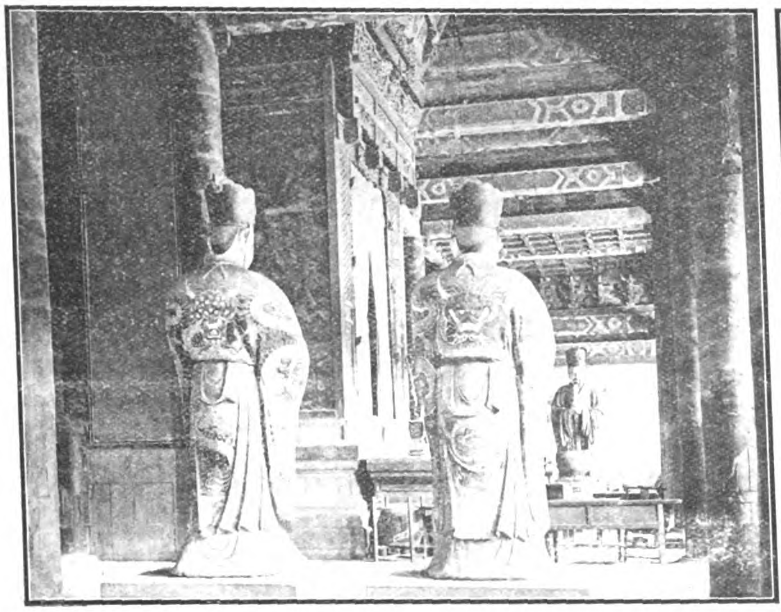
Codes: A.B.C. 5th Edition,
A. 1., & Lieber's.

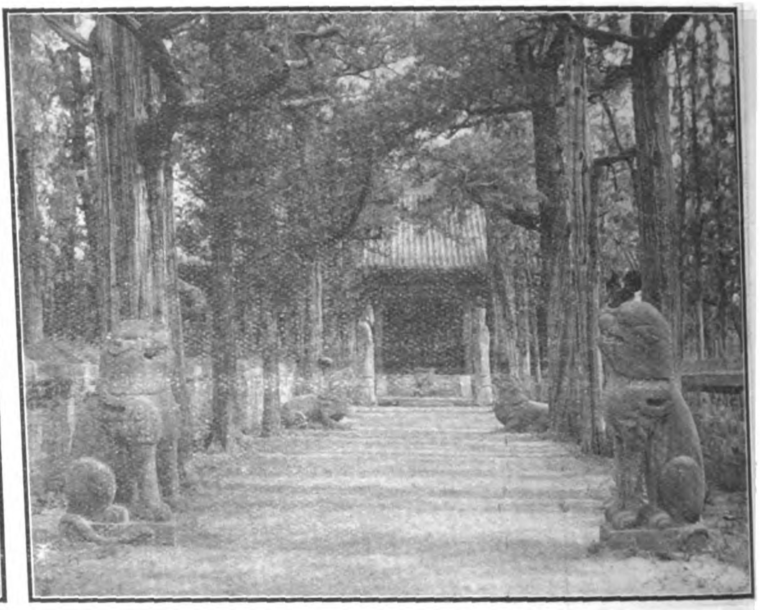
津浦铁广告
旅游手册



# CHINESE GOVERNMENT RAILWAYS

# TIENTSIN-PUKOW LINE





**Mukden-Peking-Kalgan-TIENTSIN-TSINANFU-HSUCHOWFU-PUKOW-Nanking-Shanghai.**

**all by rail only.**

Being the **quickest, surest and most convenient** connection between Shanghai on the one and Tientsin, Peking, Kalgan, Mukden and the **Siberian route on the other side,** this railway represents **a saving of many hours, of many troubles,** worries and inconveniences for the busy merchant, the home tripper on short furlough.

The tourist, the globe trotter travelling with more leisure and bent on seeing things, it takes right away from the stereotyped banality of the great ports, takes him through many provinces of the vast republic and shows him **something of the "real" China,** of its people, its history and its beauty.

Express trains equipped with sleeping and buffet cars run once a week each way between Pukow (Nanking) and Tientsin connecting with the through service of the South-Manchuria and Trans-Siberian Railways.

Through mail trains equipped with **buffet cars run daily each way** between the before mentioned termini.

The crossing over the Yangtsekiang between Nanking and Pukow is effected by means of a modern 100-tons twin-screw ferry boat.

Special facilities and **liberal allowances** for passengers' baggage.

Best of **meals and wines supplied** on the trains.

Sanitation under the personal supervision of a **qualified medical officer.**

For further particulars apply to THE TRAFFIC MANAGER, Head Office, TIENTSIN or to the Agencies of Messrs. Thomas Cook & Sons, The International Sleeping Car & Express Trains Co. or the Nordisk Resebureau.

Telegraphic Address: TSINPURY—Tientsin (Tsinanfu, Nanking, Shanghai).

Codes: A B C 5th Edition; Broomhalls' (with Suppl. No. 1).

**Tientsin, May 1st, 1915.** **The Tientsin-Pukow Railway Administration.**

# American Car & Foundry Company

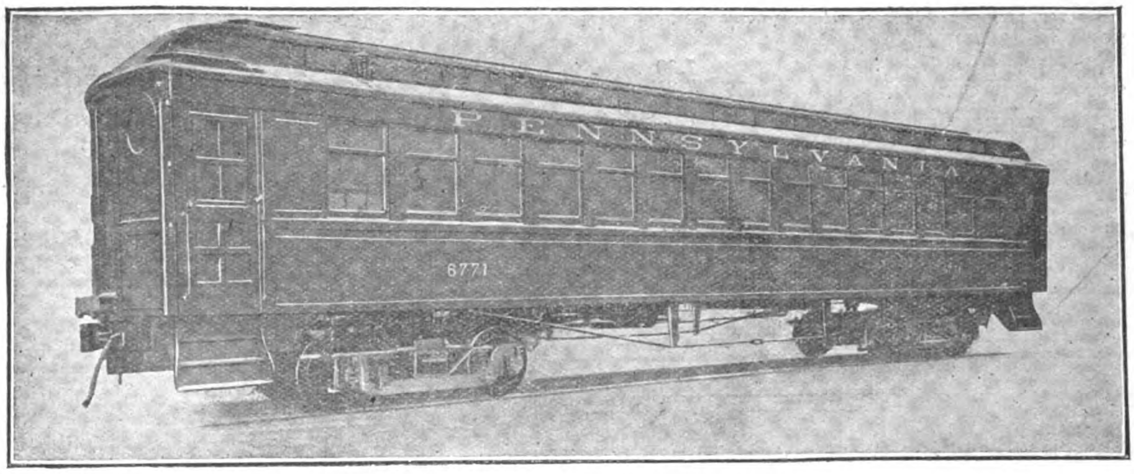
GENERAL OFFICES

CHICAGO 165 BROADWAY ST. LOUIS

NEW YORK

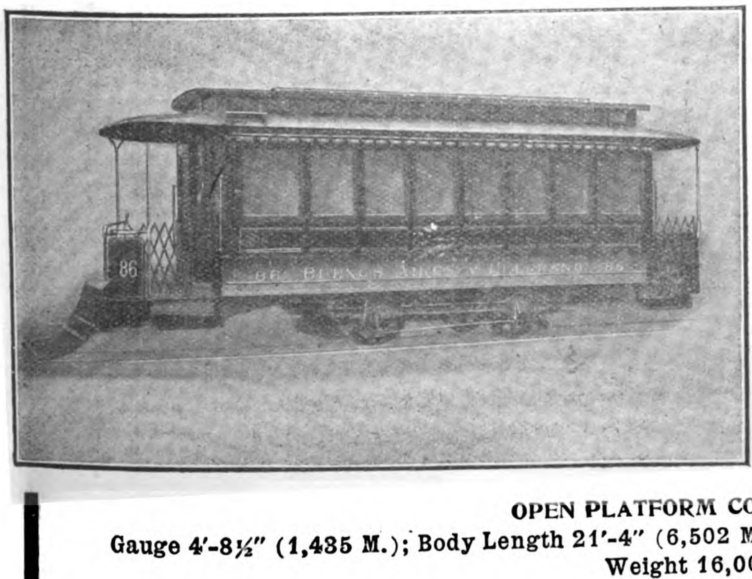
## CAR BUILDERS

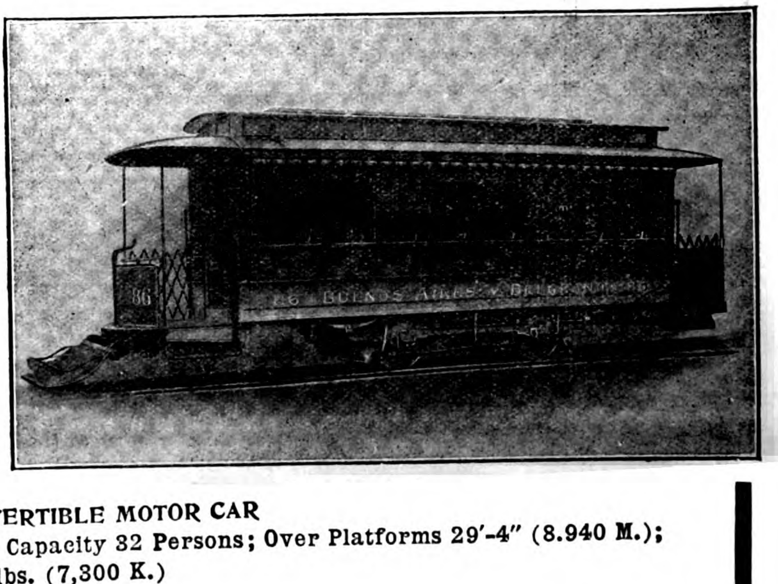
OUTPUT { 150,000 FREIGHT CARS / 1,500 PASSENGER CARS / 2,000,000 CAR WHEELS } PER ANNUM




HIGH SPEED INTERURBAN ELECTRIC CAR

Gauge 4'-8½" (1,435 M.); Body Length 46'-6" (14,173 M.); Capacity 58 Persons; Weight 75,400 lbs. (34,300 K.)





OPEN PLATFORM CONVERTIBLE MOTOR CAR

Gauge 4'-8½" (1,435 M.); Body Length 21'-4" (6,502 M.); Capacity 32 Persons; Over Platforms 29'-4" (8.940 M.); Weight 16,000 lbs. (7,300 K.)

Export Representative

## American Car and Foundry Export Company

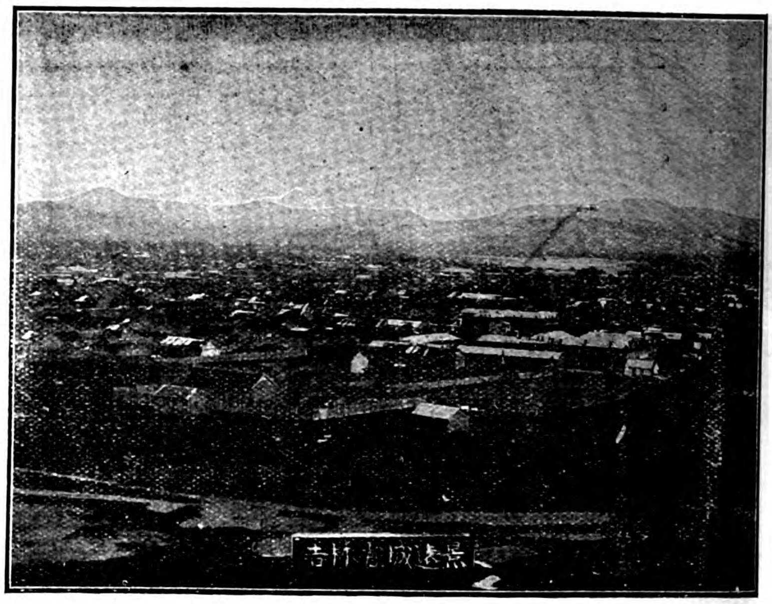
165 BROADWAY NEW YORK

# 中華民國政府吉長鐵路行車時刻表

# CHINESE GOVERNMENT RAILWAYS KIRIN-CHANGCHUN LINE.

## TIME TABLE.

| DOWN TRAINS Daily | | STATIONS. | | | UP TRAINS Daily | |
|---|---|---|---|---|---|---|
| Mixed | Mail | | | | Mail | Mixed |
| P.M. | A.M. | | | | P.M. | A.M. |
| 2.50 | 7.30 | dept. | TOUTAOKOU | arr. | 6.10 | 10.47 |
| 2.58 | 7.38 | arr. | CHANGCHUN | dept. | 6.00 | 10.37 |
| 3.05 | 7.41 | dept. | | arr. | 5.55 | 10.31 |
| 3.39 | 8.12 | arr. | KALUN | dept. | 5.24 | 9.57 |
| 3.43 | 8.14 | dept. | | arr. | 5.22 | 9.55 |
| 4.15 | 8.46 | arr. | YINMAHO | dept. | 4.50 | 9.22 |
| 4.18 | 8.48 | dept. | | arr. | 4.48 | 9.20 |
| 4.33 | 9.02 | arr. | HSIACHIUTAI | dept. | 4.34 | 9.05 |
| 4.38 | 9.04 | dept. | | arr. | 4.32 | 9.03 |
| 4.50 | 9.16 | arr. | YINGCHENGTZE | dept. | 4.20 | 8.50 |
| 4.53 | 9.18 | dept. | | arr. | 4.18 | 8.48 |
| 5.18 | 9.40 | arr. | TUMENLING | dept. | 3.56 | 8.24 |
| 5.26 | 9.50 | dept. | | arr. | 3.50 | 8.18 |
| | | arr. | CHAOCHIATIEN | dept. | 3.31 | 7.58 |
| 5.45 | 10.10 | dept. | | arr. | | |
| 6.09 | 10.31 | arr. | HUAPICHANG | dept. | 3.09 | 7.30 |
| 6.14 | 10.33 | dept. | | arr. | 3.07 | 7.23 |
| 6.30 | 10.46 | arr. | KUTIENTZE | dept. | 2.54 | 7.05 |
| 6.32 | 10.47 | dept. | | arr. | 2.53 | 7.03 |
| 6.49 | 11.03 | arr. | KIUCHAN | dept. | 2.37 | 6.48 |
| 6.53 | 11.05 | dept. | | arr. | 2.35 | 6.43 |
| 7.15 | 11.25 | arr. | KIRIN | dept. | 2.15 | 6.20 |



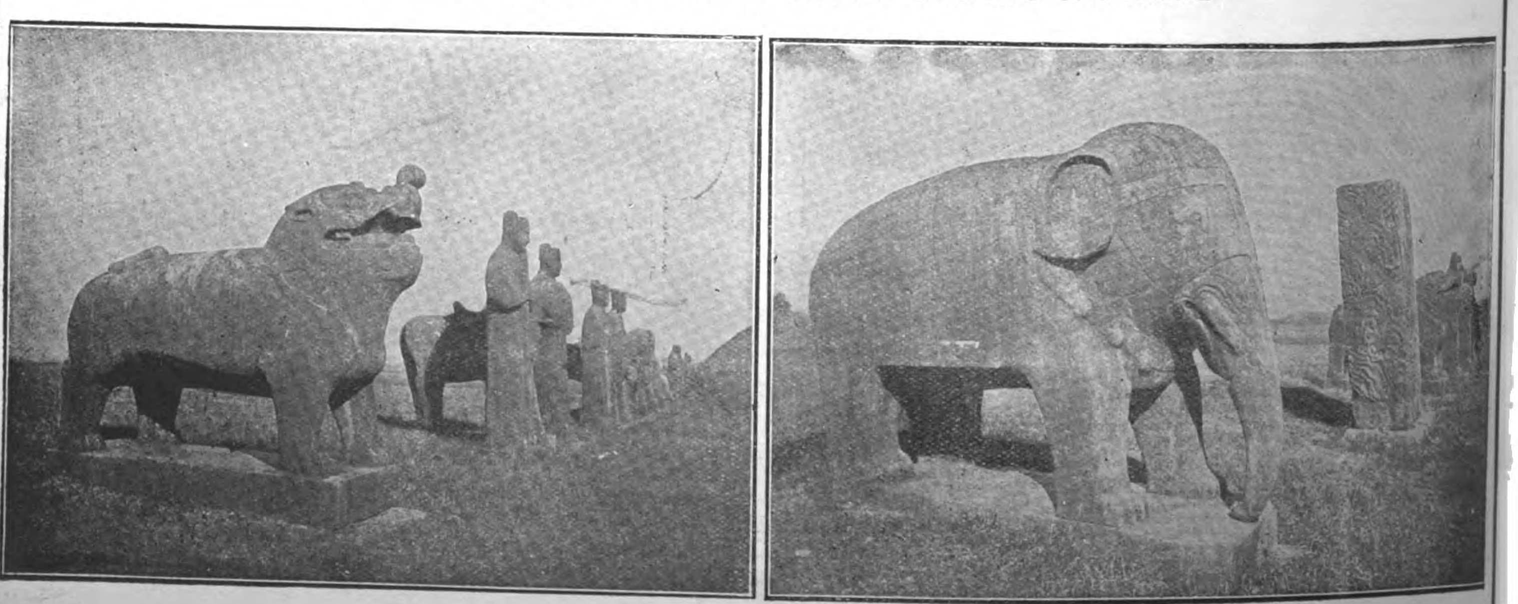
BIRD'S EYE VIEW OF KIRIN CITY

NOTICE:—"dept."=Departure. "arr."=Arrival.
1st July, 1916, and until further notice.

# THE PIENLO RAILWAY

## (KAIFENG-FU TO HONANFU)

## "THE FIRST SECTION OF THE PROJECTED CENTRAL TRUNKLINE"



THE SUNG TOMBS NEAR KAIFENG-FU ON THE PIENLO RAILWAY.

The line connects with the through service of the Peking-Hankow Railway at Tcheng Tchéou, enabling the traveller to visit Kaifengfu, the provincial capital of Honan, and the old capital of the Empire at Honanfu.

# General Electric Company

## Schenectady, N. Y., U. S. A.

### Products

Air Brakes
Circuit Breakers
Compensators
Compressors
Controllers
Converters
Cooking Devices
Fan Motors
Generators, Alternating and Direct Current
Generating Sets
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Hoists, Electric
Instruments
Lamps, Arc
Lamps, Incandescent
Lightning Arresters
Line Material
Locomotives, Mine, Railway and Industrial

## Safety First

For many years the G-E Engineers who design Type H Transformers have realized that a breakdown of transformer insulation is likely to be followed by loss of life as well as of property. As a result "Safety First" has been the ruling consideration in the design of every Type H Transformer.

With different ideals, the skill and experience of these engineers could have produced a transformer with a factor of safety equal to that of the ordinary transformer, and with appreciably higher efficiencies.

With "Safety First" as the ideal, the result is a transformer with efficiencies equal to any, but with a vastly higher factor of safety than others.

When you install Type H "Safety First" Transformers, you are not only protecting your service against interruptions but you are also giving maximum protection to the lives and property of the public.

5707

### FAR EASTERN REPRESENTATIVES

**Yokohama**—General Electric Company, 23 Water Street
**Yokohama**—Bagnall and Hilles, 42, Yamaschita Cho.
**Tokyo**—Mitsui Bussan Kaisha, Ltd., 1, Suruga Cho.
**Shanghai**—Andersen, Meyer & Co., 5 Yuen Ming Yuen Road
**Manila**—Frank L. Strong Machinery Co., Correspondent, 64-68 Calle Echague

### Products

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Motors
Motor-Generators
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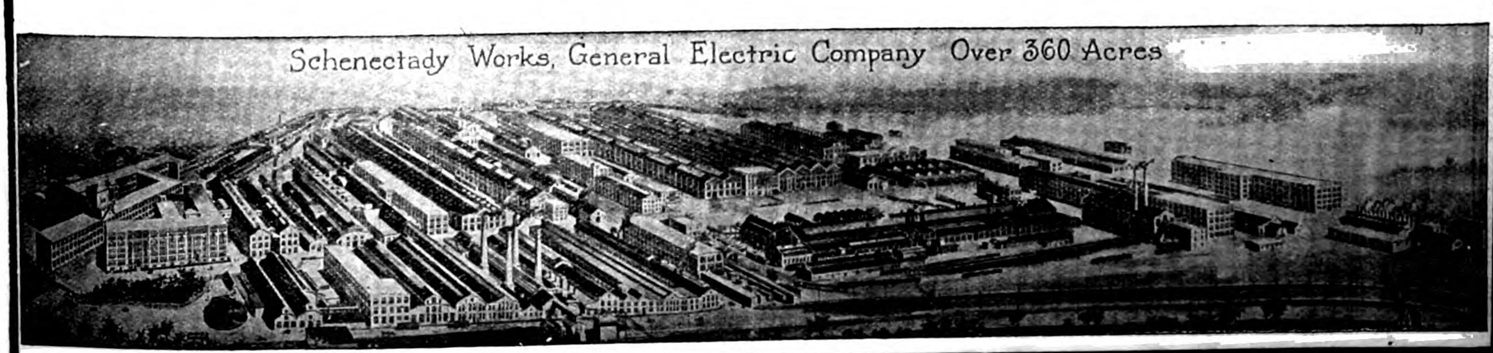
Projectors, Searchlight
Pumps, Electrically Driven
Railway Equipment
Rectifiers, Mercury Arc
Regulators
Rheostats
Supplies, General
Switchboards
Switches
Transformers
Turbine Generators
Watthour Meters
Wire and Cables
Wiring Devices



# FRANK L. STRONG MACHINERY CO.

Cable address LANDSTRONG

MANILA, P. I.

64-68 Echague
P. O. Box 772

## CONSULTING ENGINEERS & CONTRACTORS

### Exclusive Agents in the Philippines for:

GENERAL ELECTRIC COMPANY,
Electrical Supplies and Apparatus

PELTON WATER WHEEL COMPANY,
Water Wheels

NILES-BEMENT-POND COMPANY,
Lathes, Hoists

CHICAGO PNEUMATIC TOOL COMPANY,
Air Tools, Air Compressors and Accessories

AMERICAN TOOL WORKS COMPANY,
Lathes, Planers, Shapers, Radial Drills

AMERICAN BLOWER COMPANY,
Blowers, Exhaust Fans, Ventilating Units

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Milling, Grinding Machines, Tools

EAGLE & GLOBE STEEL COMPANY,
Tool Steel

LIDGERWOOD MANUFACTURING CO.,
Logging Engines

TRUSSED CONCRETE STEEL COMPANY,
"Kahn" System Building Products

OTIS ELEVATOR COMPANY,
Passenger & Freight Elevators

YORK MANUFACTURING COMPANY,
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BABCOCK & WILCOX COMPANY,
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B. F. GOODRICH & COMPANY,
Mechanical Rubber Goods

YALE & TOWNE MANUFACTURING COMPANY,
Chain Blocks & Hoists

CHAS. A. SCHIEREN COMPANY,
Waterproof Leather Belting

HOOVEN-OWENS RENTSCHLER COMPANY,
Hamilton-Corliss Engines

KELLOGG SWITCHBOARD & SUPPLY CO.
Telephone Apparatus and Accessories

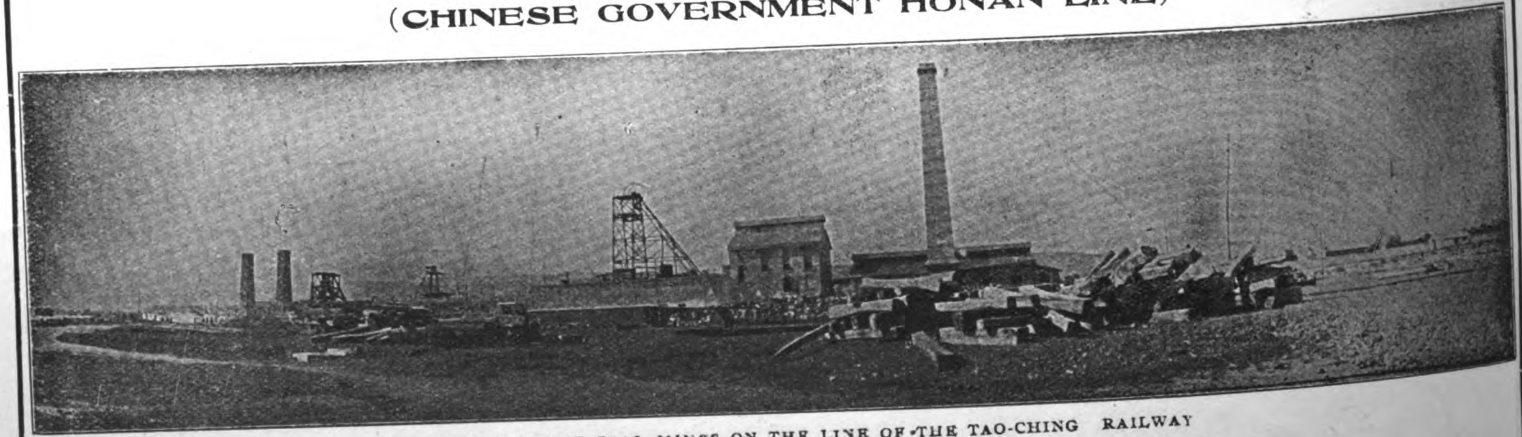
GARLOCK PACKING COMPANY

# CHINESE GOVERNMENT RAILWAYS

## THE TAO-CHING RAILWAY

TAOKOU TO CHINGHUA

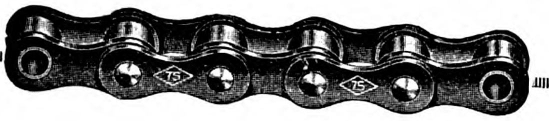
(CHINESE GOVERNMENT HONAN LINE)



GENERAL VIEW OF COAL MINES ON THE LINE OF THE TAO-CHING RAILWAY

### "China's Road of Anthracite"

THE TRAINS OF THIS LINE CONNECT AT SIN-SIANG-SIEN WITH THE THROUGH SERVICE OF THE PEKING-HANKOW RAILWAY. IT TAPS THE GREAT ANTHRACITE COAL DEPOSITS OF SHANSI, AND CONVEYS THE PRODUCTS OF THE MINES TO THE NEAREST NAVIGABLE RIVER.



# 'DIAMOND' CHAINS
for
## CYCLES

DIAMOND cycle chains are accurately manufactured of the highest quality steels, which are heat treated by a scientific and improved method. They are strong and dependable—being used by a majority of the American bicycle manufacturers as standard equipment.

Diamond roller cycle chains are furnished both ½ in. and 1 in. Pitch, and we also have a complete line of 1 in. Pitch block chains for cycles.

We are also prepared to serve the trade promptly with chains for motorcycles, automobiles, motor trucks and Power Transmission.

**Special care given to Export Shipments.**
**Correspondence solicited in any language.**
**Catalogue, samples and prices on application.**

**Diamond Chain & Mfg. Company**
**Indianapolis, Indiana**
**U. S. A.**

Cable Code: A. B. C. 4th & 5th Editions
Cable Address: "Chain" Indianapolis

# GOULDS PUMPS
FOR EVERY SERVICE

**represent a service that is unique in the pump field**

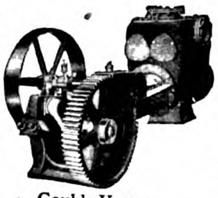
Goulds Deep Well Working Head

Goulds Triplex Stuff Pump

AS the world's largest manufacturer of pumps for every service this Company is in a unique position to serve you. We are not placed in the position of the manufacturer who makes one type of pump only and must therefore be emphatic in recommending his style of pump for your needs.

Our method is to analyze the pumping conditions as we find them and recommend the type of pump —whether it be centrifugal, reciprocating or hand —best suited to your individual requirements.

And when our recommendation is made you can be sure of getting a pump that will give you satisfactory service.


Goulds Vacuum Pump

Tell us your pumping conditions and we will gladly send you our recommendations without obligating you in any way.

Catalogues on request. Please mention service for which pump is required.

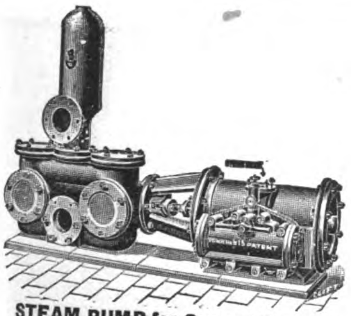
Goulds Double Suction Centrifugal Pump

**Write Our Nearest Office**

**THE GOULDS MFG. CO.** Main Office and Works **Seneca Falls, New York**

*CABLE ADDRESS: "Glavis Seneca Falls"*
*CODES: A.B.C., Liebers, West. Un.*

**Anderson, Myer & Co., Shanghai. Bagnall & Hilles, Gomei Kaisha, Yokohama.**
**Pacific Commercial Company, Manila.**
*Agents for Power Pumps*


**STEAM PUMP for General Purposes.**

# WE MANUFACTURE
# PUMPS
## FOR EVERY PURPOSE

To be worked by HAND, STEAM, BELT, WIND, WATER or ELECTRIC POWER.

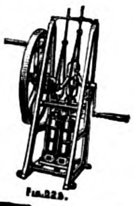
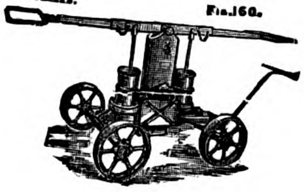
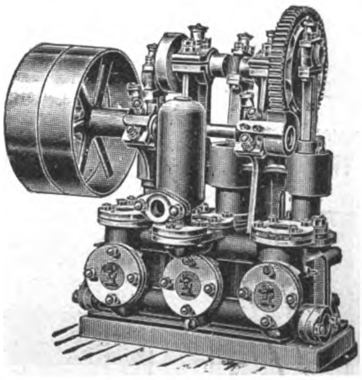


Fig.228.

Fig.160.





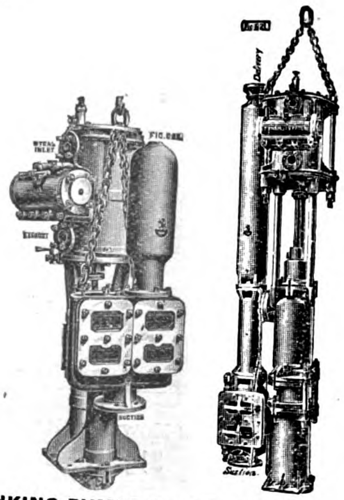

**SINKING PUMPS for COLLIERIES, MINES, Etc.**

Fig.191.

***Write for "Eastern" List.***

# JOSEPH EVANS & SONS
(WOLVERHAMPTON) LTD.

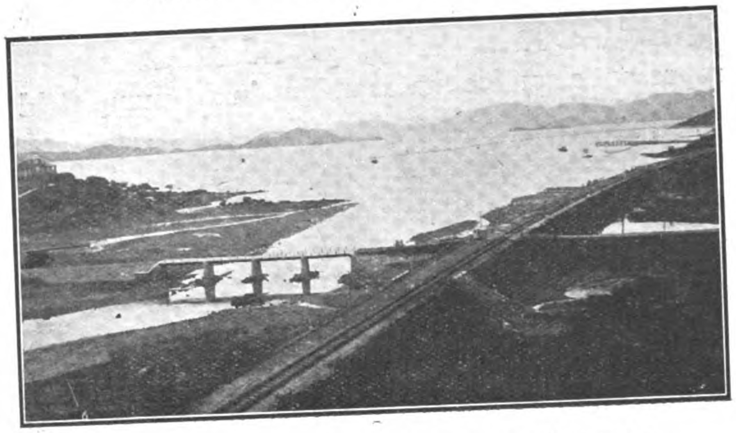
CULWELL WORKS,
**WOLVERHAMPTON, ENGLAND.**

Fig.188.

# CANTON-KOWLOON RAILWAY

VIEWS ON THE BRITISH SECTION (22 MILES)

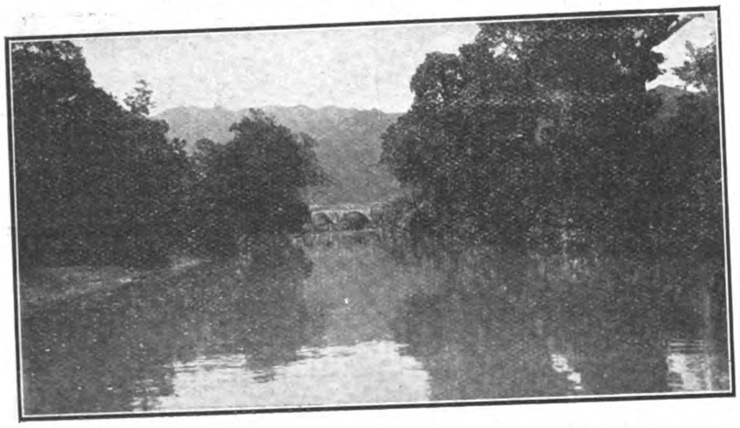
VIEWS ON THE CHINESE SECTION, 89 MILES. (Chinese Government Railways)



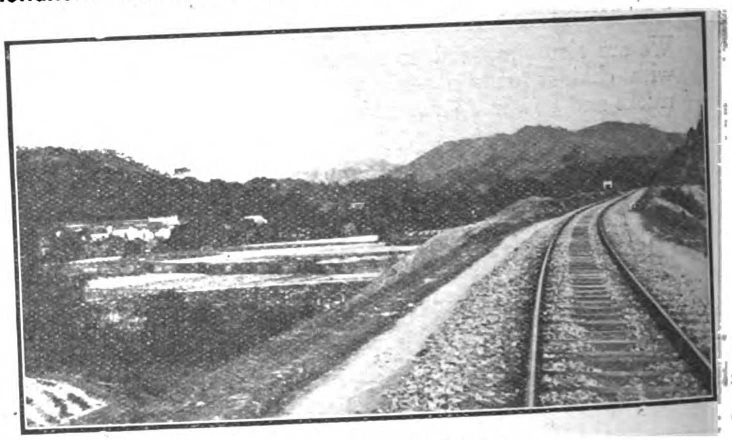
Canton-Kowloon Railway—Approach to Kowloon

Scenery Near Cheung Muk Low—C. K. Railway

**QUICKEST AND CHEAPEST ROUTE BETWEEN CANTON AND HONGKONG THROUGH VARIED AND BEAUTIFUL SCENERY**

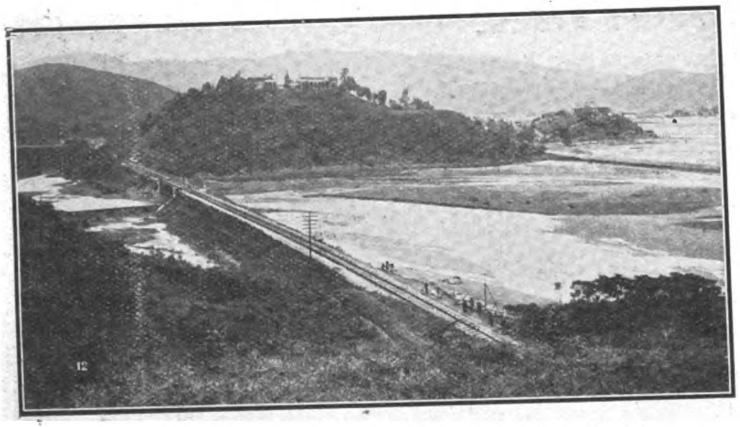


Canton-Kowloon Railway—Scene Along Route

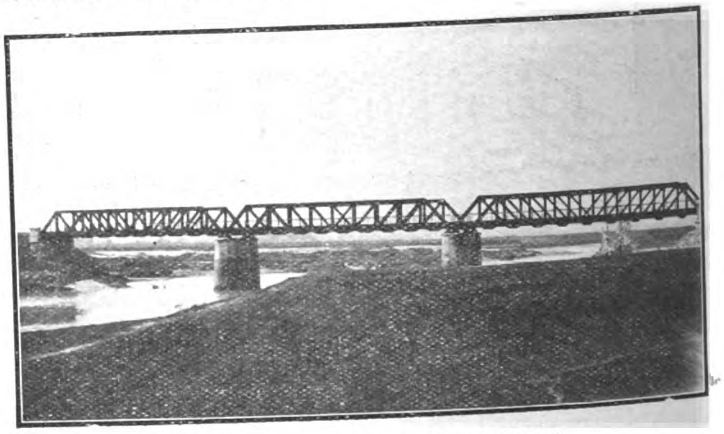


Scenery Along Route

**THREE EXPRESS CORRIDOR TRAINS EACH WAY DAILY—HOT MEALS AND OTHER REFRESHMENTS SERVED**

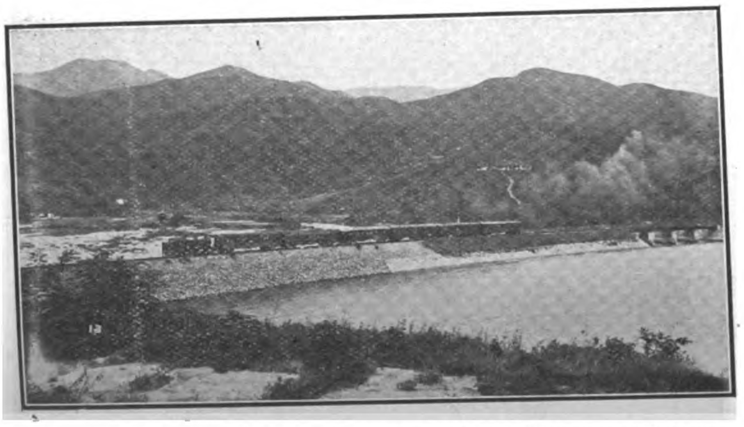


Canton-Kowloon Railway—Crossing Tide Flats

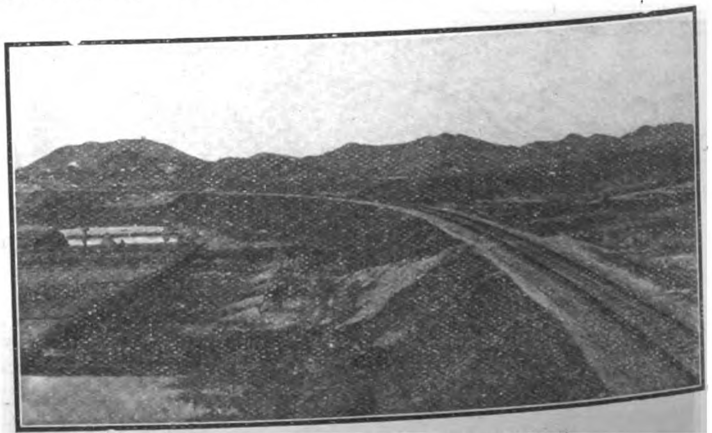


Kan Sui Bridge—C. K. Railway

**3½ HOURS BETWEEN UP AND DOWN TRAINS FOR BUSINESS MEN OR TOURISTS AT CANTON OR HONGKONG**



Canton-Kowloon Railway—Embankment Approach to Bridge



Grand Curve Near Sheung Ping

## TIME TABLE

Leave Hongkong (Kowloon) *8.05, 9.30 a.m., *12.10 p.m., & 2.30 p.m.
Arrive Canton (Tai Sha Tou) 11.45 a.m., 5.30, 3.50 & 7.15 p.m.

Leave Canton (Tai Sha Tou) *7.25, 8.35 a.m., *12.30 p.m. & *3.20 p.m.
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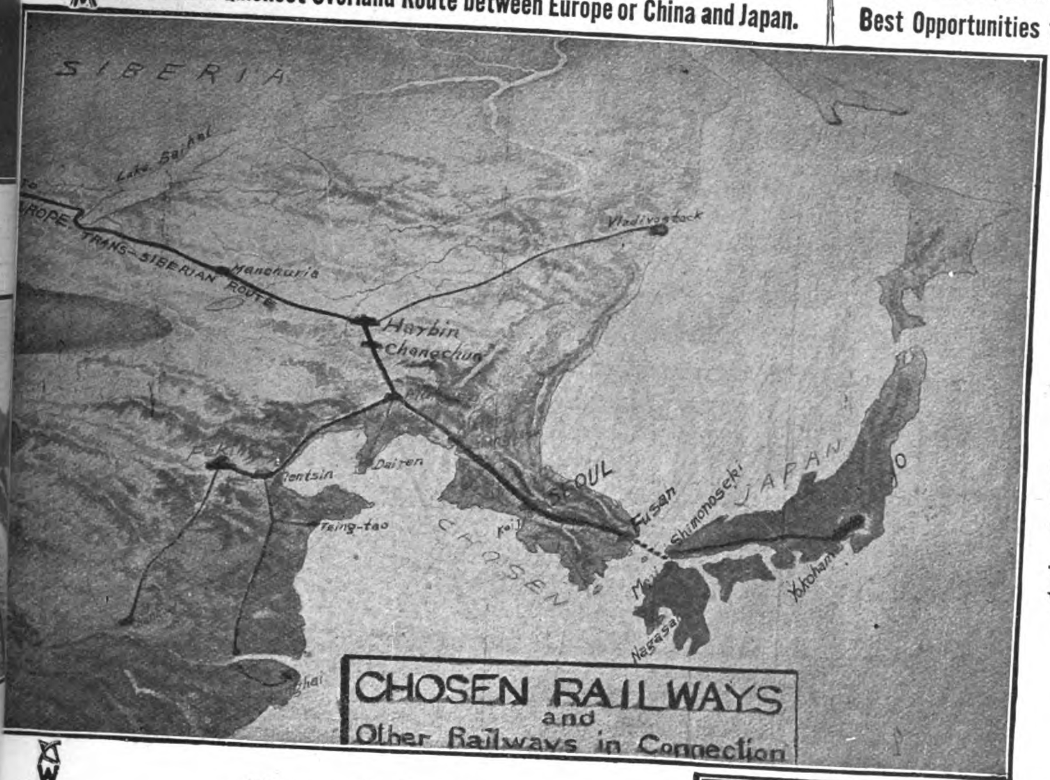


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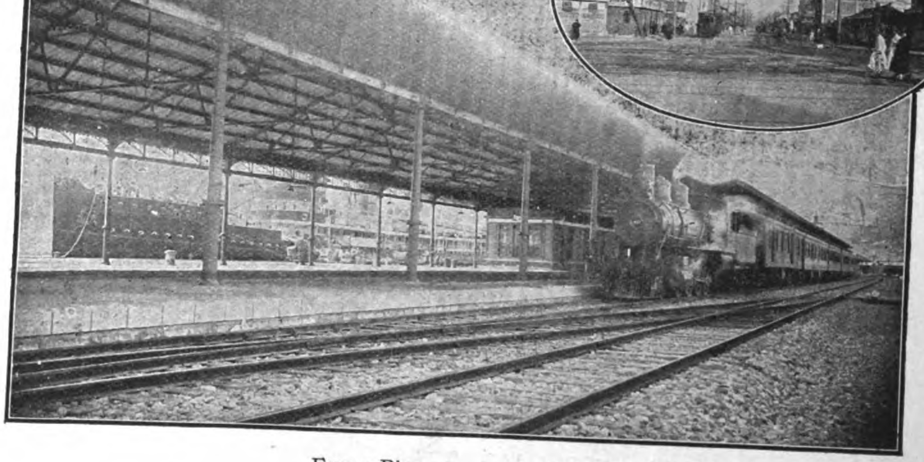
† No through traffic to or from points of the Chinese Eastern Railway and the Russian State Railways.



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A scene in Keijyo (Seoul)

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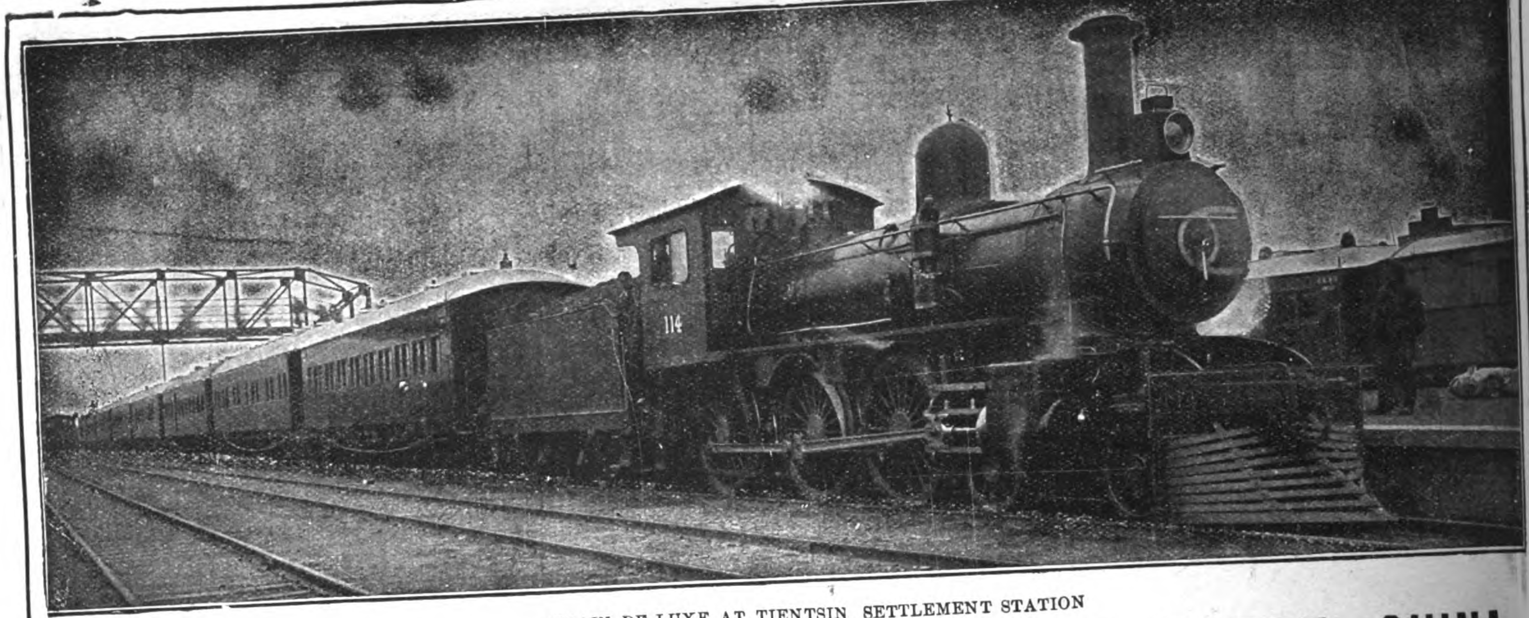

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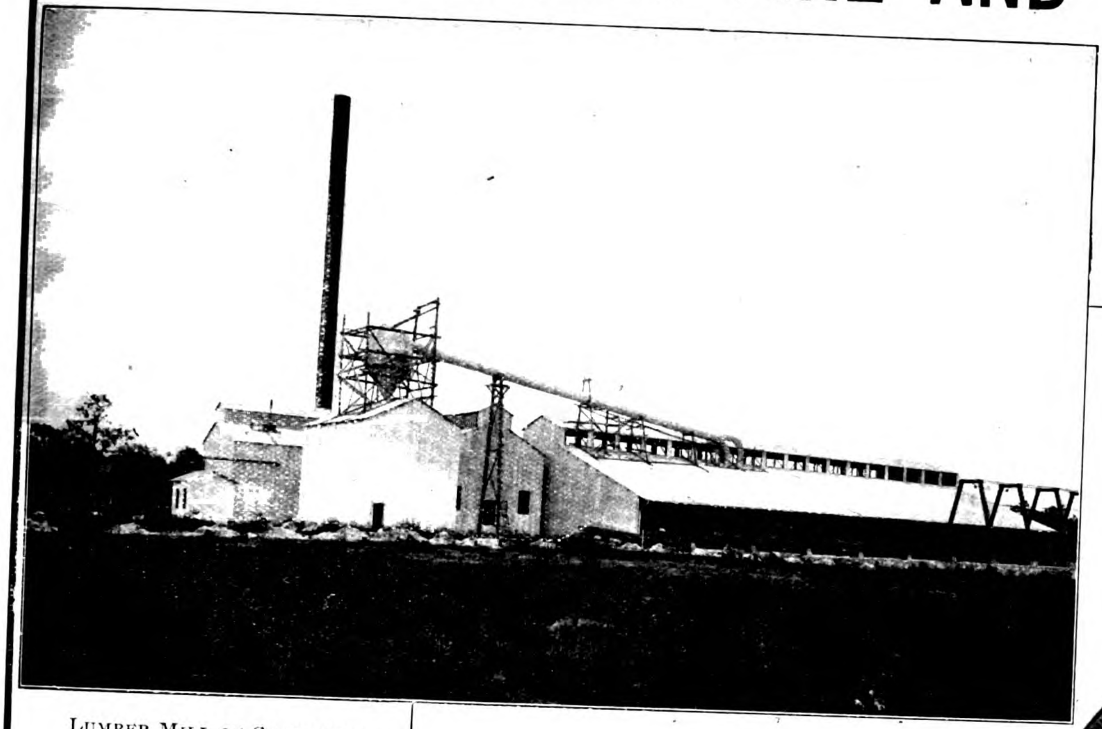

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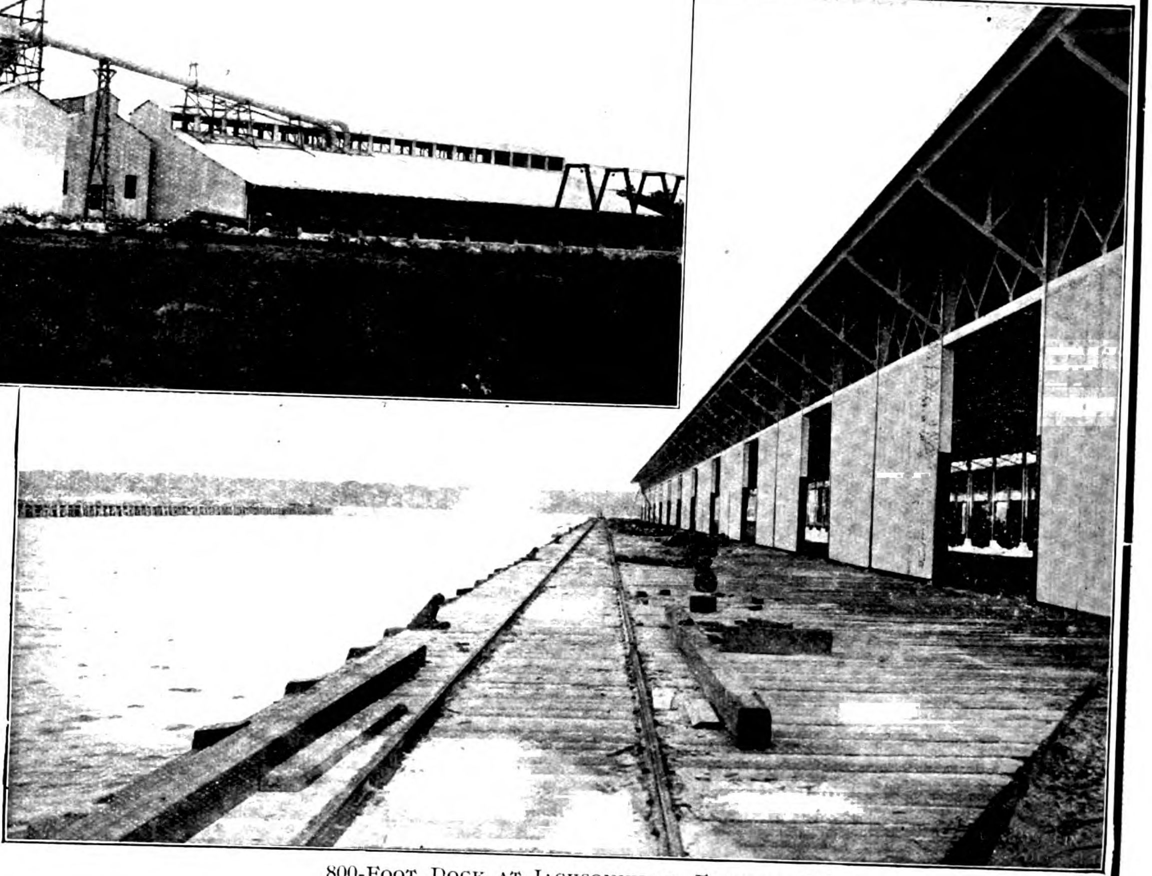

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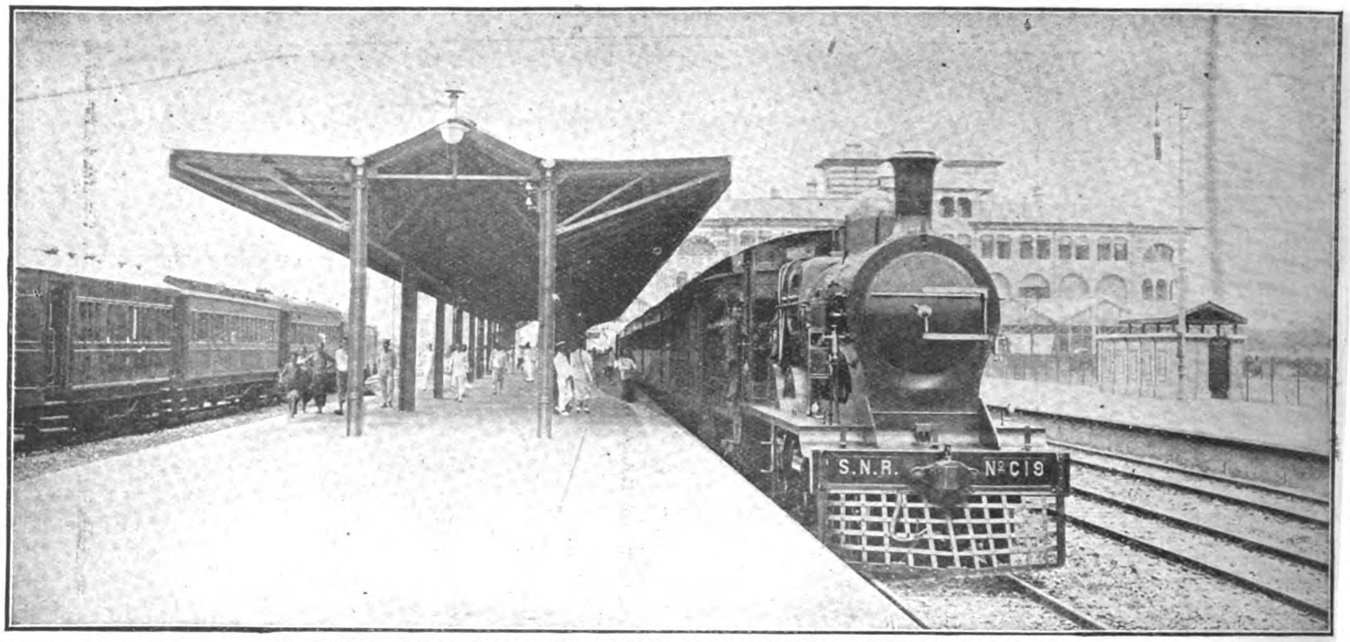


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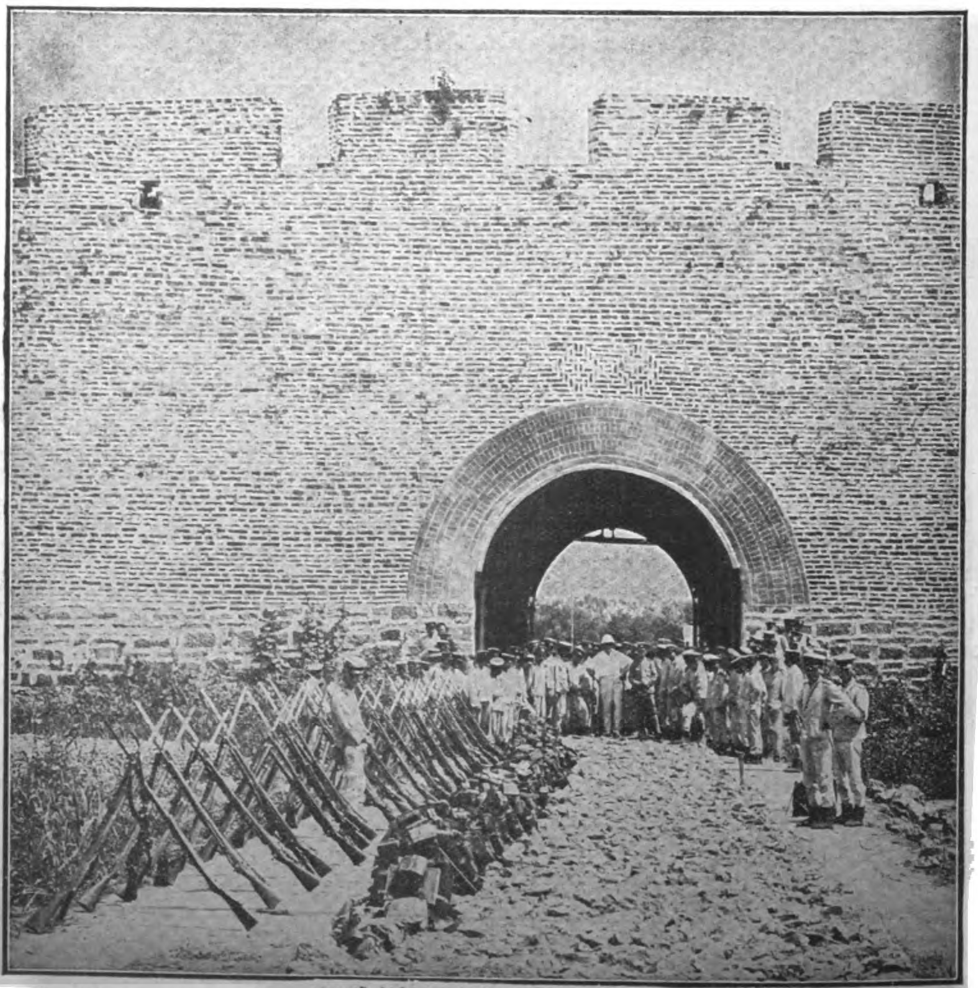

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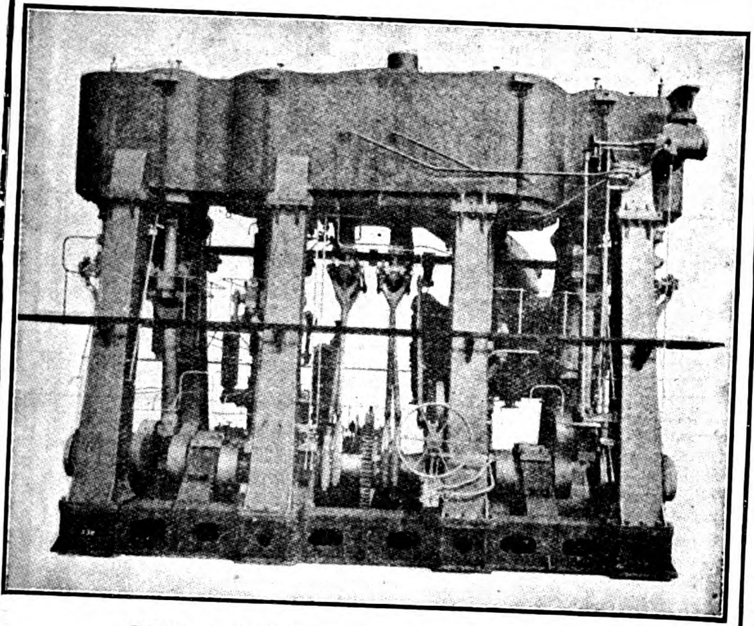

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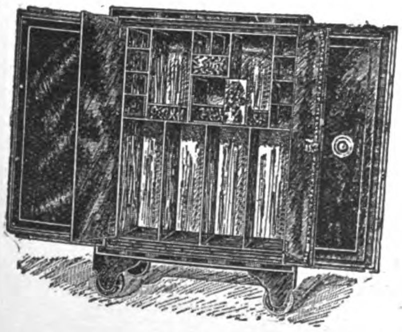

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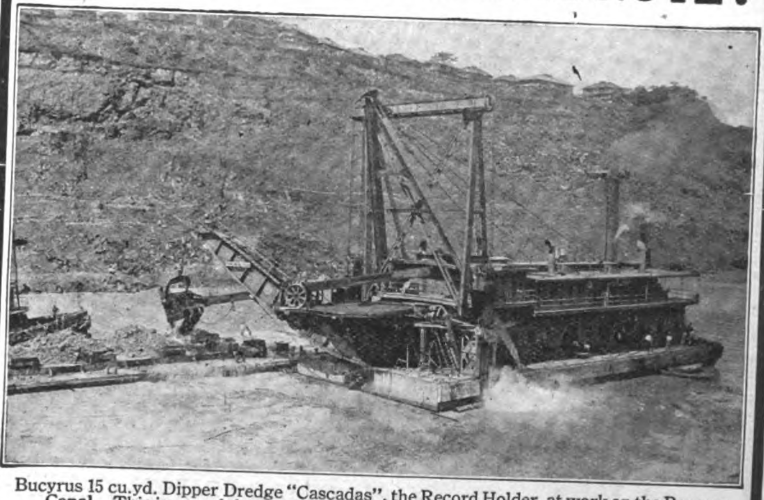

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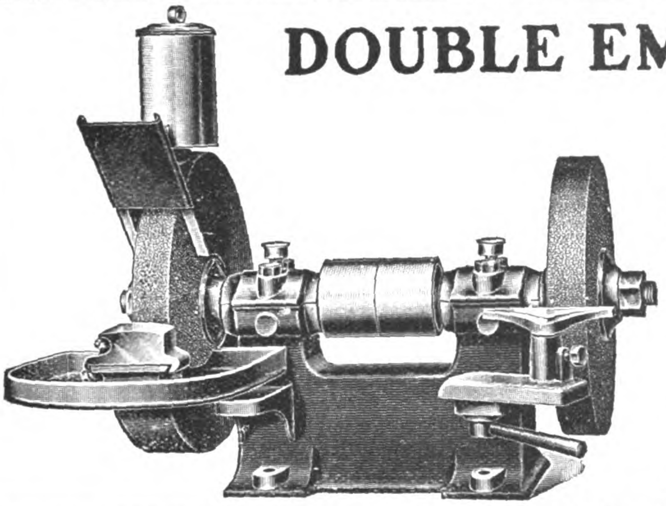

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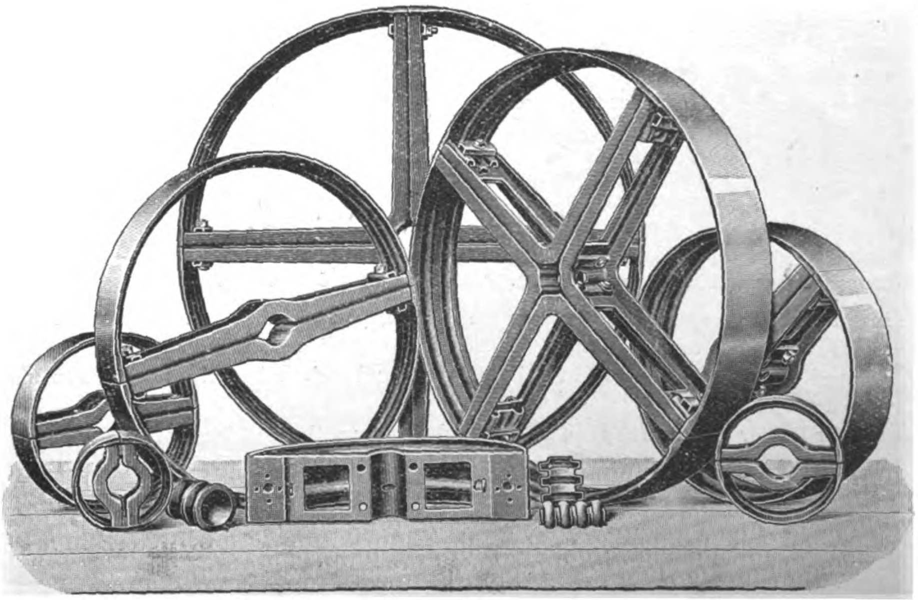

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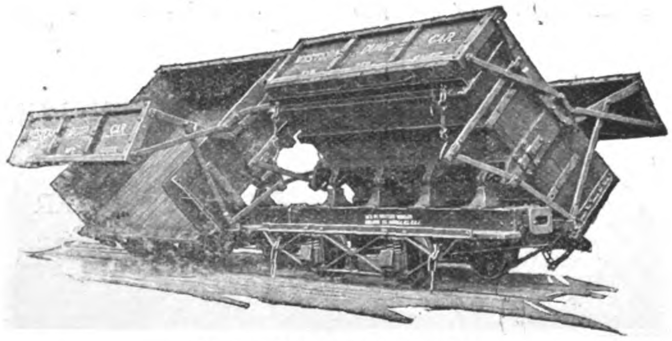

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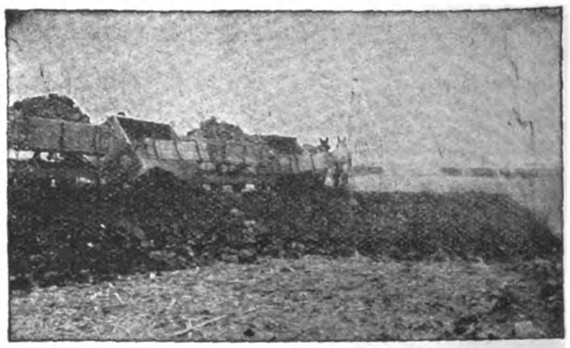

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THE FAR EASTERN REVIEW

COMMERCE :-: ENGINEERING :-: FINANCE

VOL. XIII. SHANGHAI, AUGUST, 1916 No. 3

# A HEART TO HEART TALK WITH THE EDITORS OF JAPAN

## Geo. Bronson Rea

When Baron Shibusawa visited the United States last year on his mission of peace and a better understanding, he invariably prefaced his talks to the newspapers with the statement, that "the relations between his country and America were always intimate and cordial until about 1905 when the situation was altered by an unfortunate policy of discrimination against Japanese immigrants in California." Constant iteration and reiteration of this statement has convinced the Japanese from the highest to the lowest, that America was solely responsible for the change in friendly sentiment.

Baron Shibusawa proclaimed that he wanted a frank and honest talk, straight from the hearts of men to men, and while he undoubtedly had these private talks with those he visited, it was impossible to induce him publicly to answer questions that in any way conflicted with the viewpoint of Japan. We hold the utmost respect for the venerable philanthropist and humanitarian of Japan, but fair-play demands clarification of the point raised by him in his interviews and talks. There are always two sides to every question. We will attempt to explain the American viewpoint and present some pertinent and incontestible facts.

American sympathy and friendship for Japan is proverbial. Notwithstanding all the recriminations on either side it still exists. If these sentiments have in any way altered, and a feeling of distrust has arisen to take its place, it is traceable to Japan's own methods, and the difficulty of understanding her viewpoint. American friendship for China is also whole-hearted, and we desire that these pacific people, who for centuries have lived up to their ideals that Right is Might, should be treated with justice; otherwise there can be no peace in the world of to-morrow. The Powers stood by Japan while she was passing through her crucial period of transition, and we hold that Japan should, in turn, exercise restraint and patience with her weaker neighbor while she is also putting her house in order.

American sympathy and friendship for Japan was fully demonstrated during the war with Russia. It is now an acknowledged fact, that, although victorious on land and sea, prolongation of the war meant financial exhaustion to Japan, with the possibility of certain defeat as her armies were lured into the bitter cold of northern Manchuria, far removed from their base of supplies at Port Arthur. As a matter of fact, Russia contends that had the war lasted a few months longer, the tide of victory would have turned in her favor. This statement can be substantiated by various admissions of Japanese publicists made since the termination of the war. As a sample of these, we take the most authoritative from the *Memoirs of Count Hayashi*, who says:—

**"Although a great deal of criticism has been published about the unsatisfactory conditions signed at Portsmouth, those who know the real circumstances recognize that at the time the negotiations were in progress it was absolutely necessary for us to make peace. There were similar reasons for the conclusion of the convention under discussion, (the second Russo-Japanese Convention) and it is in such circumstances, when explanations to the public are obviously impossible, that diplomatists find themselves in the greatest embarrassment.........It was absolutely impossible for anyone who knew the real facts of the internal conditions and of the military situation to expect us to reap much advantage from the Treaty of Portsmouth. It was natural that the treaty should have many imperfections."**

It is essential that this truth be established and admitted by the Japanese, for, at that juncture, the hard-pressed Japanese Government solicited President Roosevelt to use his good offices to bring about peace. True to the traditional friendship existing between the two peoples, President Roosevelt immediately responded, and succeeded in bringing about the negotiations terminating in the Peace of Portsmouth. The diary of the late John Hay, mentions the incident and so removes the ban of silence and permits a freer newspaper mention of this otherwise sealed chapter of international diplomacy. As a result of the friendly response of President Roosevelt, Japan saved her hard won position, but was compelled to forego the money indemnity on which her people had set their hearts. It is only necessary to read Baron Suyematsu's book, *The Risen Sun*, written during the progress of the war, to understand how keenly the Japanese anticipated this financial compensation from Russia. There was to be no compromise. Russia would have to pay up.

At the end, however, the Japanese Government knew they could never enforce the demand for an indemnity. Count Hayashi's confession admits of no misinterpretation. Baron Komura, the Japanese peace plenipotentiary, fully understood the meaning of his mission when he departed from Japan for Portsmouth. He foresaw that on his return his political future would be blasted. Komura was a noble man, a true Samurai, a patriot. He sacrificed himself for the best interests of his country. The indemnity could not be enforced, so the enormous costs of the war had to be shouldered by a people already overburdened with taxation and debts.

The world cannot forget the violent anti-American demonstrations which swept over Japan when the news of the

Portsmouth peace terms was communicated to the masses. It was only last year that some Japanese jingoes suggested the idea of celebrating the anniversary of these anti-American outbursts to keep alive the feeling of hatred then engendered. Can it be denied that the people of Japan, enraged at having to bear the costs of the war themselves, accused the United States of intervening in behalf of Russia to deprive them of the lawful fruits of victory? Ignorant of the financial straits of their government, and seeing only the glorious victories of their arms, they could never understand why they had to relinquish the right to a huge indemnity.

I ask any honorable editor of Japan whether his government has ever fully informed the people of its dire straits at the time it requested President Roosevelt to intervene in behalf of peace? Why did the Japanese authorities permit a friendly act at a time of great national stress, to be deliberately misconstrued and serve as the motive of violent anti-American outbreaks and the genesis of anti-American sentiment? Why, up to the present time, are the people of Japan permitted to believe that America intervened to deprive them of the indemnity? Was this a grateful return for the disinterested friendship of America? As long as Japan of her own accord refuses to acknowledge the service, or fails to acquaint her own people with the facts, Americans can only wonder at a code of political ethics which approves of such methods.

Japan forgets these matters, and her publicists are fond of tracing the change in the friendly relations to the school incident which culminated *after* the Peace of Portsmouth. The agitation against the admission of Japanese children to the schools of San Francisco was initiated in May, 1905, or four months before the peace convention, and before President Roosevelt was approached by Japan in the interests of peace. The attitude of President Roosevelt in responding to Japan's request, and in his subsequent emphatic stand in defense of the school children is ample evidence of the kindly and friendly feeling that then existed. Did the Japanese ever stop to think that it was these same methods of evading the facts, denying the truth, and misrepresenting the situation, that was largely responsible for the change in American sentiment towards them? Americans respect above all things straightforwardness and truthfulness. This is particularly true of American journalists who create public opinion.

The Peace Convention at Portsmouth was a great international event. The leading newspapers of the world sent their most trusted and competent correspondents to report the proceedings. American correspondents assigned to this work, many of whom are now editors of prominent journals, still retain vivid recollections of the Japanese methods there employed. It is better that Count Hayashi tell the story. It is more authoritative and convincing coming from Japanese sources.

**"When the negotiations were proceeding at Portsmouth it was Dr. Dillon (of the London Daily Telegraph) who controlled the American Press for the benefit of de Witte. At that time most of the prominent British and American correspondents who had collected at Portsmouth had gone there inclined to be in favour of Japan. Dr. Dillon used these men to publish the real existing state of affairs without any reserve whatever, and was unrivalled by anybody on the Japanese side in creating a favorable public opinion. He did it almost entirely by relying on the influence of the American papers, to whose correspondents at Portsmouth he always stated the exact position of affairs. On the Japanese side, on the other hand nothing was done like this. True, there was a member of the Japanese Foreign Office Staff attached to the Peace Commission, and it was supposed to be his duty to receive the newspaper men. In fact he had nothing else to do but that. But he made his principal task the denying of every statement which might appear.**

**"In view of my experience in diplomacy I considered that such a course was a matter of the greatest regret. Comparing the action of the sides at Portsmouth as regards the Press, it was only natural that the umpire's fan was pointed at Japan from the very outset of the negotiations, and she was never able to recover from the unsatisfactory Press position into which she allowed herself to fall, a position which was principally due to the fact that the Japanese authorities preserved far too much silence as to the progress of the negotiations."**

This description is true to fact. The sympathy of America was overwhelmingly in favor of Japan at the opening of the conference. But the first actual contact between American journalists and Japanese tactics undermined the long established understanding, and created misgivings that still exist. Do the Japanese recall the name of the member of the Foreign Office Staff assigned to this duty? It was Mr. Aimaro Sato. Twelve years later, or to be exact, at this very date, this gentleman, having climbed the ladder of Japanese officialdom, is on his way to Washington as Ambassador, to succeed Viscount Chinda. Japan has confided the delicate task of preserving American friendship to the official who was so largely responsible for the change in sentiment. Surely the Japanese have not forgotten. American journalists have not forgotten Mr. Sato. Let us hope that Mr. Sato has changed with age and experience, as this is no time for the employment of similar tactics.

With the establishment of these pertinent facts, we can now turn to a passage in Mr. K. Kawakami's book, *Asia at the Door.*

**"When the plenipotentiaries of Japan and Russia met at Portsmouth to negotiate peace, the tide of public opinion began to flow against the Japanese. By the time the conference came to a close Russia had virtually been substituted for Japan in the sympathies and good-wishes of the American newspapers. Not only had Witte defeated Komura within the walls of the historic 'storehouse' utilized for the conference, but he had outwitted the Mikado's envoy by befriending the press of the world, whose representatives were gathered at the Hotel Wentworth. The late Marquis Komura with all his shrewdness and foresight, never fully realized the power wielded by the press. He was always so cocksure of the justness of his stand, that in adhering to it, he never recognized the necessity of having editorial sympathy on his side.** *Most of all, he disliked the corrupt means so frequently employed by those statesmen who with Robert Walpole believe that 'every man has his price.' What wonder that almost simultaneously with the triumphant exit of Count Witte from the great diplomatic stage at Portsmouth, American newspapers began to publish all manner of insinuations with regard to Japan.*" (The italics are ours).

**"This new turn of public sentiment was at once seized upon by those great interests whose business was and is to make capital out of the war scare often created by themselves. They manufacture war talk in order to increase demand for the war ships and guns and powder which they manufacture. There is no doubt that the clandestine activities of these interests greatly assisted in the alienation of American sympathy from Japan."**

Unbiassed readers will accept Count Hayashi's authoritative story as the logical and correct explanation of what took place at Portsmouth. The urgent reasons which compelled Japan to make peace, made a full explanation of the true state of affairs obviously impossible during the negotiations. Under these circumstances, the methods of Mr. Sato were perhaps pardonable and justified. The American correspondents, intensely sympathetic with Japan, and reflecting the editorial policy of their respective papers, could hardly be expected to understand the necessity of secrecy and the constant denials of apparent truths, at a time when Japan was posing proudly before the world as the great conqueror. On the other hand Japan could not admit the truth, without losing her dearly won prestige. Japan was then in exactly the position that the Entente Allies are now trying to place Germany, with this difference, the world is informed that no sympathy or charity will be extended to the latter until she is crushed. Suppose America and the Powers had entertained the same feelings towards Japan? What position in the world would she hold to-day?

Yet here we have Mr. Kawakami, accusing the American newspapers of having their price, and accepting bribes from Russia. This is one of the most striking illustrations of these reprehensible tactics of Japan's publicity agents in America in besmirching the characters of others in order to create sympathy for their own cause. It is all the more objectionable when it is remembered that Mr. Kawakami has received more kindly

consideration and free space in the columns of American newspapers than any other champion of Japan. He is an American citizen. We have looked upon him as one of us. In return for this generous treatment from American editors, he does not hesitate to impeach their honor and integrity when the interests of his native land require the acceptance of her viewpoint. If the American press has its price, it would be interesting to learn from Mr. Kawakami how much he and his co-workers in America have expended in the publicity propaganda on which they are now engaged. There are some very prominent newspapers in the United States who openly espouse the cause of Japan. Has the Japanese Government learned a lesson from Count Witte? At any rate, his statement is only another proof, that in the eyes of the Japanese, those who disagree with their viewpoint, do so from dishonest motives. Without reflecting on the integrity of British journalists, the following quotations from the *Memoirs of Count Hayashi*, are singularly appropriate at this juncture:—

**"No account of Hayashi's tenure of the Vice-Ministership should fail to notice his influence on the Japanese vernacular Press. His own connection with Mr. Fukuzawa, the proprietor of the *Jiji Shimpo*, gave him a special interest in that paper, which became and remained until his death the organ of his views. Hayashi was the first Japanese statesman to realize and utilize the power of the *fudo* (pen-brush). By the intimate relations which he established with the leading journals, Hayashi laid the foundations of that extraordinary system of Press control which has since been one of the features of the Japanese bureaucracy.**

**"It is a matter for regret that he did not confine his activities to the Press at home, and to such foreign papers in Japan as were willing to become the subsidized organs of the Government. But wherever he went, he carried his Press Bureau with him. On his arrival at Peking as Minister, it was noted as a sign of his up-to-date methods, that three accredited journalists were included in his official suite.** *The system which he initiated has since been carried to extremes, as was shown by the refusal a few years ago of the Minister of Finance to submit to the Diet the accounts of the Imperial Japanese Financial Minister in London, as the sums in question included various items for the entertainment of London journalists."*

**Commenting on the estimation in which Japan was held prior to the Sino-Japanese war, Mr. Pooley says:**

**"On the whole there was a disposition in England to treat Japan well. The progress she had shown and the nerve she had displayed created a sentimental feeling in her favor, which was well displayed by Tennial's cartoons in 'Punch'.** *The Japanese Foreign Office fostered and developed this attitude by the most wonderful press campaign the world has ever seen. The very careful manner in which the oracle was worked closed the usual avenues by which a knowledge of the true sentiments, the true policies and the real intentions of Japan could pass to the outer world."*

Could it be possible that the Japanese have adopted the tactics of Russia, and have set aside large sums for corrupting the press? Perish the thought! Japan is so sure of herself, and the justness of her cause, that she would never, never be guilty of such methods. Yet it would be interesting to know exactly what it costs to operate all the ramifications of the publicity work in America. It is reported that the Japanese Government, either directly or indirectly through semi-official connections, expends annually about $250,000 gold in America alone. How much has been invested in American newspapers? What about the big deal to buy a controlling interest in a leading New York daily, to be edited by one of the American auxiliaries of the system? The war postponed the deal. It is now called off. A near relative of one of the interested parties prattled the story in a New York drawing room. The facts are known.

No! Japan would never corrupt the press. She has no funds for this purpose. But any one, even an American, who takes the opposite viewpoint in favor of America, must, of necessity, be in the pay of armament and ammunition manufacturers, and he who believes that China is not receiving a square deal from Japan, is sowing seeds of hate and discord at the behest of his Chinese employers. You can't beat the Japanese at this game. If you agree with them, you are showered with attentions, the Mikado pins the Order of the Sacred Treasure (a very appropriate name) on your manly breast, and turns you loose with the obligation to reciprocate, and uphold Japan at any and all times. If you fail to see things eye to eye with Japan, there is no help for it; you are a rascal, a disturber of the peace, a bribe-taker, and the star American writer attached to the publicity bureau in New York, calls down anathema on your head, and holds you up to the people of the country as an unscrupulous journalistic adventurer. It will be necessary for me to refer again to this fundamental defect in Japanese methods, but at present, I desire to point out and emphasize as strongly as possible, that this policy of denials, of misrepresentation, of tergiversation, is the predominant characteristic of the publicity system in America.

The most important work of the press bureau in America seems to consist in denying at once any facts that may leak through the meshes of the censorship or the official news factories in Japan. It undertakes the task of faithfully and exclusively reflecting the real viewpoint of Japan, by contradicting the opinions and words of prominent Japanese publicists when they touch on foreign policy. When Mr. Taketomi, Mr. Kayahara, Mr. Takekoshi, the Marquis Okuma, or others, make statements in Japan that vary in the least from the idea that Japan is the most pacific nation in the world, it is the duty of the press bureau in America to contradict and classify them as irresponsible utterances, and when an American attempts to tell his own countrymen what he knows about conditions in the East after years of experience on the ground, the press bureau either direct or through some of its American auxiliaries, discredits the audacious writer, by attacking his motives, questioning his veracity and integrity, charging him with being in the pay of the Chinese, and other unmanly tactics calculated to destroy his usefulness and reputation. The object of the press bureau in America is to keep always before the American people the picture of beautiful Japan, its geishas, its temples and tinkling bells, its cherry blossoms and chrysanthemums, the spirit of Bushido, the wonderful feats of the Samurai, Yamato Damaishi, and other five-o'clock-tea twaddle for the edification of the ladies and artistically inclined males who revel in that class of literature. It is this mask which effectively disguises the implacable, arrogant and defiant features of militant Japan as revealed through the writings and speeches of her jingo editors and statesmen. Japan may be the most pacific nation in the world; she may have the most honorable intentions towards her weaker neighbors; she may be preparing a huge army and navy for purely national defence; but we cannot overlook the significant fact that the press of the country reeks with articles from her foremost statesmen, professors and others, which give the lie direct to the above sentiments. "The press is the nursery for statesmen in Japan," we are told by Mr. Zumoto. It is. "There exists the closest connection between the Government and the vernacular press in Japan. The Bank of Japan, the Ministry of Finance and the Foreign Office each have their own organ of publicity, while every leading statesman has some paper wedded to his views," testifies Mr. Pooley. The press reflects the true spirit of Japan. It is almost impossible to find a writer who deprecates militarism and aggression on smaller and weaker states. But with these truths so apparent to those who have the opportunity of reading for themselves, the official press propagandists in America deny and impugn the motives of any one who attempts to explain this side of the situation to the American people.

Don't argue with anyone who holds contrary opinions—discredit him. This is the way the oracle is so successfully operated. It succeeded in England; it is being worked in America. Let me recall a case or two.

Shortly after the twenty-one demands were presented to President Yuan at Peking, I arrived in London, with the full facts. I was discredited before my arrival, and, in addition, through the influence of the Japanese Embassy, the foreign editor of *The Times* had cabled a reprimand to his Peking correspondent for sending such exaggerated and untruthful reports. A few weeks later I arrived in New York. The oracle was working overtime in America. There it had audaciously

suggested to the trustful Secretary of State, that he should accept only the news coming from Tokio. At a public meeting of the Christian Church Societies, held at that time in New York, Dr. Sidney L. Gulick, a most pronounced pro-Japanese publicist and lecturer, openly declared that "the Chinese news is manipulated by German interests for the promotion of tension between China and Japan as well as America and Japan." He then gratuitously added, "*News emanating from Peking is thoroughly unreliable and judgment should always be suspended until confirmed.*"

Here we have a full disclosure of Japanese methods. Discredit the other fellow—hit him hard, and hit him quickly, and if you can, hit him below the belt. So Dr. Sidney L. Gulick, proudly wearing the insignia of the Sacred Treasure, and doing his Master's bidding, lost no time in pointing the accusing finger at Germany; as though Germany didn't have enough to answer for without this. In attempting to discredit and destroy the usefulness of the Peking correspondents, the agent of Japan overlooked the important fact that with one exception, the newspaper correspondents stationed at Peking were most loyal and patriotic Britons. The exception was the American correspondent of the Associated Press, wedded to an English lady. Can we picture these gentlemen filing into the German legation compound at Peking, and taking their instructions from the representatives of the Kaiser? This made no difference to the system. Somebody had to be discredited, and quickly, to establish the Japanese side of the case, long enough to accomplish her end. So the American tools of Japan insulted the intelligence and patriotism of the British newspaper correspondents at Peking and accused the high Chinese government officials of falsifying the facts. There are other instances, but the above are sufficient to establish the point.

This is the fundamental defect of the system that the Japanese Government is expending enormous sums to sustain. It is money wasted. If Japan hopes to gain the complete confidence of the American people, let her put an immediate stop to this campaign of denials and misrepresentation. Let her place her problems frankly before the world. It is the only sure method of attracting attention and creating sympathy.

What is the object of a press campaign in America, working in close harmony with an official news service, supervised by a vigilant censorship, and supported by government control over incoming and outgoing cables and mails? Why is it so essential to the peace of the two nations that the Japanese viewpoint be so vigorously propagated? Why is it not just as important that the American viewpoint be fully explained to Japanese readers? Is it because the Japanese are so cocksure of the justice of their side of the many issues, that they refuse to tolerate any arguments in contradiction? Would the Japanese authorities, the Japanese press, quietly consent to the maintenance and operation of a foreign publicity bureau in Japan, whose work might in any way conflict with the established government policy? The audacious foreigner would be politely advised to leave the country.

Yet the Japanese Government directly or indirectly is openly supporting a press propaganda in the United States in the interests of peace between the two nations; peace on the terms of Japan, a peace that contemplates the full acceptance of the Japanese viewpoint. To accomplish the object its agents do not hesitate to descend to all manner of unworthy tricks to obstruct a full and intelligent discussion of the other sides to the issues. There is an American viewpoint, an honest one, and a friendly one. There is also a strong Chinese viewpoint, as to what is best for their country. It is only necessary to quote from the Japanese press, to over-prove that the Chinese, and those Americans interested in China, are fully justified in doubting the sincerity of Japan's protestations of good faith towards this defenseless nation. Yet with all these facts before us, with the proofs of Japanese aggressions upon China clear to the world, with the emphatic statements of the Japanese press which leave no room for doubt, we are told that we must accept the Japanese viewpoint or there will be trouble. Let us recall the words of Dr. Iyenaga, the head of the Japanese publicity bureau in America, when, at the Hotel Plaza on May 19 of last year, he uttered the following warning:

**"Unless America comes to an understanding of the Japanese viewpoint, I indulge in the prediction that there will be more serious disturbances in the relations between Japan and America than has been caused by the California affair."**

It it true that he also added that Japan intended to be the best friend of China, but the quality of that friendship was subsequently made plain to the world by the disclosure of the twenty-one demands and the text of the treaties signed by China under compulsion. Notwithstanding all the talk of friendship, there has been no indication on the part of Japan that she is sorry or willing to apologize for her brutal conduct of last year, or restore to China the plunder taken by force. On the contrary, there is every indication that further humiliation is in store for China.

Yet the Japanese loudly insist on the acceptance of their viewpoint, and, as Mr. K. Kawakami says, "the trouble with American critics of Japanese policy in China lies mainly in their persistent, willful refusal to recognize the Japanese point of view." He admits:

**"We know full well that our attitude toward China is highly repugnant to the Chinese, who still dream of their past glory and of the age when Japan was but their pupil."**

So the Japanese viewpoint is to humiliate China, and *save her in spite of herself*, notwithstanding that Count Hayashi confesses that the civilization of China is superior to that of Japan. In concise terms, the Japanese viewpoint is that they are going to do what they jolly well please in China—and, "the Powers be damned." The Chinese viewpoint is completely ignored. The Japanese admit that their attitude is highly repugnant to China, but Might makes Right, and China must bow down her neck to be ground under the heel of the conqueror. If China consents to all this, the Japanese will be very friendly. They can have peace—peace on Japan's terms.

The agents of the Japanese official press bureau in America accuse me of ferreting out every fault and defect about Japanese character, Japanese manners, Japanese civilization. I have learned that it is most difficult for any individual journalist to have his views on Far Eastern questions accepted by the editors of American papers, so successfully has the oracle operated in the United States. Therefore, I have reluctantly been compelled to base all my statements directly on the writings and utterances of Japanese authorities.

Two years ago, in a second hand book-store located on East 59th Street in New York City, I acquired over one hundred books on Japan, China and the Far East. They had just been placed on sale. Examination revealed them copiously marked with marginal notes; special passages were underlined. The bookseller informed me that he had bought the library of a noted Japanese writer who was retiring from literary work. The autograph name on the fly leaves of many of the books, disclosed the fact that they had formed part of the library of the most prominent Japanese publicist in America. Being an intelligent observer, I can hardly be censured for profiting by my investment and following a lead which was so carefully pointed out to me.

In conclusion, The Far Eastern Review intends to remain a true friend to Japan; we will be just as friendly to Japan as she is to China, and, in view of the fact that the Japanese Government deems it essential to maintain at great expense an elaborate publicity system at home and in the United States—a system that can only operate successfully by concealing the other side of the questions, and by discrediting all those who honestly entertain opposite views, we will hold it as a patriotic and journalistic duty to employ every means within our limited power, to acquaint the editors and leading men of America of the facts of the other side of the questions. If the Japanese viewpoint is so vital that it requires huge sums to propagate it in America, then it is high time that the American and Chinese viewpoint should receive elucidation. If Japanese gold is to be employed to discredit every reputable American journalist who has the temerity to disagree with Japan's viewpoint, Japanese publicists must not be offended, if they, in turn, are subjected to legitimate criticism by presentation of irrefutable figures and facts.

# FOREIGN PROPAGANDA IN AMERICA

(*From the Japanese American News*)

Since the outbreak of the European war America has become a favorite rendezvous of foreign propagandists. Everybody knows that Germany has been conducting a vigorous campaign for the purpose of maintaining peaceful relations with this country and of creating ill-feeling towards England, and incidentally towards Japan. There is also a British and French campaign, though its methods seem to be subtler and less obtrusive than those of Germany.

Then there is a Chinese propaganda and a Japanese propaganda. The last-named two are the campaigns in which we are here particularly interested. Judging from the methods employed on both sides, there is obviously a wide difference in the Chinese propaganda and the Japanese. The Japanese propaganda is instituted for the sole purpose of maintaining and promoting peace and friendship between this country and the Mikado's empire. The Chinese propaganda is being conducted for the purpose of creating hostility between America and Japan.

It was about four years ago that Professor Jeremiah W. Jenks of the University of New York established in New York City a publicity bureau called the Far Eastern Bureau, financed by the Chinese government, or more accurately the Yuan Shih-kai administration. The object of the bureau was to enlighten the American press and public on the affairs and conditions in China. To attain this end the bureau published bulletins and circulars of such a nature as would show China in favorable light. So far the movement was not only legitimate but laudable, and we had every reason to wish it godspeed.

When the war broke out resulting in the Japanese campaign against Kiau-chow the Far Eastern Bureau became very censorious in its attitude towards Japan. When, after the fall of Tsingtao, Japan presented the now historic demands to the Chinese government, the Bureau's attitude towards Japan became hostile. Even then we had no reason to complain, for we knew that it was the duty of the Bureau to defend China. The Bureau is at liberty to criticize Japanese activities in China. As far as the criticism is confined to relations between China and Japan we are ready and willing to listen to all it has to say, even though it may express itself in words not palatable to us.

Besides the Far Eastern Bureau there are obviously a number of propagandists for China. Mr. George Bronson Rea is the most prominent of these propagandists. We do not say that all of these men are employed by the Chinese government. Perhaps some of them have no connection with the Chinese government. That is immaterial. The important fact is that these propagandists are acting upon the conception—to us a mistaken idea—that the estrangement of Japan and the United States is conducive to the creation of sympathy among Americans for China. They seem to think that in order to arouse America's sympathy for China they must destroy the friendship which the Americans now entertain towards Japan. To attain this end they have been painting Japan in the blackest colors. They have been ferreting out every fault and defect about Japanese character, Japanese manners, Japanese civilization. They have been striving might and main to create a bogey of the Japanese invasion of California and Japan's sinister designs upon Mexico and South America. They have injected the immigration question and the California anti-alien land law controversy into the Chino-Japanese situation, and have been arguing that Japan's ambition is not only to dominate China but to force emigration upon the United States and Central and South America.

This method of campaign is more unmanly than unjust. It is criminal to sow seeds of discord and hostility between such friendly nations as Japan and the United States all for the purpose of serving and promoting the interests of a third power. And when these propagandists for China resort to mendacity in their zeal to serve China and to alienate American sympathy from Japan, their conduct is worse than criminal. With all our profound respect for Professor Jenks, director of the Far Eastern Bureau, we must deeply regret that he is evidently in sympathy and even co-operating with this class of propagandists.

When we say that Japan and the United States are friendly, we use the term "friendly" in conventional or diplomatic sense. We reluctantly but frankly admit that the feeling of the Japanese towards the Americans and vice versa is to-day no longer so cordial and happy as it was up to a decade ago. If things are permitted to drift with no restraining influence, relations between the two countries will become perilous.

It is due to this unfortunate knowledge that efforts have been put forth by the Japanese leaders of thought and affairs both here and in Japan to conserve and promote what is left of the former cordial relationship with the United States. To this worthy movement it should be the duty of all public-spirited Japanese in America to extend a helping hand. We only wish that the campaign can be conducted on a scale commensurate to the importance of the situation. As it is, we doubt that it can really accomplish anything to counteract the propaganda undertaken by other countries expending money with liberal hand.

Had Japan's leading publicists and statesmen wanted to break away from the United States, they certainly would not have launched any propaganda, however slight, for the preservation of peace between the two countries, but would have left things drift as they may, regardless of consequence. Had the Japanese wanted to fight the United States why should they have contributed $246,000 towards the relief of the earthquake stricken city of San Francisco when the city had just expelled innocent Japanese children from its public schools; extended a magnificent welcome to the American squadron which visited Japan in 1907; and expended $1,500,000 for the Panama-Pacific International Exposition upon the heels of the enactment of the anti-Japanese land law of California? In our judgment, the Japanese propaganda in America is wholly justifiable because its purpose is laudable. It is to the credit of the Japanese that the methods of this propaganda have always been legitimate, no recourse having ever been made to mendacity and falsification.

What the Japanese want to accomplish in this country is simple.

First, they want to convince the American people that they have no intention to force emigration upon the United States.

Secondly, they want to assure America that Japan has no intention to encroach upon the Monroe Doctrine.

Thirdly, they want the American authorities, Federal, State or municipal, to accord the Japanese residents here the fair and just treatment that is accorded other nationals.

Fourthly, as the corollary of the foregoing, they want to see citizenship extended to the Japanese.

Fifthly, they want to prove that American interests in China will not be injured by the extension of Japanese influence in that country.

Underlying it all is the intense desire of the Japanese to preserve amicable relations with the United States. In a word, Japan's propaganda in America is a propaganda of peace and friendship. This is the vital point which all Americans must remember.

On the other hand, the Chinese propaganda is a propaganda of hate, discord and hostility. It aims to embroil Japan and the United States over issues which in reality do not exist or which can be amicably settled. Out of such a propaganda no good can come to any nation. China, in particular, has nothing to gain but much to lose by this so-called pro-Chinese campaign in this country. It is indeed regrettable that the American agents of China are, wittingly or unwittingly, leading her into a most dangerous path.

# THE PROBLEM OF THE RACES—II

## The Weight of Numbers

In the previous article in last month's FAR EASTERN REVIEW, it was made clear that the great racial issue, which the Japanese insist is based on color prejudice, arises solely from economic causes intensified by the abnormal fecundity of the Mongolian races, which, in turn, is a corollary to their religion of ancestor worship. Due to this divergence in the customs of the two civilizations, the white races of Europe under normal conditions will double their numbers in 90 to 100 years, while the Mongolian races adhering to their conception of sex philosophy will accomplish the feat in from 50 to 60 years.

In discussing this aspect of this most intricate and delicate problem, it has been my purpose to establish the fact that the Asiatic races adhering to polygamy, concubinage, female slavery, child marriage, and other attendent evils, have entered into a new phase of their existence, and are now multiplying at a rate far exceeding their past records. If not controlled, this abnormal increase, as the years pass, will menace the civilization of the West, and unless we are prepared to meet it, we will go under, in the fight for existence, smothered by the sheer weight of numbers. In the past, floods and famines, plague, cholera and pestilence, earthquakes, tidal waves and typhoons, unsanitary surroundings, utter absence of hygiene and medicine, infanticide and desolating wars have placed an effective check on the abnormal multiplication of the population. If all these drawbacks to racial expansion are eliminated; if river control, railways, hygiene, sanitation, hospitals, inoculation against disease and other reforms are applied, and the lives of countless millions are annually preserved, the question arises, what effect will all this have on the normal increase? Given a strong, enlightened and centralized government, maintaining internal peace and order, what influence would be felt on the birth rate of a people possessed of an intense man-making mania, with the increased facilities for intemperate indulgence? What would be the ratio of increase if the Oriental were freely admitted into America where, in comparative luxury and amidst favorable surroundings, he could live up to his transplanted family traditions? Unfortunately, there are no complete or accurate statistics available for an exhaustive study of this question. An analysis of the partial figures supplied from Japanese official records, however, will help to form a fair estimate of future race expansion.

Japan has controlled Formosa for twenty years. In that time only 122,000 Japanese have emigrated to the Island. The official statistics show that the native or Chinese population in 1897 was 2,455,353. In 1912 this number had increased to 3,476,697 or 41.5 percent in fifteen years. At this rate the native Chinese will double their numbers in 36 years, notwithstanding the general unsanitary conditions of the towns and the yearly visitations of preventable diseases.

The Japanese have controlled the Kwangtung Leased Territory since the war with Russia. It is highly improbable that they have offered any special inducements for the Chinese to settle there, or that the latter have willingly flocked to this lost section of their native land. Any increase in population must necessarily result from natural causes. We find by consulting the Japanese official records, that the Chinese population of Kwangtung on December 31, 1906 numbered 403,754, and 496,696 at the end of 1912, or an increase of 92,942 or 19 percent in six years. This means they will double their numbers in 31.5 years.

The first official census of Korea since the country came under the control of Japan was made in 1910. The native Korean population was then reported as 12,934,282. At the end of 1914, they had increased to 15,169,923 or 17 percent in four years—a doubling of the population in twenty-four years. This phenomenal increase was commented upon at the time, by a few Japanese papers, but no one attempted to seek for or analyze the causes.

The fundamental forces at work are best described by Homer B. Hulbert, in "The Passing of Korea." He says:—

**"The utmost promiscuity prevails amongst the lower classes. A man may have half a dozen wives a year in succession. No ceremony is required, and it is simply a mutual agreement of a more or less temporary nature. The biblical picture of the Samaritan woman at Jacob's Well who had had five husbands is descriptive of many thousands among the lower class people in Korea......It may be said in a general way that the chief occupation of the respectable Korean woman, whether of high or low degree, is motherhood. Like the ancient Hebrew woman, she says, 'Give me children or I die'."**

In "The Story of Korea," by Joseph H. Longford, he says;

**"Both sexes have strong physical passions, and no barriers of religion, morality, or custom prevent their gratification when opportunity permits it without certainty of discovery."**

Is it any wonder that the Koreans are multiplying rapidly under the rule of Japan? There have been no great floods, famines, plagues or other checks on the natural increase in the last ten years. Peace and order have prevailed. They have increased and multiplied exceedingly. Even these figures do not tell the full tale, as they take no count of the large number who have emigrated across the border into Manchuria and the Russian Maritime Provinces.

The increase of the population in Korea finds a comparison in the multiplication of the Eta class in Japan. In old Japan the Eta were the outcasts, the beggars and scavengers. They were not counted in the census. The dogs and horses had a happier time than these unfortunates. The late Emperor, in a special Proclamation of October, 1871, abolished the designation of Eta, and raised them to full citizenship with the other people of the country. Dr. Griffis in his admirable book "The Japanese Nation in Evolution" is authority for the statement that the total number of Eta when they were enfranchised was over 200,000. Dr. Tsumura Hidematsu, of the Kobe Higher Commercial School, writing last year of Japan's social problems, in the *Shin-Nippon*, says that the problem of the Eta is the most important before the country, and adds:—

**"There are nearly a million persons belonging to the Eta class in this country. They are confined to certain localities and are not permitted to extend their boundaries. Being thus handicapped in their surroundings, their only comfort is found in the satisfaction of animal passions. They are very prolific."**

If these figures are correct, it would indicate that the Eta class in Japan living for the gratification of their physical passions, have doubled their numbers in eighteen years, or are increasing five fold in forty-five years. If the Koreans are now reproducing in twenty-four years, there is no good reason to doubt the approximate figures advanced to illustrate the fecundity of the Eta, which is 32 times as great as those races adhering to monagamy and imposing restraint on their reproductive powers.

In a series of articles entitled "Japan's Place in the Sun" published in over thirty prominent American newspapers last January, extracts from an article in *The Japanese-American* were reproduced in an attempt to ascertain from their own statements what the ratio of increase would be in America, where all the drawbacks to race diminution are removed. Since that time, further official light has been thrown on the subject, by revealing the number of females residing in America at the time. In making the deductions, it will be understood that they are based directly on Japanese figures.

*The Japanese-American* of San Francisco, writing editorially on the reproductive powers of the Japanese in America, in May, 1914, says:—

**"It is gratifying to note that the number of Japanese in America is increasing at present. The latest returns show 91,483 Japanese in the United States proper to-day, an increase of 1,752 over last year." (The official figures of the Foreign Office at that time give the number as 79,642, while the *Japan Year Book* gives the number at the end of June, 1913 as 77,615) "Returns show 5,273 men returning home, while 3,541 entered, a decrease of 1,732 men. The decrease has been refilled by an increase of women and children, and this phenomenon suggests the idea of permanent residence developing amongst Japanese, and also an increase of Japanese who possess the rights of citizenship in America. Although this is undoubtedly a welcome sign we cannot be altogether optimistic over the view, when we consider the reproductive power of the Japanese. Reproductive sources, for instance, are fast declining, for no less than 1,700 young Japanese returned home last year. The one consoling fact at this juncture, is that qualitative strength has markedly increased—enough to counterbalance what has been lost in number. If we do not attempt to gain what is lost in number, however, no remarkable development amongst Japanese industries may be expected. The Imperial Government should negotiate with the Washington Government to revise the Gentlemen's Agreement so as to allow for the difference in the number of young Japanese returning home and that of those going to America to enter the country as immigrants, and this may not be a difficult proposition. Japanese in America should act in this direction and regain what has been lost by the Alien Land Law."**

**"There are 5,732 boys and 5,476 girls in America and the number is increasing at the rate of 2,500 children annually. As most of the Japanese in America to-day are determined to live in America, at least semi-permanently, marrying wives from home and forming homes, the birth rate may reach from 3,000 to 4,000 annually in the near future."**

*The Far East*, a widely read weekly publication of Tokio, in its issue of July 24, of last year, reproduced an editorial from the *Osaka Mainichi*, on "The Problem of the Younger Generation in America" which throws further light on the statements made by the *Japanese-American*. The *Mainichi* says:

**"In 1912 there were 90,000 Japanese in the United States. Since 1913 the population has again shown an upward tendency, owing to photograph marriages becoming the fashion among Japanese residents, resulting in the arrival of many women from Japan. In addition the birth of children is increasing at the rate of 3,000 per annum. But it may safely be said that the birth rate will be larger than that, for the majority of men resident in America are unmarried, while all the women are married.**

**"If the photograph marriages and other means are followed with more enthusiasm to call girls and wives from Japan, the number of couples will be exceedingly augmented. If the number of Japanese immigrants in America is decreasing as a consequence of the 'Gentlemen's Agreement,' the diminution of grown-ups will be fully made good by the birth of children."**

These are highly important admissions. They are the Japanese' own figures. Their frank and outspoken statements must compel us to give pause and ponder. With 80,000 adults in the country, and the majority of the men unmarried, the Japanese are increasing at the rate of 3,000 per year. But, as the *Mainichi* very sapiently remarks, when the majority of the unmarried men are united with their "picture brides" and the number of couples are augmented, the birth rate may well reach a much higher figure.

Let us accept for a moment the accuracy of the above statements and analyze what they mean. There is a slight discrepancy between the official figures and those above quoted, so we may take as a fair basis, the figures given by the *Japan Year Book*, which tells us that the number of Japanese residing in the United States at the end of June, 1913, was 77,615. The same table says that of this total, there were 67,169 males, *and only 10,456 females*. Now we are assured by the *Osaka Mainichi* that all the females are married, and, for the sake of argument, we may assume that they are all of the procreative age, i.e. between 15 and 45. It may be noted that in 1908, the percentage of married and unmarried per 100 people in Japan, is given as 34.62 married and 65.38 unmarried. So when we allow that all the women in America are married and in the procreative age, we cannot be charged with unfairness. To every woman and wife there must be one husband, so we have a population of 20,912 that may legitimately be considered as reproductive agents. This proportion of males to females compares with the general statistics of Japan, where the ratio averages 102 males to 100 females. So, in a population of 77,615 Japanese in America, there are only 20,912 reproductive agents against 56,703 males without wives.

Further reference to the *Japan Year Book* tells us that the birth rate in Japan for the years 1904-09 averaged 33.60 per thousand. If we extend this to the Japanese couples in America, the birth rate should be about 705 for the 20,912 legally entitled to procreate. Yet here we have the leading Japanese papers calmly telling us that the birth of children in America is increasing at the rate of 3,000 per annum or at the alarming rate of 143 per thousand.

If we pursue the investigation further, and allow an average death rate of 21 per thousand, we have an increase of births over deaths of 122 per thousand, or an actual annual addition of 2,562 to the reproducing population of 21,000. This represents an annual increase of 12.2 per cent, or a doubling of the population in a little over eight years!

These figures are of course preposterous, because of the fact that the population are all embraced within the procreative age. We must apply the Japanese vital statistics to ascertain the truth. With a population of 21,000, half males and females, and all married, representing roughly 33⅓ percent of the total number of inhabitants, we must assume a total population of 63,000. Reference to the Japanese statistics shows that 44 percent of the population of Japan, are between the ages of 15 and 45; this will give us 28,600 of procreative age, and with a birth rate of 33.6 per thousand we have a normal annual increase of 1004 for a population in Japan in which 21,000 are married. If the *Japanese American* and the *Osaka Mainichi* assert that 21,000 in America are increasing at the rate of 3000 per annum, comparison with the statistics of Japan clearly indicates that the Japanese in America are increasing three times as rapidly as they do in Japan.

The Japanese insist that the racial problem in America and the British Possessions in the Pacific, arises purely from racial antipathy. The American Government in all its Notes in answer to Japan's protests has taken the ground that the matter is based on purely economic reasons, but this explanation has failed to satisfy the Japanese. As the report of the Japan Sociological Society announced that the earth could support 22,000,000 Japanese where only 2,500,000 Americans could exist, thus acknowledging that the problem is purely an economic one, so do the official population statistics of the Japanese Government and the admissions of their subsidized newspapers give added weight to the American contentions.

G. B. R.

# WHAT IS RACIAL EQUALITY?

What is the Japanese definition of "racial equality?" Who is to interpret its meaning? The Japanese insist that Americans must accept their definition and viewpoint. As far as we were aware, there has never been any disposition on the part of educated Americans to deny the manhood equality of the Japanese. The equality which comes from birth, breeding, education, and culture, knows no color line. This is amply proven by the experience of thousands of Japanese who reside in the Eastern States of America. The equality of strong men standing face to face, knows neither race, color, or creed. The West has always been willing to admit the manhood equality of any race or people who have demonstrated their fitness on the field of battle. The Anglo-Japanese Alliance is a frank admission of the manhood equality of the Japanese; but this does not carry with it full social recognition in the clubs and drawing rooms of England, except to those qualified for it by education, position and breeding. There exist social distinctions, between different classes of society, which have been preserved amongst all peoples, from time immemorial. There are also race prejudices which bar the way to wholesale miscegenation, which no recognition of equality can sweep aside. These color prejudices are essential to the continued purity of any race. What then do the Japanese mean when they talk of racial equality, or the full recognition of the Japanese by the Americans with the white races of Europe?

This must carry with it the full right of Japanese to unrestricted immigration into the United States, the right to travel, to reside and own land within our borders, the right of naturalization, of intermarriage and other admissions of full equality. Waiving aside the recognition of that equality which arises from education and a mutual understanding, or any discussions as to the qualifications of the Japanese laborers for assimilation into the American body-politic, and admitting the injustice of many of the objections raised against his entrance into America, is it fair to ask the editors of Japan if they practice in the East what they now so vehemently demand from the West?

To insist on equality with another race and another people within their own homes carries with it the implied obligation and willingness to recognize the equality of others in return. Do the Japanese recognize the equality of the other peoples of Asia? They do not. Do the Japanese practice what they preach in their own country? They do not.

In 1871, the despised Eta, the pariah outcasts of Japan, were elevated by Imperial Decree to full citizenship and equality with the other classes of the community. There is little or no racial difference between the Eta people and other Japanese. The law made them equal. Have the people of Japan lived up to and carried out the wishes of the late Emperor and conceded equality to the Eta? Let the Japanese answer.

*The Far East*, a prominent weekly publication of Tokyo, in its issue of June 6, 1914, says:

**"The following circular has been distributed among the leading men of Tokyo by Mr. Tenyo Ooye, acting for Baron Shibusawa:**

**"There is nothing that brings more disgrace on the humanity of these days of progressive civilization than race prejudice. This is particularly so in those instances where contempt and exclusion are extended to a section of the same people in this country without any valid reason—which, by the way, cannot be found in our literature. This state of affairs we most deeply regret. It is no more than disrespect to the profound benevolence of the late Emperor and disregard of the principles of humanity, and we cannot lie still and allow such things to continue. Therefore, we people of one mind have founded the Teikoko Kodokai (Imperial Association for the Advancement of Public Humanity) in order to fulfill the gracious will of the late Emperor."**

*The Far East* then says:—

**"Baron Shibusawa is President of the Foundation Committee of this new society. It is a healthy sign of the trend of public opinion in this country that the Japanese are recognizing the existence amongst themselves of a form of race prejudice that has little excuse—the common dislike in which the Eta class are held. To deny the naturalness of the feelings of race prejudice among races widely separated from each other in color, beliefs and traditions, while entertaining repugnance for a people long ago assimilated, practically, among the Japanese is illogical and calculated to provoke a prompt retort from other nations."**

This is a frank admission that the equality requested by the Japanese in the homes of others is withheld from a section of their own countrymen in their own land.

Mr. Tsumura Hidematsu, of the Kobe Higher Commercial School, writing of Japan's social problems in the *Shin-Nippon*, says that the problem of the Eta is the most important before the country, and adds:—

**"There are nearly a million persons belonging to the Eta class in this country and the study of their social condition will convince one that they are the ostracized in Japanese society. They are confined to certain localities and are not permitted to extend their boundaries. Being thus handicapped in their surroundings, their only comfort is found in the satisfaction of animal passions. They are very prolific. It is no credit to the Japanese people to have a million brethren living in a corrupted atmosphere. To keep them in this condition is a great material loss to the country, and it is also a disgrace to our civilization that society allows such a large number of people to go uncared for in their midst."**

Dr. W. E. Griffis, the greatest American authority on Japan, in his book "The Japanese Nation in Evolution," tells us that when the Eta class were elevated to citizenship in 1871, they numbered only 200,000. Professor Hidematsu now tells us they have increased to a million. The refusal of the Japanese to obey the will of the late Emperor, and extend equality to this caste, will, if persisted in, create a good sized racial problem in Japan during the next half century.

What, then, is the Japanese definition of racial equality? Actions speak louder than words. Is it fair to seek for the explanation in the Japanese treatment of the Formosan Chinese, now called Formosans? Count Itagaki, one of the foremost statesmen and humanitarians of Japan, is a reliable witness. In the *Japan Financial and Economical Monthly* for August, 1914, Count Itagaki says:

**"It is a fact that the authorities show discriminatory treatment of the natives. Japan's colonial policy, unlike that of England in India, should be one of assimilation and no discrimination should be made between Japanese and Formosans in their treatment.**

**"Twenty years have elapsed since Formosa was ceded to Japan but no intermarriage between Japanese and Formosans is legally allowed. With regard to education, only that which is necessary to gain a livelihood is given to the natives; the higher education necessary for civilized people is denied to them. No franchise is given the Formosans, and the freedom of speech as regards personal rights is withheld."**

In plain words, liberty is denied the Formosans. They are a conquered people. Is it any wonder that they are restless and discontented? *The Far East*, in its issue of October 9th of last year, tells us of the new "conspiracy" which developed in Formosa, and adds:

**"Five hundred and five unfortunates were sentenced to death; seven have been given fifteen years' imprisonment; thirty, eight to twelve years; and three hundred to nine years.**

**Four hundred are still awaiting trial. A grim record. It is the Government's policy to rule Formosa in military fashion—and in the words of an angry statesman, 'the public be damned.' Turn on the light in Formosa."**

The censored press dispatches arriving in America on the 1st of November last told only half the story as to the toll of death exacted by Japan for this abortive attempt on the part of the Formosans to regain their rights and liberties. Is it fair to ask the editors of Japan, if the Formosans were conspiring to obtain by force of arms that recognition of racial equality from Japan which she in turn demands so vehemently from the people of the West, while suppressing with the mailed fist any attempt on the part of the Formosan Chinese to escape the bondage of the benevolent overlordship of their rulers?

With the fate of their brethren in Formosa always before them, is it strange that intelligent and patriotic Chinese decline to accept at their face value Japan's protestations of amity and good will? The Formosans are Chinese. They cannot be confounded with the aborigines. If Chinese in Formosa are treated with contempt and denied the rights of subjects of the Empire, what can the Chinese on the mainland expect from the benevolent domination of Japan in their affairs, as foreshadowed by the demands embraced within Group V—held in abeyance for future "negotiation."

The Formosans and Koreans are conquered races. The constitution of Japan is not yet extended to them. Is it fair to remind the Japanese, that before they can expect to receive the full recognition of their equality by the West, they should make some effort to practice in their own country what they preach to the West. Japan is preparing to enforce her conception of racial equality on the West at the muzzle of her guns, if necessary. Yet the poor Formosans, whose only crime is that they are Chinese, denied all the rights of citizenship in their own land, refused the rights of public speech, deprived of elementary education, prohibited from intermarriage with their Asiatic conquerors, are ferociously shot down and massacred by the hundreds for "conspiring" to better their lot, and aspiring to equality with their overlords. At least the Formosan Chinese have shown that they retain a spark of manhood and are willing to die for their liberty.

What, then, is the Japanese explanation of racial equality?

Do the Japanese recognize the equality of the Koreans? They do not. The constitution of Japan does not apply to this conquered nation. The Japanese are the superior race and intermarriage is also forbidden. Mr. F. A. McKenzie, author of "*The Unveiled East*" is authority for the following statement:—

**"When it was suggested to Baron Kaneko, the official press agent for the Japanese Government in America during the war, that his country might encourage intermarriage between Japanese and Koreans in Korea, his reply was emphatic: 'Not at all! On the contrary we shall oppose it very vigorously. We shall consider the Koreans as a lower race; we will give them all possible liberty, but we shall in every way endeavor to maintain the Japanese spirit among the colonists that go among them.** *We believe in the superiority of the races, and not in the amalgamation'.*"

So it is clear that the Japanese conception of racial equality with the white people of America does not contemplate miscegenation or the unrestricted right to intermarry. Otherwise how could they preserve that "superiority" which they believe they possess over the whites. The policy outlined by Baron Kaneko ten years ago is evidently in full force in Korea to-day, even to the point of official intervention to prohibit intermarriage. We quote from a letter written by Mr. Suzuki to the *Japanese Advertiser* of July 21.

**"That the Chosen Government itself should have shown instances as reported, of discriminating between Koreans and Japanese by interfering with marriages between some of its officials and Korean women, is most foolish as well as deplorable."**

The latest news from Japan brings the information that the Government has chosen a princess of the blood to be the bride of the ex-Crown Prince of Korea. Perhaps this indicates a change of policy on the part of the Japanese Government. The diatribe of Marquis Okuma against Chinese morals and hedonism published in the last number of the *Shin Nippon*, would indicate that he considers the Chinese are also inferior to the sons of Dai Nippon.

I cannot however refrain from inviting attention to a passage in *The Secret Memoirs of Count Hayashi*, a veritable storehouse of valuable information about the real policies and methods of Japanese diplomacy. In view of Marquis Okuma's caustic criticism of the Chinese, and the general tendency on the part of all Japanese to assume superiority over their co-religionists in China, the following words of Count Hayashi should be read with deep interest.

**"As China is the fountain source of one of the greatest civilizations in the world, one must recognize that civilized customs and institutions are already there. On the other hand, the Japanese have imported the civilization of the West only during recent years and have imitated it, and they may think when they go to China and associate with the Chinese that they are really in no way inferior to the latter.**

**"But if the Japanese will only strip off their gold braid, they will find that they have left only that which they have imported originally from China, and consequently it is clear that they are behind the Chinese in every point of civilization;...... what I mean is, that in the degree of social civilization we must admit, however reluctantly, that China is far richer than Japan."**

If one of the foremost statesmen of Japan frankly admits that his people are below the Chinese in point of social civilization, what then does this new shibboleth of racial equality signify? If all other races of Asia are held inferior to the Japanese, and intermarriage is prohibited, if the Koreans and Formosans, subjects of the Empire, are not conceded the right to reside and work in the Metropolis, or Japan proper, what, then, is the difference when the people of California impelled by the same economical reasons, discriminate in turn against the Japanese?

Mr. K. Kawakami, the author of "*Asia at the Door*," an American citizen and happily married to an American wife, says:

**"To understand why California is so averse to American-Japanese marriages one need only look at the Venus-like faces of her women and the features of her men as handsome as those of an Adonis. To give up such a beautiful woman to a homely Japanese instead of to a stately, courtly Californian must appear a sacrifice and a blasphemy. That is the only 'biggest problem' involved in intermarriage between Japanese and Americans."**

This argument convinces one that there is really something behind about that much discussed "Japanese Bernhardi" book, disclosing the plans of Japan to invade and conquer the United States. The writer of that bellicose work insisted that the American men were jealous of the Japanese, and that the beautiful American women of the Pacific Coast were simply pining for the day when they could throw themselves into the arms of Japanese husbands. Can it be that the Japanese are jealous? Are they peeved because California prohibits intermarriage? Analysis would indicate that although the Japanese prohibit intermarriage with Chinese, Formosans and Koreans, they are strangely anxious to marry the Venus-like beauties of the Pacific Coast. After all, we can only admire their taste, even if it does weaken the theory of their own racial supremacy, and the superiority of their own civilization. The Japanese are true artists in their love of the beautiful.

What then do they mean by racial equality, if every argument advanced against the restrictions imposed by the people of California to preserve their economic security and the purity of their race, applies with equal, if not greater force, to conditions in the Far East?

China in Chains

# CHINA IN CHAINS

*From the Jiji Shimpo, the leading Daily of Tokio*

A JAPANESE INTERPRETATION OF THE RUSSIAN ALLIANCE

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# TIMEO DANAOS ET DONA FERENTES

> "What Japan has now to do is to keep perfectly quiet, to lull the suspicions that have arisen against her, and to wait, meanwhile strengthening the foundations of her national power, watching and waiting for the opportunity which must one day surely come in the Orient. When that day arrives she will be able to follow her own course, not only able to put meddling Powers in their places, but even, as necessity arises, meddling with the affairs of other Powers. Then truly she will be able to reap advantages for herself."
>
> (*Secret Memoirs of Count Hayashi*)

Yuan Shih-kai, the strong man of China who wanted to be Emperor, has passed away. The Republic is once more triumphant. A parliament has convened at Peking. The supporters and friends of Yuan are proscribed and have fled for their lives. China enters upon a new phase of her wonderful history. What of the future? Who is the strong man, the hero, the Moses of the new movement, who will save the nation from its peril?

There are signs and portents in the political skies which prophesy storms and trouble ahead. Is Japan preparing to collect her account for the aid and sympathy extended to the leaders of the anti-Yuan movement? Are the new rulers of China in any way compromised to let bye-gones be bye-gones, and accept the aggressions and humiliations of last year as an accomplished fact? Are they ready to pay the bill that Japan is drawing up for presentation? "Under the guise of friendship, with fair

words and with solemn promises," is the grim tragedy of Korea to be re-enacted? Will the Chinese remember in time the phrase written over the ruins of Ilium, "We fear the Greeks, though bearing gifts." There are straws that point the way the wind blows. The message from the direction of Japan admits of no misunderstanding.

"Although China is still in an unsettled condition, yet President Li has adopted a pro-Japanese policy. He is up-to-date," says the Tokyo Mainichi. "Chinese of foresight and knowledge, like Dr. Sun Yat-sen and Mr. Hwang Hsing, try to bring the two countries closer together," declares the eminent editor of *Japan and the Japanese*. "President Li is intent upon securing a loan from Japan, and Mr. Hioki (the outgoing Japanese Minister to Peking) was entreated by President Li's adherents to exercise his influence for the advance of a loan by Japan, we are told by the *Manchuria Daily News*, the official organ of Japan in Manchuria.

Mr. Tang Shao-yi, appointed Minister of Foreign Affairs in the new cabinet at Peking, is convinced that China and Japan must be friendly, for he says:

**"In spite of all that is generally said, Japan wants a strong Government in China. We must both look ahead. A strong continental neighbor is more desirable than a weak fifth-rate Power. The Japanese have changed their view during the last nine months."**

Mr. Wen Tsung-yao, another cabinet appointee in the new regime and a close friend of Mr. Tang's, is also most emphatic about the necessity of "co-operating" with Japan. He is a pronounced Japanophile.

To the onlooker, this change of front after the deep humiliations forced upon China last year by her powerful little neighbor, seems incredible. If it were not pitiful it would be amusing. For while the Japanese diplomats and statesmen are carefully searching their lexicons for new words and phrases to conceal their purposes, and lull the suspicions of the Chinese, the political "outs" and prominent writers are cynically candid as to the real objects and aims of Japan at this time.

The handwriting is written large upon the wall, but the Chinese, intent only on their own affairs, dozing away the last days of their national independence, dream on of democracy, parliaments, the rights of the individual and similar privileges and blessings which men in all other parts of the world have won only at the cost of long and heavy sacrifices, and retain unimpaired by being prepared at all times to fight, and die, if needs be, for their preservation. The leaders of the recent revolution have purchased the downfall of Yuan Shih-kai, by accepting support and sympathy from the most autocratic monarchy the world has ever seen. They owe their victory to the assistance of a people fanatically credulous in the Divinity and infallibility of their own ruler. Can an absolute autocracy be sincere in its friendship for a neighbor whose institutions may in time undermine the foundations of its own political system? In accepting the aid of Japan to punish Yuan, the new leaders have forgotten the lessons of history, and turned a deaf ear to the warnings that Japan has from time to time sounded for their particular benefit. Yet the great objective has been obtained. They have danced. The Republic is saved. But the PIPER stands inside the door, waiting for his pay.

Mr. Tang Shao-yi believes that Japan has changed her ways in the last nine months and now wants to see a strong government in China. This is the language of diplomacy. What are the facts? Over in Tokio there resides a sagacious old warrior now nearing his eightieth birthday. For many years he has dictated the military program of his nation. He is one of the Elder Statesmen; one of those supermen who made the Japan of to-day, whose counsels are still listened to with respect by the Mikado. His name is Prince Yamagata. Some years ago when he was just a plain Field Marshal and Marquis, he contributed a most valuable paper on the Japanese Army, to a book entitled "Japan by the Japanese." In it, he said some interesting things about China. The leaders of new China, who now proclaim undying friendship for Japan, should read carefully what this dictator of Japan's military policy then had to say.

**"The future of China may well have an importance to Japan, and I think that what is necessary for the regeneration of China is the coming to power of a strong Emperor, who will take the reins of government into his own hands......Granted a strong Emperor, it would be more easy to change China than it was to change Japan......A strong Emperor could take advantage of the state of things and lead China upwards. I think that under such circumstances the Chinese could be trained to become excellent soldiers, and with China's almost infinite resources of men and treasure, a strong Emperor could have at his command a most powerful army. If this were to be accomplished China might become a very serious menace to all the neighboring nations; but there seems little danger of these ideas being realized in the immediate future. A strong Emperor is essential for their fulfilment, and there is no sign that such a one is to be expected to arise."**

Prince Yamagata is very much alive. His power is unbroken. He continues to dictate the military affairs of the Empire, and, as the foreign policy of the Cabinet is based upon and expands with the growth of the nation's armaments, it may be said that the influence of the venerable Elder Statesman is second only to that of the Emperor himself. Yuan Shih-kai, despite all his weaknesses and faults, was the one strong man who had come to the front in China in many years. His political methods were those of the Orient, his name is anathema to New China, but the truth remains, that Yuan was universally recognized as the man who could place China on her feet. He would have made a strong ruler. There is no need to seek for further reasons in explanation of Japanese sympathy for the cause of republicanism in China. While the political waters of China are troubled, while one party can be set against the other, there will always be internal unrest providing the opportunity for outside intervention. The die has been cast. China can never again grow strong. Her opportunity has passed, frittered away in the struggle for factional supremacy.

Some time ago, *The Times* dispatched its Military Correspondent to Japan to write home and tell the people of Great Britain about the military efficiency of their Ally, and what they were doing to uphold their end of the Alliance. He was given opportunities never accorded to any other foreigner to learn the innermost secrets of the Japanese General Staff. After describing the invulnerable strategical position of Japan, assuring to her a predominant position in the Far East, he adds:

**"Nothing but the military regeneration of China or the United States seems likely to deprive her of this privileged position and to talk to a Japanese of such possibilities only provokes a smile."**

What does the smile on the face of Japan signify? It means that she never intends that China shall be regenerated as a military Power, and so become a menace to the safety of Japan. The world will recall that Japan and Russia, both borrowing nations, forced themselves into the Quadruple financial group, at the time of the reconstruction loan, for the sole purpose of having a voice in the disposition of any funds that might be employed by the Chinese government for military purposes. Can we forget that only a year ago, the Japanese Government deprived the Chinese Government of the right to construct a naval base in the province of Fukien? Yet with these historic facts before us, Mr. Tang Shao-yi believes that Japan desires to see a strong China, and Mr. Tang has been selected by President Li to supervise the foreign affairs of the nation. Mr. Tang is a skilled diplomat.

A most reliable witness is Marquis Okuma, the Premier of Japan and official mouthpiece of the Government. In addition to presiding over the Cabinet, he is the reputed proprietor of a very influential monthly magazine called the *Shin Nippon*. If the Chinese believe that the heart of Japan has softened toward them, they have only to read the words of Marquis Okuma in his recent "Elegy of Yuan Shih-kai and Warning to the Chinese People" published in the July number of his own magazine, a translation of which appeared in *The Japan Advertiser*. Reading his words of warning, recalls all the arguments advanced by Japan in justification of the violation of solemn treaties and promises in the case of Korea. How often has the world been informed that the degeneracy, corruption, and

ineptitude of the Korean people, constituted a menace to the peace of Japan, which in turn fully exonerated the latter for breaking her pledged word to respect the independence of the country. As public opinion throughout the world was carefully educated by means of a skillful publicity propaganda, to accept the Japanese viewpoint concerning Korea, so the Premier of Japan now sounds the warning to China, and gives the keynote for inspired writers in America to prepare the public for what may follow. The Premier says:

**"The death of Yuan Shih-kai has revealed China in all her weakness.........When a country is in trouble you see the advent of a hero to save it from the calamity. So far, China has produced no saviors. All seem alike stricken with the national virus."**

These words should make most interesting reading for President Li, Premier Tuan, Mr. Tang, Dr. Sun and others. They are particularly rough on Generalissimo Hwang Hsing. After the farewell banquet tendered the General by his Japanese friends in New York, and the obsequious attentions showered upon him while passing through Japan, enroute to command and lead the Republican army to victory, the words of the Marquis ought to enlighten him as to just where he stands in the estimation of his new found friends.

What is this national virus that has poisoned the Chinese and made them unfit to govern themselves? Let the Japanese Premier talk for himself. He says:—

**"The Chinese are disciples of the worst form of hedonism, the doctrine that pleasure is the chief good in life....Yuan ever hungered voraciously for the pleasures of the flesh, and had no moral support to ease him. Yuan's death is a great misfortune not only to himself but to the Chinese people, for it shows that the people are touched more or less by the same vice which destroyed Yuan. To cite some instances; Yuan had no less than six proper wives, and the number of his concubines is beyond our imagination. Such astounding moral degeneracy, engendered no doubt by centuries of evil national habits, as it is, is quite incompatible with the spirit of a patriot, who is ready to give his body and soul in the cause of his countrymen......Corruption which is universally practiced among the Chinese is likewise the outcome of their natural hedonism. In order to satisfy their lust and licentiousness they must have money and will hunt it by hook or crook."**

In plain words, the Premier of Japan believes that the Chinese are hopeless because of their pursuit of pleasure. Remembering that this is also the fundamental weakness of the Koreans, which obligated the annexation of their country by Japan, the warning conveyed to the Chinese is unmistakable. It is difficult to take Marquis Okuma seriously in this argument. If these words were deliberately penned by the Premier of Japan, a gratuitous affront has been tendered to the Chinese people and to the memory of Yuan, who despite all his faults, fought resolutely against the aggression of Japan.

Furthermore, we might here refer this caustic critic of the Chinese to the parable of the mote and the beam. The good Marquis seems to overlook the fact that there are many authoritative works on the customs of the Japanese people. They all agree on one important fact. Marriage in Japan is essentially polygamous and concubinage the rule, rather than the exception. Dr. Sidney L. Gulick, one of the most pronounced admirers of Japanese culture, has written a book entitled, "The Evolution of the Japanese." He is also a very reliable witness. On page 151 of this authoritative work, some interesting and illuminative facts will be found as to the number of concubines possessed by the Emperor of Japan. Dr. Gulick asserts that the late Emperor had several concubines and no less than thirteen children, and, in a footnote diplomatically adds, that the number of concubines and children are correct as far as they go, though a full statement might require an increase in the figures given. There is no use to dilate on the subject beyond quoting the statement of one so highly esteemed by the Japanese.

Perusal of the many authoritative books on Japan, would therefore indicate that Marquis Okuma is strangely inconsistent in charging the Chinese with national vices common to all Oriental nations adhering to ancestor worship. This same hedonism is rampant in Korea, where, under Japanese rule, the native population has increased 17 per cent in four years as a result of sexual promiscuity. Before lecturing and warning the Chinese against these evil practices, the Premier of Japan, while he has the power, might set a good example by the promulgation of a few laws in Japan and Korea, which would prove to the world that he is sincere. The wide divergence between the official utterances of Marquis Okuma as the Premier of Japan, and the candid opinions of the publisher of the *Shin Nippon* will not be lost on the general reader. Through the magazine owner and writer, the world gets a glimpse of the inner workings of Japanese diplomacy and national policy. Marquis Okuma tells the Chinese leaders to their face what fine fellows they are, but assures his own people that there is not a real hero amongst them all who can save their country from the calamity. What calamity? What danger menaces the national existence of China, now that Yuan has died, which calls for a national hero or savior? Marquis Okuma leaves this to the reader's imag'nation. Not so, however, the Editor of *Japan and the Japanese*. He is frank, very frank. In an article in the May number of the *Japan Magazine*, he tells us something definite about the calamity hovering over China, and says:—

**"Japan's fundamental policy toward China has been decided, and not even the personal opinions of the Premier can change it, so far as our basal attitude goes. This being so, friendship and good-will between the two nations depend on China's becoming familiar with our policy and abiding by it. Japan is influenced by an undeviating policy and an unswerving sincerity."**

In plain words China must submit to Japan's policy, if they want to retain her friendship and good-will. So the writer then goes on to elucidate some of the high points of this policy, and adds:—

**"It is very difficult to say whether China will soon break away from her traditional policy of checking Japan's progress on the continent of Asia. It is probable that China will incline to the sympathy of Germany or the United States or some other distant country to help her against the intrusion of Japan. Such a policy can only result in the ultimate partition of China......If she persists in her opposition to Japan there is no country on earth that can save her......The egoistic policy of China in the past has led to her humiliation both by Manchuria and Mongolia: and if she goes on with this policy her humiliation may be repeated."**

Here we have the situation in a nutshell. As long as China struggles to protect herself against the intrusion of Japan, this "egoistic" policy will again result in her humiliation, and, as Mongolia and Manchuria were taken from her in the past, so will her national existence be placed in jeopardy if she struggles to preserve her honor from future degradation. The price of Japan's friendship and permanent good-will is for China to submit gracefully to her instrusion into and domination over her affairs. If China struggles or invites attention to the rape of her honor, if she shows any outward signs that she even resents the intrusion, then the cup of humiliation will be pressed quietly to her lips, and she will be forced to drain it to the bitter dregs. And no Power in the world can save her, we are assured. This then is the calamity which hangs over China, and we are told by the highest Japanese authority that there is no national hero, no savior in sight who can avert the fate of his country.

Lest we forget! Remember the fate of Korea! I quote from *The Unveiled East*, the work of F. A. McKenzie, the noted English war-correspondent.

**"When the Japanese first came to Korea, they were received by the common people with sympathy and hope. To-day the common people hate them with the most intense bitterness. The first cause for this hatred is national. The Koreans say that the Japanese wormed their way among them under the guise of friendship, with fair words and with solemn promises to maintain their independence. Then, having planted their troops all over the land and broken the Korean power, they violated their promises and deprived the nation of its freedom. The more intelligent Koreans admit, as they cannot but admit,**

**that the loss was largely their own fault. Their country relied upon treaty promises in place of national efficiency. It had degenerated and did not deserve to live. And yet the degeneration affected the officials rather than the mass of the common people. 'If we only had a chance,' the men of the north have said to me more than once, 'we could show that we are fit to hold our own.'"**

With fair words and with solemn promises to maintain their independence, the Greeks of the Orient came to the Koreans. The phrase written over the ruins of Troy is emblazoned on the tombstone of Chosen. The Greeks are now carrying their presents to Peking. Hear how the good Count Hayashi counseled his people to proceed in this case:

**"In dealing with China we want to take plenty of time to regard all the provincial and local problems of that country, to insist upon our claims and to explain patiently and steadily the reasons for the positions we take up......To the Ministers of State and gentlemen of China we should be polite in our manner and should try to cultivate a warm friendship. There is no other way to success......As I have said before, the only thing to do is to be calm, not to get jealous, and to wait. Whichever Ministry is in Power, it ought to make no difference to our foreign policy."**

With fair words, this high exponent of Japanese policy would pave the way for the attainment of the great end, the end that is disclosed in his summing up:

**"Some Japanese are so foolish as even to advise the authorities to be 'mild' in their treatment of China, and to befriend and conciliate that country. Such advice is supreme folly.**

**"The way to deal with China is for the Powers to combine and insist on what they want and to go on insisting until they get it. The Japanese have learnt that. The European and American governments often advocate mild measures, but, like the Japanese have done, they too, will one day find out their mistake.**

**"There are only these alternatives before the Powers. They must either bring their combined forces to bear on China to get what they want or else leave her alone, until like an awakened lion she is ready to spring on her prey, in which case she will be powerful enough to threaten the acquired rights of all the Powers."**

"NOW WHILE ENGLAND IS ENGROSSED IN HER GREAT WAR AND AMERICA IN THE COMING PRESIDENTIAL ELECTIONS, JAPAN SHOULD DETERMINE TO SETTLE ONCE AND FOR ALL HER CHINA POLICY. IF SHE WAITS UNTIL THE AMERICAN NAVAL PROGRAMME IS COMPLETED IT WILL BE TOO LATE. IF JAPAN MISSES THE PRESENT OPPORTUNITY TO SETTLE THE ORIENTAL QUESTION IT WILL NEVER AGAIN RETURN. NOW IS THE VITAL MOMENT FOR ACTION," PROCLAIMED MR. SHIMAYA IN A RECENT ARTICLE IN THE *YAMATO*.

Lest we forget! Remember the fate of Troy! Remember Manchuria! Remember Chosen! Look around in Shantung! The Greeks are on the move. They are carrying their gifts to Peking.

TIMEO DANAOS ET DONA FERENTES.

# THE MAN OF THE HOUR IN JAPAN

The political cauldron in Japan is again seething, and a change of Cabinet is imminent. There are big things to be done, while "the opportunity of a thousand years" remains open. While the great war is in progress, and the presidential campaign is monopolizing the attention of America; while no Power in the world can interfere, the Japanese jingoes believe that the hour has struck for them to act and make good their claims to full control over China. They must face the Powers after the war, with the accomplished fact.

The stage has been carefully prepared for the final act in the great drama. The internal conditions in China are going from bad to worse. The Mongolian bandits are ravaging the plains of Manchuria. Taonanfu has been attacked. Changchun has been threatened. Chaos prevails, and the Chinese authorities seem powerless to maintain order. Shantung is overrun with bands of Japanese and outlaws masquerading as revolutionaries. Fighting progresses in and around Canton, and the province of Szechuan is still the cockpit of contending parties. To the Japanese mind, the situation they have created, is intolerable. They have a divine mission to perform, and, as we are told by the editor of *Japan and the Japanese* there is no power on earth who can save China. The time for intervention is drawing nearer. The conditions which led up to and justified the annexation of Korea exist in China.

But Marquis Okuma hesitates to act. He is too spineless to suit the military and bureaucratic element in Japan. They clamor for his resignation, so a "strong man" can take his place and carry out their program. So the militarists of Japan turn to the one man who can deliver the stroke quietly, neatly and with dispatch; the man who forged the fetters on the liberties of Korea; the idol of the army and the future leader of the powerful Choshu Clan, who dictate the military policy of the nation. Field Marshal Count Terauchi, Governor General of Chosen, the silent, cynical, deliberate and masterful soldier-statesman, is the man selected to head a new Cabinet. He is the Man of the Hour, the man specially equipped to deal the blow. The world knows little about Count Terauchi, outside of his record as Governor-General of Chosen. It is interesting and illuminating at this time to read what the Japanese think of their hero. If we turn to the current number of the *Japan Magazine* we can gather an idea of the personality of Count Terauchi from the pen of one who knows him. We quote from the article written by Mr. R. Usaki:—

**"The famous warrior statesman is among the more prominent personalities of modern Japan and is eagerly looked forward to by many as the future premier of the empire. He is regarded by some as too much of a martinet and on the whole over austere; but his is a devotion to the trifles that go to make perfection. He is narrow minded, but it is the mental concentration that means business, and accomplishes what it determines. No one has dared to suggest that his strictness has ever been inconsistent with his diligence and honesty. Certainly Field Marshal Count Terauchi has the brightest future of any living Japanese soldier and statesman. It is only a question of time when he heads the Imperial cabinet.**

**"The wonderful manner in which Count Terauchi mastered the situation in Korea, increased, if that were possible, the nation's confidence in him as a man to be trusted. The notable achievement with which his name will ever be associated is the annexation of the peninsula to Japan.**

**"It was well known that the first Resident-General, Prince Ito, was not in favour of interfering with the independence of the peninsula; and his successor, Viscount Sone, was of the same mind. But Count Terauchi was soon seen to be a man of very different stamp from his predecessors. He had hardly been a month in office at Seoul when he had the police powers of the Korean government in his hands; and then he took precaution to station Japanese**

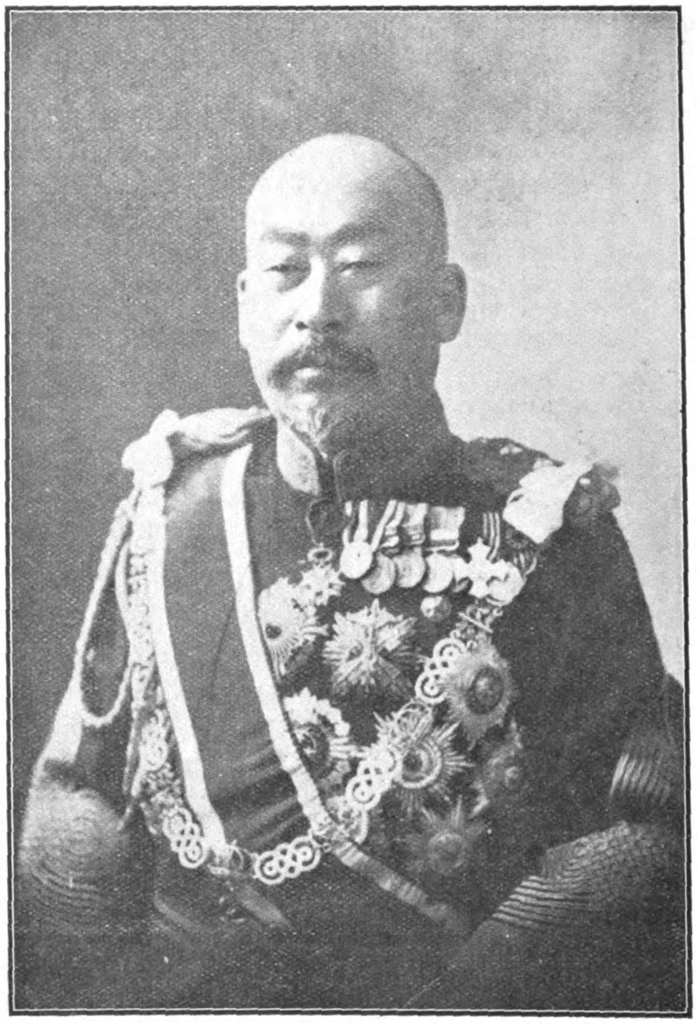
**soldiers in every province. By the month of August the work of annexation was complete and the fact made known to the treaty Powers.**

"The king of Korea assumed the rank of a prince and the Resident-General was supreme over the country. One of the most marvellous feats of the new administration was its successful annexation of the country without giving the Koreans a chance to carry on effectively their wonted intrigues. That so great an event could have been carried out so quietly was the wonder of the world. The effectiveness with which the great feat was accomplished must be attributed to the genius of the Resident-General.

"Though immensely admired and respected the Governor-General of Korea naturally has numerous critics, as all strong characters have.

"He is accused of ill-liberal tactics in suppressing newspapers and controlling news generally. He is blamed for laying too much stress on the importance of military rule in his administration of the peninsula. His exercise of the right to issue company regulations is objected to as interfering with the freedom of enterprise. His dislike of journalists and his aversion to politicians cost him many friends who might otherwise assist him. And so his administration is attended by too much of the military flavour; exactness, secrecy and peremptoriness. He fears public opinion too much, and refuses to let his plans be known. Many resent this lack of frankness.

"It is interesting to note that the Governor-General is quite as careful in controlling his own people as the Koreans. In former times the Japanese residents in that country had too much freedom. Many immigrants were persons of disreputable character and were a nuisance to natives and government alike. Even soldiers and government officials were allowed to go on geisha sprees and enjoy other questionable pastimes. But the coming of Count Terauchi soon put a stop to all this. The slum districts and gay quarters of the capital suffered a marked change. Soon the newspapers began to caricature the Governor-General under the image of Billiken, which he is said much to resemble in appearance. No amount of criticism, however, has changed the opinion of the nation as to his genuine qualities. He is the future leader of the Choshu clan, which has wielded so much influence in Japan; and many are earnestly contemplating the day when Count Terauchi will be premier of Japan."



THE MAN OF THE HOUR—FIELD MARSHAL TERAUCHI

THE MAN WHO FORGED THE SHACKLES ON THE LIBERTIES OF KOREA; THE HERO OF THE ARMY, THE SELECTION OF THE BUREAUCRATS FOR THE PREMIERSHIP. THE MAN WHO WITH SWIFT, FEW AND EFFECTIVE STROKES IS EXPECTED TO CONVERT CHINA INTO A VASSAL STATE OF THE MIKADO.

Is history to be repeated? Is the man who gave the *coup de grace* to the independence of Korea, to deliver the blow that will place China under the suzerainty of Japan? The stage is set; the conditions are identical; the troops are posted; the opportunity awaits the man with the courage. Is this the meaning of all the talk in the Japanese press about the necessity of striking while the iron is hot? And there is no Chinese hero, no savior in sight to avert the calamity. We have Marquis Okuma's word for this.

Since the above was written, we have received the New York *Evening Post* of July 12, containing a most interesting letter from its Tokio correspondent. This gentleman, Dr. J. Ingram Bryan, is also editor of the *Japan Magazine*. If Count Terauchi is selected to head a new cabinet, the American press cannot plead ignorance of his intentions or evade its responsibilities by declaring it had not been warned in time of the possible consequences. Dr. Bryan fully coincides with our forecast of the situation; both articles convey the same message.

"With Yuan gone, Japan's hour has come; and the question now uppermost is how Japan will use her opportunity. Yuan was the one mighty obstacle to her gaining a freer hand in Chinese affairs. Will his successor prove as obdurate and invulnerable? There is understood to be a radical divergence of opinion in official circles as to the policy that should be pursued in regard to China. These opinions may be reduced to two; those favoring a policy of pursuing a free hand in China without regard to Occidental nations, and those contending that Japan must keep in with the Powers on the China question. Those urging an independent attitude on Japan's part in China seem to believe that, were Japan to take a bold and independent stand for what she regards as her rights in China, the very suddenness and audacity of the move would leave the Occidental nations as acquiescent as they were when Japan assumed a like attitude in Korea. Certain of the more cautious of this coterie, however, are inclined to the conviction that any attempt at high-handedness would have to be justified by a situation similar to that prevailing in Korea at the time of its annexation to Japan, and which Mr. Roosevelt gave as the reason why he saw America justified in not interfering. Such a situation was fast being brought about in China prior to the death of Yuan Shih-kai. Whether the rise of a new President and consequent peace in China may prevent the anarchy that would oblige outside interference and further gain to foreign prestige and freedom in China, remains to be seen.

"On the other hand, the supporters of the Cabinet and its non-interference policy insist on Japan's standing by the agreements of the Powers to maintain the sovereignty of China inviolate, together with the 'open door' and the territorial integrity of the country. But to say that the Japanese people are in sympathy with this policy is to say too much. A feeling has been on the increase for some time that the Okuma Cabinet is too much under the influence of Occidental nations; it is believed that the Cabinet has not the courage to oppose British and American policy in China, even if it wanted to do so. A revolt against subserviency to foreign nations might be expected if only radical differences of opinion between the Cabinet and the Elder Statesmen could be eliminated.

"To this end one of the leading political strategists of the nation, Viscount Miura, has been devoting earnest and unceasing

(*Continued on Page 101*)

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## JAPAN'S ATTITUDE TOWARDS CHINA

What is Japan's real attitude towards China? Are we justified in directing attention to Japanese policy as interpreted by the Japanese themselves? The *Japan Advertiser* of August 5, prints the translation of a leading article from the *Toyo Keizai Shimpo*, —a vernacular paper, known for its independence and soundness of views—on Japan's policy towards China. The editor pleads for the faithful observance of the Open Door as the only sure way to improve relations with China and preserve friendly understandings with the Powers. That Japan's policy is, and has been, one of aggression and discrimination is frankly confessed in the following words:—

"We have previously pointed out that Japan's policy towards China has hitherto been based on the principle of putting China under something like Japanese suzerainty and of securing the guardian's privilege over her. Therein lies the weak point of our Chinese diplomacy, and we have urged that a change was necessary. In our opinion a policy directed towards the partition of China is unwise. Nor is it possible to put her under our suzerainty. The only policy to be recommended is the policy of the open door and equal opportunity."

The editor of the *Toyo Keizai Shimpo* then proceeds to prove how Japan will profit by living up to the Open Door and welcoming the investment of foreign capital in the development of China's resources. He is very frank and honest, and fully substantiates truths that are carefully concealed from the American editors, by the operation of the official press bureau.

The Japanese publicists in America impute dishonest motives to any writer who has the temerity to disagree with the veracity of their statements concerning Japan's attitude towards China. So we invite attention to an article on "The Problem of National Expansion" in the August number of the *Japan Magazine* from the pen of the eminent professor and publicist, Dr. Kambe. Dr. Kambe is one of the foremost scholars of Japan, a most intimate friend of the foremost Statesmen of the Empire, and a high authority on the problems of expansion. If an American attempted to place the same facts before the American public he would be accused of being in the pay of Germany or the employ of China.

"Whether in the matter of national expansion Japan shall assume an aggressive policy or merely remain content to rest on the defensive, trusting to the mercy of the world, is a question of fundamental importance to the country, and never more so than at present. As things look now it would seem that there is nothing but for her to take an aggressive attitude. For Japan a mere defensive policy would mean retrogression. Unless she is prepared to go in like other powers and take what she can, it is a question whether she will be able to retain even her present possessions. While it is neither necessary nor advisable for a nation to cultivate an avaricious spirit, nor to extend at the expense of internal development, it is nevertheless essential to the progress of a nation that it shall see to its getting a just share in the surface of the earth, as it is divided among the powers.

"At present Japan has colonies in Formosa, Korea, Saghalien and the Kwantung provinces. It is very important that Japan's rule in those colonies shall be efficient and secure, because on the result of that rule the world will base its judgement when asked to recognize the right of Japan to extend her national limits. **To Japan at present, the Promised Land is China, and the South Sea islands.** When people talk of Japan's expansion northward they are apt to forget that there is nothing left but the other half of Saghalien and Siberia, the economic value of which is insignificant from a Japanese point of view. **The only alternative is expansion westward toward China, or to the south sea regions. China, however, is the prime object of Japan's colonial policy; the geographical relations of the two countries make this inevitable.** And the social, kindred and linguistic affinities of the two peoples also point in that direction.

**"It is not likely that as time goes on Japan can remain dependent for cotton on India and America, to powers stronger than Japan. But China she can protect with her navy, and therefore may feel secure in starting any enterprise she likes in that country. Japan cannot become so intimate with south sea regions as she is in China; and it is, moreover, more difficult for Japan to protect her interests in those regions. Our navy being inferior to those of Britain and America we must devote attention to regions where the main defence is military, as in China, where politically and in a military sense Japan is even now far superior to any other power. If Japan will but keep up her expansion policy, taking advantage of the present war, there is every hope that her policy will eventually succeed."**

Is the above clear? China and the "South Seas" are now the prime object of Japan's colonial policy, preferably China, and "if Japan will but keep up her efforts, taking advantage of the present war, there is every hope that her policy will succeed." In plain words, China, the main object, must be brought under the control of Japan before the war ends.

Must we interpret the words of Dr. Kambe literally? If we listen to the testimony of Dr. Teusler and his American brothers of the Sacred Treasure, such utterances are maliciously inspired by China or Germany for the express purpose of sowing the seeds of hate and discord between Japan and America.

We have pointed out time and again to the editors of America that the possession of Manchuria by Japan will not in any way solve the great problem of her rapidly increasing population, and therefore the aggressions of Japan in this quarter of China are purely political, arising out of a lust for power and the determination of bending China to her will. The world has viewed with tolerance at least, Japan's efforts to acquire rights in Manchuria, that would create an outlet for her people, but if it is openly admitted by the leaders of Japanese thought that their countrymen cannot compete with the Chinese, and that Manchuria is of no value to Japan for actual colonization, it becomes clear that her policy towards her weaker neighbor is one of deliberate encroachment.

Let us recall the words of Mr. Takakoshi, when he advocated the seizure of the Dutch colonies in the East:

**"Japan should look for her outlet southwards......It is futile to prosecute a policy of expansion in Manchuria. While holding what we have there, we should aim chiefly toward the south."**

Dr. Nitobe, the greatest Japanese authority on colonization, also says:

**"It there must be emigration, then it should be southward, as China is impossible on account of its already dense population."**

Mr. Kazan Kayahara voices the same sentiment when he says:

**"China and India will serve no purpose to Japan except as producers of raw materials and consumers of manufactured products."**

Mr. S. Tsumuri, the Director of the Tokio Commercial Museum, tells us:

**"The general idea of Manchuria prevailing among the Japanese is that of a cold and barren country that for the most of the year is uninhabitable and subject to mounted bandits. Young men from Japanese colleges, when asked to accept positions in Manchuria, decline on the ground that it is as much as a man's life is worth to go there."**

Mr. Shirani, the Civil Governor of the Kwangtung Leased Territory, explained his views on the value of Shantung as a colony for his countrymen in these words:—

**"To be frank, whatever data I have collected and studied disheartens me, as I am overwhelmingly led to conclude in the negative."**

So we could go on with many other similar quotations from the leading thinkers of Japan, all frankly confessing the great truth that China offers no field for colonization, but we will conclude with the admission of the highest authority of all, the great man who talks for the Empire, its official mouthpiece, the Premier, the Marquis Okuma. Some months ago he was interviewed by two American women journalists. In answer to their question why the Japanese do not colonize in the neighboring countries more extensively, instead of trying to force the colonization in the Western Hemisphere, Marquis Okuma answered:—

**"The Japanese have colonized extensively in the Hokkaido and Korea." (In fifty years a little over 2,000,000 Japanese have migrated to the Northern island, and in ten years 270,000 have gone over to Korea, while in twenty years, 120,000 have found homes in Formosa.—Editor.) "The climate of Formosa is too hot to permit successful emigration from Japan. But the standards of living in all these territories are lower than those of Japan. If the Japanese laborers emigrate to Manchuria, or Korea or Formosa, they must compete with native laborers whose wages are only one-half or one-third those that the Japanese can earn at home. Consequently the Japanese can only go into those countries in the capacity of landowners or employers of native labor. The necessary outlet for the increasing population is not presented."**

Must we bring forward further evidence to substantiate the truths that we attempted to place before the American people early in the year? If all the leading men of Japan confess to the truth of the facts that were then presented, and China and the neighboring lands in Asia offer no outlet for Japan's surplus, where are the Japanese to go? What is meant by the South Seas? Java is a seething mass of humanity already, and the pressure is sending them into Borneo and Sumatra. The South Seas then must mean the Philippines or Australia and New Zealand.

What then does all the talk in Japan about controlling China signify? If China presents no solution to their great problem, and they insist that they must come over here and dominate the country, it would prove that this policy is one of pure political aggrandizement. There is no other honest deduction from the facts.

## JAPAN'S MEDICO-PUBLICIST

Dr. R. B. Teusler has returned to Tokio. Naturally, he was interviewed. He said some unkind things about those journalists who refuse to see eye to eye with him on the issues pending between Japan and China and Japan and America. We are rather tired and bored with men of his type, and would gladly devote our space to more interesting matters and people, but as he also has acquired the habit of impugning the motives of those who disagree with Japan we are reluctantly compelled to say a few words about this brilliant adjunct to Japan's publicity system. Dr. Teusler has been in America for some months, soliciting funds for his hospital, and at odd times "he wrote articles for the papers and delivered lectures to give the people of the United States a true picture of conditions and opinions in Japan." He did. We can bear testimony to the fact that he worked very hard. Here is a sample of his work, sent out by a leading press association to several hundred of the smaller newspapers throughout the United States. It is a work of art.

It has a familiar ring. Here is an American surgeon who has received an enormous amount of free advertising in the newspapers because of his accidental relationship with the President of the United States, and who so far forgets the position of his own Government as to assert that overt acts on the part of the United States have caused serious international friction. He learned his lesson well while in Japan. Note the statement about the *nonsense which "emanated from a subsidized clique at Peking,"* and the "*we people living in the East, knew that this was an organized attempt to deceive American people and cause trouble between the two nations.*"

# Japan Has No Designs on the Integrity of the Chinese Nation

By Dr. RUDOLPH B. TEUSLER, Head of the International Hospital at Tokyo

**FOR many years America has been Japan's warmest friend, but several direct overt acts on our part have caused serious international friction. The nonsense published in many of the American papers last spring and summer that Japan, taking advantage of the European situation, was about to annex China, close the much discussed "open door" and sit down to digest the whole meal in complacent ease unless we interfered and stopped it emanated from a subsidized clique in Peking.**

**We living in the east know that this was an organized attempt to deceive American people and cause trouble between the two nations.**

**IF JAPAN SHOULD ATTEMPT TO SWALLOW CHINA SHE WOULD HAVE A GREATER ATTACK OF INDIGESTION THAN SHE WOULD CARE TO ENDURE.**

**The partitioning of China would be as dangerous to Japan as to us, and the recent treaties are a distinct safeguard against this. The treaty of south Manchuria and eastern inner Mongolia is nothing more than the FULFILLMENT OF NORMAL CONDITIONS, THE RESULT OF THE PORTSMOUTH TREATY BETWEEN RUSSIA AND JAPAN.**

It is only another disclosure of how the oracle works. Call the other fellow by the short and ugly term, impugn his motives, discredit him. It is the same old story. Notwithstanding that all the world now knows the inside history of Japan's aggression upon China as disclosed in the Japanese and Chinese official *communiques* of last year, the dear, innocent, gullible *medico* keeps prattling over and over again the parrot-like speech learned by rote from his Japanese intimates in Tokyo. The closing sentence of the effusion is a gem. It could only be accepted for publication by editors of small local newspapers who make no pretence of being posted on international affairs. If Dr. Teusler ever took the trouble to read the Portsmouth Peace Treaty and the terms of the Treaties wrung by force from defenseless China last May, and has the hardihood to express the views attributed to him, we can only be charitable, and refrain from reflecting on his intelligence.

His attempt to prove in the Philadelphia *Public Ledger* on March 3 ulto, that the censorship is non-existent in Japan came as a revelation to the editors of that country, and we wonder by what name he will now call the forcible suppression of certain newspapers only a short month ago. We advise him to make the acquaintance of the genial Mr. Zumoto, for years the editor of the *Japan Times*. Dr. Teusler even went so far as to state that Mr. Zumoto was not the editor of the *Japan Times*.

The eminent physician and surgeon should stick to his pills and powders. As the head of St. Luke's Hospital at Tokyo he will always retain our respect and esteem. Our friendly advice to him is to shun international politics and publicity work. There are always two sides to every question. China has her viewpoint. The United States, after all, many have a few honest arguments in her favor, which Dr. Teusler, notwithstanding his accidental intimacy with the Chief Executive, may have overlooked. The man who holds a different opinion based on a more intimate knowledge of the facts is not necessarily a subsidized knave, any more than the physician who disagrees with a diagnosis made by the head of the International Hospital is a quack. Remember that when one starts out to discredit reputable journalists, the latter always have the advantage of the last word. The newspaper clique at Peking so thoughtlessly maligned were loyal and honorable British journalists. The American editors so openly denounced are upholding the principles of the square deal and siding with the weak against the strong. Dr. Teusler has worked hard for the cause of Japan. His efforts should not pass unrewarded. He has earned the Sacred Treasure. If his intimate friend, Count Okuma, fails to procure it for him, there is no gratitude left in Japan.

## WILL JAPAN PURCHASE THE PHILIPPINES AND NETHERLANDS INDIES?

The *Yamato*, one of the leading dailies of Tokyo, has published a series of editorials advocating the acquisition of the Dutch East Indies by *purchase*. As this is the first time to our recollection that any Japanese publication has ever evidenced a desire to give any *quid pro quo* for other people's property that Japan may covet, it is interesting to inquire into this rather unusual departure from accepted standards.

It was only a few months back, that Mr. Takakoshi, to the amazement of the Western world, openly advocated the seizure of the Dutch East Indies, because of their strategic menace to the security of Japan, while under the rule of a small and weak state like Holland. The doctrine of the predatory state, so fervently preached by this leader of Japanese thought, attracted immediate attention in Holland, and led the *Nieuwe Rotterdamsche Courant*, to devote a series of editorials to a discussion of this new danger. The sensible Dutch editors, instead of advocating a policy of scuttle before the menace of Japan, frankly acknowledged the plausibility of the Japanese contentions, and pointed out:—

**"The Sunda Straits, the 'entrance to the Indian Ocean' is in these times of violation of international law, at the mercy of the first mighty one who is pleased to serve his own interests by taking possession of this important passage. Japan cannot but consider our powerlessness to prevent this; and we must consider the possibility of Japan taking the step herself. True, so long as the war lasts, it will probably do no such thing; but when at the conclusion of peace, changes are introduced into the territorial distribution of the earth, Sunda Strait, if found in an exposed condition in the hands of a weakling, might very well be apportioned to a stronger master. It is therefore most urgent that Netherlands India shall at the conclusion of peace, be able to declare to the congregation of nations that it can itself defend Sunda Strait. If Japan sees that her interests are no longer being menaced by our weakness and sees the stuff its neighbors are made of, the relations between the two nations will reach a more firm and sure footing."**

Travellers returning from Java all testify that the Dutch are rapidly strengthening the defenses of the Islands to resist seizure or future invasion. It is quite evident the Dutch do not contemplate handing over their colonies without a fight.

In the meantime, Dr. Nitobe, the eminent Japanese scholar and writer, now occupying the Chair of Colonial History at the Imperial University of Tokio, has been making a tour of the "South Seas," and recently returned to Japan, and made public his views as to conditions in Java. It is interesting to recall that in addition to advocating the seizure of the Dutch possessions because of their strategic menace to Japan, Japanese publicists have also employed the pretext of improving the conditions of the "down-trodden" natives, as justification for their occupation of Holland's colonies. It is refreshing to read in the *Japan Advertiser* an editorial summary of Dr. Nitobe's views. He admits that although he at one time also shared the opinion that the natives were oppressed, after seeing for himself what the Dutch are doing to ameliorate their condition he has completely abandoned it.

The *Japan Advertiser* therefore inclines to the belief that as Dr. Nitobe is a great authority on colonial affairs, his revised opinions are a direct challenge to the school of Japanese writers and politicians who believe that Japan's future is to be sought in the South Seas and who have advocated expansion at the expense of the Netherlands. The *Japan Advertiser* has apparently overlooked the fact that Dr. Nitobe also visited the Philippines, and while there, was interviewed by the editor of the *Free Press*. The Doctor's views are of special interest because of his prominence and intimacy with Marquis Okuma. He said, in effect:—

**"So long as the Philippines are held by the United States, Japan is not worrying much about the islands. At the same time it would rather have the islands than not; but so long as they are held by the United States, Japan will not go to war in the hope of thus acquiring them, holding that they are not**

**worth the blood sacrifice that would be entailed, apart from the incidental financial expense. Nevertheless, should the** *United States withdraw, Japan would expect to exercise a controlling interest in the islands; and, should they be in danger of passing into the hands of some other Power, Japan would not stand idly by.*

**"For the present, Japan's policy in China and the Philippines is one of 'peaceful penetration' with the trend of emigration southwards. . . As to the ever growing population in Japan, Dr. Nitobe thinks that they can take care of 80,000,000 by industrial expansion.** *If there must be emigration then it should be southward, as China is impossible on account of its already dense population.*"

It is evident therefore that Dr. Nitobe remains an advocate of expansion southwards. The question arises, where will the southward impulse of emigration from Japan make itself felt? Certainly not in Java, with its teeming population of 30,000,000, doubling their numbers in fifty years. If not in Java, perhaps Sumatra or Borneo, but here we have the identical same conditions as exist in Formosa; head hunters, warlike and savage tribes, hot, unhealthy climate, and all the other drawbacks to colonization, which have kept the Japanese out of Formosa.

Dr. Nitobe says the policy of Japan toward the Philippines is one of "peaceful penetration." To that end the Japanese have invested in sugar estates and other industries in the islands, and the Department of Foreign Affairs has given permission to the Osaka Shosen Kaisha to convey emigrants to Manila, providing that not more than 150 are taken each voyage, the permission to take effect on September 1st. The pressure from within requires a safety valve, and we now have the *Yamato* actually advocating the purchase of the Dutch East Indies. Would this help solve the question of the surplus population, or is it put forward solely for acquiring strategic control of the Eastern seas? At any rate it is a hopeful sign, when a leading Japanese daily inclines to the view, that if some other nation weaker than Japan, has something that the latter wants, the best way is to give something in return for the coveted possession. Holland is a European nation, and the Powers will not permit her to be treated like China.

* * * * *

The Washington correspondent of the Philadelphia *North American* in a communication to his paper dated July 12, clears up the real object of Dr. Nitobe's tour of the South Seas. He says:—"Secret reports made to the administration by officials in the Philippines indicate that Japan has entertained hope, not entirely dissipated, of obtaining possession of the islands in the event of their liberation by the United States. Even then the islands would not be forcibly seized, but would be subjected to an extension of Japanese influence similar to the procedure followed by Tokio in the case of Manchuria and now of the remainder of China.

"It is quite apparent that Tokio regards the Filipinos unfit for self-government, that their liberation would result in anarchy and that this condition would furnish Japan a plausible excuse to assume a burden the United States had laid down.

"Purchase of the Philippines by Japan from the United States also, it appears, has been considered in Tokio. The administration has been furnished with the copy of a report made to Count Okuma, prime minister of Japan, by Doctor Nitobe, a distinguished professor in the Imperial University at Tokio, recommending that the Japanese government offer the Unted States 600,000,000 yen, about $300,000,000, for the islands. Administration officials say they do not believe this report genuine.

"The purpose of the report apparently was to set forth the great desirability of the acquisition of the Philippines by Japan. It elaborates an exceedingly ingenious argument, made with a view to showing that it would be to the advantage not only of Japan to acquire, but of the United States to relinquish the islands.

"So far as the United States is concerned, the argument employed is that America could not, except by building up a tremendous naval and military establishment, protect the Philippines from aggression by a first-class power.

"Japan is in possession of the Ladrone, Marshall and Caroline groups of Pacific islands, seized from Germany, which effectually screen the Philippines from the United States. Japan is pouring its people into these islands, establishing enterprises and develpping their resources. Permanent occupation apparently is the Japanese intention."

## TO OUR READERS

The policy of the FAR EASTERN REVIEW is based on a sympathetic recognition of the rights of all nations to equal opportunities in the trade and development of China. We have upheld the Open Door as the cardinal principle of American diplomacy in the East; on its rigid application hinges the independence of the Chinese republic, and the future peace of the world. We have fought for fair play for China in loan and railway agreements; we have done our best to bring about an equitable awarding of government tenders. We have criticised and condemned all tendencies toward the establishment and operation of favored monopolies for commercial combinations. We have tried to be fair and just to all, while adhering to our conception of right and justice.

We have watched with growing concern the tendency of some Powers to deviate from the doctrine of the Open Door and revert to the dangerous policy of the Spheres of Influence. We have noted with genuine regret that many of our contemporaries have condoned and justified these infractions of international law as applied to this part of the world.

Notwithstanding the proofs that were in our possession of irregularities and discriminations resorted to for the advancement of Japanese trade interests to the detriment of others, we have in the past, gone out of our way to seek for a justification of these actions. We have refrained from open criticism of Japanese policies and tactics, and ignored vital issues with America, believing as we do, with the historian Lecky, that:—

**"Most modern wars may be ultimately traced to national antipathies which have been largely created by newspaper invectives and by the gross partiality of newspaper representations."**

We have confided in the honor of Japan to do what is right in the long run. Up to the very day that Japan presented the demands to President Yuan, we imposed implicit faith in the *bona fides* of Japanese policy toward China, and that at the last minute the "splendid spirit of the Samurai" would assert itself. There was only one thing for an American editor to do when the Open Door and the independence of China were threatened, and that was, to carry the fight home to the press of America. We found it almost impossible to make headway against the skilfully directed Japanese publicity propaganda in the United States. At every step we were attacked and villified by the paid writers of the system. This campaign of denials, misrepresentation, refusal to adhere to or argue on the facts, and the discrediting of all those who entertain different views, has prevented a full and free discussion of both sides of these questions.

In presenting the other side of these questions, we do so with no intention of carrying on an anti-Japanese propaganda. It is our sincere hope that an intelligent presentation of pertinent and vital facts, will promote a healthy discussion and clear up many misconceptions. The issues exist. It is folly to close our eyes to them, or play the ostrich. If these questions are to be solved, a full and frank discussion of both sides is imperative. These issues cannot be settled by the full acceptance of Japan's viewpoint. Therefore it is no spirit of ill-will towards Japan or the Japanese which prompts us to take issue with their sides of the questions, but an honest desire to pave the way towards a peaceful, harmonious settlement with justice to all. There is only one ending to the present drift of international political currents in the Far East.

If the facts presented on the other side are unpalatable to the Japanese, they can thank the coterie of American publicists and lecturers working in harmony with their official publicity bureau, who have done all in their power to stifle free discussion by impugning the motives of those who disagree with them. On the whole, it is only fair to confess, that we have received courteous treatment from the Japanese in charge of the publicity work in America. Dr. Iyenaga, Mr. Chugo Ohira, Mr. Kawakami, Mr. Kinnosuki and others, have at least been gentlemanly in their retorts, and defense of Japanese policies.

This cannot be said of the most prominent American adjuncts to their system.

## NEW CHINA'S MESSAGE TO AMERICA

**"All orientals are subjected to unlimited oppression in the United States. China and Japan must stand together to break down the wall of racial prejudice," is the slogan of New China.**

They are the words of *Generalissimo* Hwang-Hsin, "the Hero of the Revolution," or the "George Washington of China," as he is called in the American press.

Japanese newspapers are outspoken in their admiration of General Hwang and Dr. Sun Yat-sen, as the two prominent Chinese who fully understand and sympathize with their aims and policies. President Li Yuan-hung is also "pro-Japanese," while the new Minister of Foreign Affairs, Mr. Tang Shao-yi, is emphatic in his declarations that China must work together with Japan. The President has appointed Dr. Sun and General Hwang as his two High Advisers. What is the reason for this complete change in Chinese sentiment?

One day during the last week of July, a notable Chino-Japanese love-feast was held in one of the Chinese gardens on the outskirts of Shanghai. There were gathered together all the leaders of the Southern Chinese party, and the prominent Japanese officials and merchants. Many speeches were made, but no reports were given to the local press. Even the Chinese vernacular papers failed to publish extracts from the speeches. Shanghai wondered what it was all about, and then promptly forgot that the event had transpired.

The news that was so carefully concealed from China, was reported in full to Japan, where an inkling of the truth was allowed to leak out through the official *Japan Times*. From the short censored report it appears that General Hwang Hsin was the host at this notable gathering. His speech is fraught with sinister significance. The words should sink deep into the minds of American statesmen and editors. General Hwang told his hearers:

**"Homed in Eastern Asia, Japan and China must needs understand each other and go hand in hand. While in America I have made a study of that country. Of all countries of the West, America is the most free. In spite of this, all Orientals there are subjected to unlimited oppression. Not the Chinese alone but the Japanese feel the effect of it. Seeing that even America is thus disposed toward the Orient, it is not difficult to infer from it the attitude of other Western countries. The racial wall that separates the East from the West may never be removed. Europe is now in the throes of a great war and for the moment it has no time to put its finger in Oriental affairs. But when the war is over, the European Powers will renew with increased vigour their movement of eastern penetration. Fortunately Japan and China are not directly involved in the struggle, and it behooves them that they now study and make plans to meet the onrush of events on the return of peace. Here in this gathering there is not one white man, all present being solely Japanese and Chinese, and I feel I am in the midst of my own countrymen. I can say what I like, with no fear of being misunderstood, which I could not do, if there were any white men here. Herein lies the foundation of Chino-Japanese friendship."**

The editor of the *Japan Times*, then gratuitously adds the following editorial comment:

**"His two years of residence in America have apparently opened the eyes of General Hwang Hsin to the kind of treatment his countrymen are receiving there. We have no desire, nor any reason for it, to distort facts, and to state facts only, no honest Americans in their frank moments will deny that the Republic of United States is making China pay heavily for its friendship, namely at the price of silent and ignoble submission to unchristian discriminations and prejudices. However, this by the way. General Hwang Hsin touches the key-note when he speaks of the wall of racial prejudices.**

**"The great work which Japan regards as one of her missions is the pulling down of this wall of racial prejudices. The assimilation of East and West, the harmonization of the two civilizations, the moral and intellectual elevation of Orientals, have all but one object, the emancipation of the East from the claim of superiority of the West. As General Hwang Hsin says, it is on this common object the foundation of Chino-Japanese friendship must be laid."**

The outspoken and frank utterances of General Hwang are only surpassed by the confession of the editor of the *Japan Times* that "the great work which Japan regards as one of her missions is the pulling down of this wall of racial prejudice, and the emancipation of the East from the claim of superiority of the West." General Hwang Hsin, the *protege* of Japan, says that on this common object, the foundation of Chino-Japanese friendship must be based. It is well to remember that when the *Japan Times*, an official organ of the Japanese Government, is permitted to publish the above significant extract from the speech of General Hwang, he must have elaborated the point along lines of detail that would make most interesting reading for foreigners.

As General Hwang Hsin has sounded the key-note of New China's policy, so has Dr. Sun Yat-sen placed himself on record in unmistakable terms. During the negotiations over the Japanese demands, the *Mainichi* published a remarkable interview wiih Dr. Sun, then living in exile in Tokyo. Dr. Sun did not consider that the Japanese demands were excessive, and went on to say:

**"China and Japan could not make any headway against the European Powers unless they combined. China would be ruined without the help of Japan, and Japan would be isolated unless China stood by her. The conditions of the world to-day demanded an effective alliance between China and Japan to maintain the peace of the Orient."**

Do Americans understand what it all means? Under the leadership of Japan, the Chinese are being hypnotized into the belief that they can throw off the yoke of extra-territoriality, and then, with China's great resources and unlimited number of men, they will together batter down the wall of "racial prejudice" which bars the way to unrestricted entrance into America and the British colonies in the Pacific.

The leaven is working. Events are moving rapidly. Prince Yamagata feels the weight of his years and has expressed the desire to retire completely from official life. The way is being paved for the coming of Field Marshal Count Terauchi, to take over the premiership, and the leadership of the Choshu Clan.

If Japan is honest in her eleventh hour protestations of friendship for the Chinese, and the latter reciprocate the sentiment, and accept the aggressions of last year as an accomplished fact: if China is now willing to stand side by side with Japan to demand racial equality from the West, then it is time America woke up. The American Government is on record that it cannot recognize the impairments of the existing treaties as applied to China. While the war is in progress and America is preoccupied with her presidential elections, history is being made in the Far East. This is no time for America to indulge in day dreams. The East is stirring. It is preparing. Unless America arouses herself from her lethargy, she will rue the day that she listened to the preachings of professional pacifists whose lullabies have rocked her people to sleep while others were arming to conquer their place in the sun.

If Japan is not sincere in her professions of friendship and behind her words of amity and solemn promises to preserve the independence of China there lurks the menace of the Mikado's yoke; if China's independence is to be taken away by the same means and by the same man who ravaged the honor of Korea, it is time for America to stir herself, for in either case, the day will be perceptibly hastened when the United States will be brought face to face with vital issues in the Pacific which we have shirked and pussy-footed because of our unpreparedness.

# IMPROVEMENT OF GRAND CANAL

On January 30, 1914, the Government of the Republic of China signed an agreement with the American National Red Cross Society allowing that organization to effect a loan of $20,000,000 (United States Currency) for the purpose of improving the watercourses embraced in what is known as the Hwai River District—a region periodically visited by devastating floods and consequent famine.

The philanthrophic character of the proposed loan for this work militated against its immediate acceptance in America, the war in Europe calling for the employment of vast sums of money in vitally practical avenues. The Red Cross Society, however, determined to pursue an investigation to determine just what labor and expense would be entailed in the scheme, and despatched an engineering commission headed by Colonel Siebert to make a survey. Colonel Siebert dealt with the subject exhaustively in a carefully compiled report, but the war still raged and the bankers of America, desirous as they might be of assisting to relieve a large section of the Chinese people of the terrors of floods and famine, found themselves unable to advance the necessary money to carry out the whole of the scheme. But they were later ready to consider one phase, which is of practical and lasting value, namely, the improvement of the section of the Grand Canal traversing the area, and embraced by the Yellow River on the north and the Yangtsze River on the south.

This famous and ancient waterway had been allowed to silt and deteriorate so much that in parts it has become practically useless to serve the country through which it passed, and as a first step in the treatment of the great flood and famine area its improvement should be of far-reaching importance, not only because it will provide uninterrupted communication with the distressed area but also because it will re-establish the Canal as an artery of commerce, thus making it of constant advantage to all traders desirous of reaching the rich regions that it taps.

Agreements have therefore been entered into with American financiers and contractors to undertake the work. It is divided into two sections, one the part of the canal which traverses the Province of Kiangsu from the Yangtsze, and the other the section which crosses Shantung province to the Yellow River.

The Agreements have been made with the American International Corporation, who are called upon to "recommend to the Chinese Government for appointment expert engineers to investigate and report upon the most recent conditions relating to all other works included in the Hwai River Conservancy scheme and to draw up detailed plans for the carrying out of the same, to serve as a basis for its arrangements for raising a further loan or loans in order to complete the whole of the said Hwai River Conservancy works."

With regard to the Kiangsu section the Government authorises the Corporation to issue a gold loan for an amount not exceeding $3,000,000, U. S. currency, at 90 per cent, bearing interest at 7 per cent. per annum, to be paid semi-annually to the bond-holders. The term of the loan is to be twenty years, and the loan is to be redeemed in fifteen equal annual instalments by drawings, though provision is made that if the Government desires to redeem the loan after five years from the date of issue it may do so by paying a premium of one and a half per cent on the par value of the bonds. The loan is to constitute a direct liability and obligation of the Government, and is to be secured by all tolls and taxes, exclusive of likin, now levied or to be levied on the Grand Canal in Kiangsu Province, estimated at $600,000 Mexican currency. Should the tolls and taxes not equal this amount the Government agrees to make up the deficiency from other sources. Safeguards against reckless expenditure are provided, the agreement stipulating that requisitions for loan funds for the carrying out of the engineering work shall be drawn up by the Engineer-in-Chief and approved by the Director-General, who, before endorsing the same for presentation to the Banks, shall consult with the contracting engineer as to the feasibility and reasonableness of the work proposed, the Contracting Engineer to furnish a certificate if he approves the work.

A Head Works Bureau, to be called the "Hwai River Conservancy Grand Canal Improvement Works Bureau," is to be established at the town of Tsingkiangpu. It will be under the direction of a Chinese Director-General, appointed by the Government, with whom will be associated an American Chief Engineer and an American Chief Accountant. Statements of the receipts and disbursements are to be made monthly in Chinese and English in the Department of the Chief Accountant, who is to organize and supervise and report upon them for the information of the Director-General and the Corporation.

In order to take charge of the collection of tolls and taxes which constitute the security for the loan, the Head Works Bureau will establish a Canal Department Office, the revenue collected by this Bureau to be paid into the fiscal agency of the Corporation to be applied to the interest and amortization of the loan until such is paid in full. The Director-General will have charge of the organization and management of the Bureau, assisted by the Chief Accountant.

The Agreement provides that the work shall be done on a percentage basis by contractors designated by the Corporation, "the Contractors to be a firm of known reputation, of high standing, and who have had large experience in the successful carrying out of great construction enterprises, and in whom the Corporation have the utmost confidence that the work entrusted to their care shall be carried out rapidly, efficiently and economically." This concern is to open an office in Peking where the principal accounts and records of the work shall be kept, the same to be open at all and any time to the inspection of the Chinese authorities and the Corporation. The Contractors are to give their personal attention to the enterprise and for this they are to receive as remuneration ten per cent of the cost of the work.

Insofar as the purchase of materials is concerned it is provided that those of Chinese make shall be employed if prices and quality are equal, otherwise American materials and machines will be used when the price does not exceed the price of the same quality in other foreign markets.

### The Shantung Section

The agreement with regard to the Shantung Section was signed by the Government of Shantung Province, with the approval of the Central Government, and authorises the American International Corporation to raise a loan similar to the above, the first issue of bonds to be for $2,500,000 U.S. currency, at 90 per cent. The interest is to be 7 per cent per annum and the term of the loan thirty years, redemption to be in twenty-five equal annual instalments, dating from the fifth year of issue. The security for the loan is to be (1) the lands which are to be reclaimed and owned by the Government of Shantung Province, approximately 300,000 mow, (2) the revenues of the Government derived or which may be derived from the Government lands effected by the proposed work, and also by additional revenue from the sale of, lease of, or taxation of all reclaimed or improved lands, as well as any special taxes which may be levied by the Government on lands benefited by the construction work, (3) all taxes derived or to be derived from all other lands affected by this improvement which the Government estimates to be approximately 500,000 mow, (4) all tolls and taxes now derived or to be derived from the use of the south Grand Canal in Shantung Province during the life of the loan, and (5) all machinery and tools purchased by loan funds. In case these revenues prove insufficient the Government undertakes to make up the deficiency with other revenues provided for in the budget of Shantung Province. If no money is available for repayment on the due dates then after a reasonable number of days of grace the Corporation shall supervise the collection of the revenues pledged as security for the loan.

The Government agrees to set apart a portion of the surplus receipts turned over by the Conservancy Bureau for the maintenance of the Canal. The proceeds of the loan are only to be used for the improvement of the South Grand Canal in Shantung Province, commencing at Pangchiakou and Lanhuangpa in the

north, and ending at Weishanhu and Taierhchuang in the south, and for such extensions as may be required, as well as for work in direct connexion with the valley of the Wen and San rivers, the Po river and marshes and other tributaries of the main canal, and for the improvement of the reclaimed lands. The work is to be completed within thirty months from the signing of the agreement.

A Head Works Bureau is to be established at Tsining-hsien, with a Chinese Director-General in charge assisted by an American Chief Engineer and Chief Accountant, both appointments to be made by the Director-General on the recommendation of the Corporation. The qualifications of the Chief Engineer are to be five years' experience in the engineering work of a well-known river; an engineer who enjoys the best professional reputation. The work is to be done by a Contracting firm as in the previous agreement.

The well-known contracting firm of Siems and Carey, of St. Paul, U. S., have been selected to carry out the scheme, and the selection is one which carries a guarantee for efficiency. In America the firm is classed amongst the largest railway builders of the world, their latest achievement being the construction in record time of a great section of the Grand Trunk Pacific railroad in Canada.

Mr. W. F. Carey, a partner in the Contracting firm, will personally conduct operations. He has recently been in America and returns shortly to manage affairs in China.

MR. PAN-FU
VICE-DIRECTOR GENERAL OF THE CONSERVATION BUREAU.

The area of the Grand Canal in Shantung covered by the agreement was described in a report published in the FAR EASTERN REVIEW for February, 1916. The Kiangsu section has yet to be surveyed.

In order to study the conditions of the Grand Canal in Shantung, and the various rivers and lakes connected with the Canal, the Grand Canal Conservancy Bureau of Shantung was established about a year ago, under the direction of Mr. Pan-fu, and has done a considerable amount of work. Various data were collected, a comprehensive survey was made and a project for a general improvement was drawn up. The proposed work in Shantung covers a distance of about 500 miles along the Canal, and is planned to benefit both navigation and reclamation. The returns from navigation are estimated to pay for the whole improvement work. The land which will be reclaimed is estimated at some 100,000 acres in the Tsining and Yutai districts alone, and after the necessary ditches are dug, dykes built, and public uses provided for it is calculated that 97,000 acres can go into cultivation. This is estimated to yield a net profit per annum of $2,496,185.

The articles produced and manufactured in the districts dependent upon the Grand Canal for transportation are corn, salt, coal, tea, white wine (kaoliang), bean oil, bean cake, silk and cotton nankeen, dried dates, dried persimmon, hemp, ground nuts, timber, porcelain, bamboo materials, leather, medicine, etc. Foreign imports include cotton yarn, long cloth, kerosene oil, matches, paper, tobaccos, prussian blue, etc.

The craft utilised on the canal for transportation are of fifteen varieties. For instance a boat which loads fish carries nothing else; similarly with coal, etc. There are at present 8,050 boats with a tonnage of 99,000 plying on the Canal.

The chief credit for the advancement of the proposition to restore the Grand Canal to the position of usefulness which its ancient builders designed for it must undoubtedly be given to Mr. Pan-fu, the Vice-Director General of the National Conservancy Bureau. Mr. Pan has for many years made a close study of conservancy needs in the great plains of the Yellow, the Hwai, and the Yangtsze river valleys, and of late years he has particularly devoted himself to the Grand Canal areas. It was as a result of his labours that the present proposal was listened to by the American financiers. So methodical had the work of Mr. Pan been that he was able to convince the engineers representing the financiers of the commercial importance of the proposal without difficulty, and it was not very long after his negotiations with them on the Canal itself that the agreement to finance and carry out the work was signed. Mr. Pan was able to show that the Canal had become useless in places, and vast stretches of territory had become lost to agriculture, owing to the silting up of practically all the drainage systems of Northern Kiangsu—conditions which could easily be corrected. Rivers had lost their courses in time and had taken the Grand Canal as a common outlet, causing recurring inundations each of which left the situation worse than the last.

To correct this and to restore the Canal to its proper place in the commercial scheme has long been Mr. Pan's chief aim, and now that he has managed to have that work begun he is planning a wider scope for the energies of the Conservancy Bureau. He strongly advocates the Government to pay careful attention to the vagaries of the Pearl River at Canton; the condition of the Tungting Lake in Hunan Province—sources of annual trouble—and he urges that the Yellow River, China's greatest conservancy problem, should be grappled with tenaciously. He and the Director-General of the Conservancy Bureau, Mr. Chen Pang-ping, are now endeavoring to impress upon the Government the necessity of adopting a consistent conservancy policy with a view ultimately of ridding China of the curse which certain of her rivers have been to her.

Mr. Pan will have the personal direction of the work on the improvement of the Grand Canal, and China is fortunate in having an engineer who is so well versed with the conditions of the region to undertake the work.

## THE MAN OF THE HOUR IN JAPAN

(*Continued from page 94.*)

attention for some time. Caucuses of party leaders have been meeting at his private residence and prolonged discussions have been going on about unity of opinion in the cabinet, especially in regard to the China question. Unanimity is not expected, however, without some change in the cabinet. It is believed that Count Okuma must go and give place to a younger and more virile supporter of the strong hand in China. In that case the name of Baron Kato is mentioned as future premier, since it is believed that he left the cabinet because he was not permitted by the Elder Statesmen to oppose British policy in China; but the man the nation would most heartily welcome at the head of affairs in Tokio is Count Terauchi, Governor-General of Korea. Remembering the adroit manner in which he brought about the annexation of Korea within two months after he assumed the office of Resident-General, the nation believes he is the man of the hour for Japan in handling the difficult China question. A man is needed whose strokes are swift, few, and effective."

# GASTON, WILLIAMS AND WIGMORE

Three young men, each a specialist in his particular line of business, founded a new corporation in New York City with $1,000 capital, just three months after the outbreak of the war. The first year's business of this new concern aggregated over $47,000,000 with net profits of over ten per cent, or in excess of $4,800,000, and a balance of several millions of dollars of unfilled orders on the books.

The firm is now known as Gaston, Williams and Wigmore, Inc., and its story has become one of the commercial epics of the war.

They started in a one-room office at No. 30 Broad Street with not a dollar's worth of war or peace orders. All were men of extraordinary energy. Each one of the firm had acquired by hard work one of the essential elements in success of such a firm, viz.: Knowledge of manufacturing, selling and transporting merchandise.

The three men together constituted a board of experts in the matter of finding out what kind of war munitions were needed, or what kind of merchandise was needed in foreign countries whose commerce had been paralyzed by the war, then buying the merchandise or the war munitions skillfully, and finally finding ways to ship it. In short, specialized ability, trained by doing small things well, combined with energy, quickness, common sense and courage enabled them to do big things successfully.

In eighteen months this firm of three young men grew from its single room costing about $50 a month rent at No. 30 Broad Street, into a colossal organization, incorporated in New York, in London, in Canada, with important branches or service departments in France, Russia, South America, China, Japan, Portugal and Cuba, including twenty-two branches in South America, occupying a whole floor in the Guaranty Trust Building, with steamship offices in Equitable Building, with ships owned outright and others under charter, with assets valued at over $17,000,000, with cash paid in actually exceeding $16,000,000, with orders, war and commercial, rolling in from distant corners of the earth at the rate of about a million dollars a week.

(World's Work) Mr. Charles H. Sabin,
As President of the Guaranty Trust Company, Mr. Sabin is one of the Financial Powers of the United States

The firm from the start had the powerful backing of the Guaranty Trust Company, one of the financial giants of America, as the young men early won the confidence of Charles H. Sabin, the president of that great institution. Charles H. Sabin became chairman of the board of the firm, and so the firm has become the largest exporting and importing firm in the United States. They are finding foreign markets for made-in-America merchandise, *outside of war orders*, at the rate of nearly fifty millions a year.

In April the capitalization of the firm was made 300,000 shares, of no par value, of which 150,000 shares were sold to a bankers' syndicate. The public subscribed for 83,000 shares, the offering price to the public being $70 a share. The cost to the underwriters was $50.84 a share. The syndicate has about 67,000 shares left which it acquired at that price.

About the same time Gaston, Williams & Wigmore also sold $5,000,000 of notes to the Guaranty Trust Company. Proceeds from the notes and stock went for additional working capital. On April 5, when the shares were first dealt in on the Curb, they were quoted at $70 a share. The highest was 71, the lowest 48¾. It sold on May 27, at 52½.

Since the beginning of the war, the firm have bought extensively for several of the allied governments, furnishing and shipping vast quantities of munitions and supplies. It is intended to extend its business into all commercial lines.

How the firm got its first order is told by Mr. Gaston in this way. Three days after the firm was incorporated for $1,000, he sailed on the Lusitania. He was after war orders.

"I found," he says, "hundreds of fellows sitting on the doorsteps of the War Department in London, all on the same job as myself—anxious to book war orders. I knew the Government wanted motor trucks, and I had arranged with the Packard and White people to sell me in large quantities. They both had told me, however, that my mission was hopeless, as they had their ablest experts there.

"Finally, by push, not pull, I got a hearing.

"By convincing them that I could make quick delivery on the other side—having control of shipping facilities—I was given a trial order for fifty trucks for delivery at Liverpool.

"My partners rushed the shipment, and we landed them ahead of time.

"Our responsibility ended there. But I found that only three trucks a day could be forwarded to London. That was all the railway cars they had big enough to hold the monster crates.

"I jumped in. I wanted the War Department to get the trucks and not excuses. With the aid of my friend Henry Thornton, formerly of the Long Island Railroad and now head of the Great Eastern in England, I had the British Isles combed for the big railway cars they possessed. Instead of three trucks, we landed the whole fifty in one night.

"I took the precaution of having mechanics sent over from this country, and bright and early in the morning they had every car tuned up, oiled up, filled up and running as smooth as velvet.

"I went straight to the War Department—proudly, I admit—was ushered in, and said: 'Gentlemen, your fifty trucks are at your garage with motors running, ready for action.'

"They were astounded.

"Not only did I receive contracts for more trucks—thousands of them—but they asked us to become their forwarding agents for all other truck shipments from Liverpool to London,

a very important and exacting work, which had been in the hands of an English firm.

"We were made, also, the exclusive agents for the supply of American trucks to the Government. Under the contract we are still making shipments every week."

This revolutionary feat became the talk of the Allies.

The Russian Government was in a heartbreaking hole. It had no shipping facilities from America, and, besides, it could pay only in sterling, in London. This did not suit American automobile manufacturers. The Russians beseeched Gaston to hurry to Petrograd and help them out. He did.

One shipload of motor trucks was collected here and there at automobile factories of this country, put on a specially chartered tramp steamer in New York, the 8,400-ton Suruga, with an army of mechanics, carpenters and other workmen to make alterations in the motor trucks to suit them for army use on the way across the Atlantic. The entire shipload was landed at Archangel, Russia. Gaston went with them, so important to the firm was this first great shipment. The Russian Government refused to let him go home. His wife joined him, and he spent four months straightening out Russian transportation tangles—organizing an important subsidiary company there and booking more business for American manufacturers, American railroads, American ships and American workmen. The aggregate business of the firm is in permanent commercial lines, embracing motor cars, trucks, farming implements, metals, talking machines, electrical equipment, typewriters, locomotives, railway supplies and many other American products.

In April last the company had unfilled orders on its books for $3,000,000 of automobiles and motor trucks due to the contracts it has for the exclusive sale abroad of these products manufactured by large American companies. These orders are from dealers and merchants in Russia for the commercial trade alone. The firm sold between $6,000,000 and $7,000,000 of railway supplies last year to Europeans and more than $10,000,000 of aluminum, lead and other metals.

The firm now occupies the same position in the commercial field as that of the American International Corporation, which was recently formed by American financiers with $50,000,000 capital to finance railroads, traction and public service projects in foreign countries.

Mr. George A. Gaston
President of Gaston, Williams & Wigmore, Inc., who in co-operation with the Guaranty Trust Company have organized a new American Merchant Fleet

Mr. William H. Williams
Treasurer of Gaston, Williams & Wigmore, Inc.

With the new financing the concern will have the following capitalization: $5,000,000 short term notes and 300,000 shares of stock without par value.

Charles H. Sabin, president of the Guaranty Trust Company, is at present, and will continue to be, the chairman of the Board of Directors of Gaston, Williams and Wigmore, Incorporated.

About a year ago the firm decided to extend their activities throughout the Far East and acquired the services of Messrs. J. J. Keegan and H. J. Rosencrantz to act as Managing Directors

of the Far Eastern Division, and to organize, establish and direct the business in this great territory.

The preliminary organization work carried forward under their direction aroused the interest of the strongest manufacturing interests of America and agency arrangements were concluded whereby the firm would represent those whose commodities were required throughout the Far East, and particularly the makers of machinery and equipment essential to the industrial development of the territory.

Messrs. Keegan and Rosencrantz have arrived in China and are giving their attention to the establishment of the Shanghai office, which will be the head office of the Far East for Messrs. Gaston, Williams & Wigmore, Inc., before extending the firm's activities in other parts. They have secured a splendid location for their offices on the ground floor of the Union Insurance Building on The Bund, which will be laid out as a combined office and show-room for the display of machinery and other commodities in which they will specialize. A branch office of the firm has also been opened in Tokyo. They hope, by the exercise of a broad policy and legitimate methods, and by living up to the reputation of the firm in exactitude, vigilance, promptness and faithfulness to orders and contracts which put Gaston, Williams & Wigmore, first in the European field eighteen months ago, to also win commercial success throughout the Far East and particularly in China.

Although the new organization is backed by one of the greatest financial institutions of America and is capable of successfully carrying through transactions of any magnitude it must nevertheless not be considered as carrying a menace to the trade interests of others. For years many of the largest American manufacturers have been represented in China and other foreign fields by firms other than American, largely because of the fact that there were few large American merchant concerns doing business in foreign lands.

## SHANGHAI CONSULATE PURCHASE

The victorious end of a struggle that began several decades ago came on August 18, when Mr. Thomas Sammons, the American Consul-General at Shanghai, turned over a cheque for Taels 425,000 to Mr. Edward I. Ezra in exchange for the six mow of land and buildings where the consulate is now located, on one of the finest sites for the purpose that could be secured in Shanghai, and practically the only one left that was suitable.

It is not the intention here to go into the history of this struggle, which has been brought to a successful conclusion by Consul-General Sammons, aided by the entire American community, except to detail the latter stages in order that Americans generally may appreciate the generosity displayed by Mr. Ezra, who was not at all directly interested, being a British subject.

Several years ago the Consulate secured an option on the property with the expectation that money was soon to be appropriated by Congress for its purchase. This option was renewed from time to time, as one Congress after another failed to make the necessary funds available. Meantime, the holders of the property had mortgaged it to Japanese interests, headed by the Mitsui Bussan Kaisha, for Tls. 225,000, and at the time when Congress was gradually coming around to see the necessity for this appropriation, the American Government had no option on the property, and it looked as though this very valuable site would be taken over by the Japanese, at a foreclosure sale, and be added to the already extensive premises of the Japanese Consulate, which adjoins it on the north.

The syndicate owning the property had previously approached Mr. Ezra, one of the largest property owners in Shanghai, hoping he would buy the property, and thus enable them to discharge the mortgage and obtain some cash from the transaction instead of taking chances on a foreclosure sale. This offer to Mr. Ezra, coming to the notice of the Consul-General, led him to take the matter of the purchase up with Mr. Ezra, and an arrangement was finally made whereby Mr. Ezra consented to advance the money necessary to buy the property, agreeing to turn it over to the American Government for exactly what it cost him.

The news that Congress had made the appropriation reached Shanghai by cable early in August and Mr. Ezra immediately set about purchasing the property. It had been offered to the Americans for Taels 475,000 and was offered to Mr. Ezra at Tls. 450,000, who made a counter offer of Tls. 400,000, and the syndicate, fearing they would have no other offer as good, before the foreclosure date, split the difference and sold the property to Mr. Ezra at Tls. 425,000.

Then came the announcement in the public press that the property had been bought on behalf of the American Government, which had appropriated $355,000 gold for the purchase of this site. Then the syndicate, metaphorically, began to run around in circles, seeing that they might have sold the property for the entire amount of the appropriation instead of overlooking $63,000 gold, brought every possible pressure to bear upon Mr. Ezra to induce him not to conclude the transfer which he said he planned to make. Their efforts, however, were unavailing and the property was transferred as Mr. Ezra had arranged with the Consulate-General at exactly the price he had paid for it, although it is understood and practically admitted by the syndicate that the Japanese were willing to go as high as Tls. 500,000 to secure this site as an addition to their consulate, and for the site of a great commercial museum which they had planned to build in Shanghai.

The ceremony of transferring the property was simple but dignified, and took place in the presence of officers of the various American societies, the Chamber of Commerce, American Association, University Club and the American Woman's Club, whose Presidents made complimentary addresses, thanking Mr. Ezra for his generosity towards the American community.

The buildings on this site are converted dwelling houses, not at all suitable for consulate or other offices, and it is expected that further appropriations will be made by Congress to permit the construction of a building that will justify the site which contains almost an acre of ground, has a river frontage of 275 feet, and occupies one of the most conspicuous locations in Shanghai.

## WIRELESS FROM JAPAN TO HAWAII

Regular wireless service between Honolulu and Japan will be instituted before the end of September, if present plans go through according to schedule. Nichi Toikata, chief engineer of the Department of Communications of the Japanese Government, has completed his third test, and a fourth test between Tokyo and Kahuku will be made within the next month.

"We fully expect that the service will be established within two months," said W. P. S. Hawk, manager of the Marconi Wireless Telegraph Company of America, late in June when asked concerning the present tests that are being made. "Experiments have thus far been so satisfactory that we can feel assured that service will be instituted within a short time.

"All tests made during the past few months have taken place at Tokyo, and consequently we have not been notified of the advancement of the same, but the fourth and final test will consist of an exchange of messages between Honolulu and Tokyo, and it is hoped that the final test will be completed within a month. When this service is established it will revolutionize the sending of messages to the Orient, as it will be the longest commercial wireless service in the world. The distance from Kahuku to Tokyo is more than 4,200 miles, which is 1,000 miles further than the distance between wireless stations on the Atlantic. At the present time we can communicate with Tokyo at night, and when the day test is completed it will mean just one more step in advance on the Pacific."

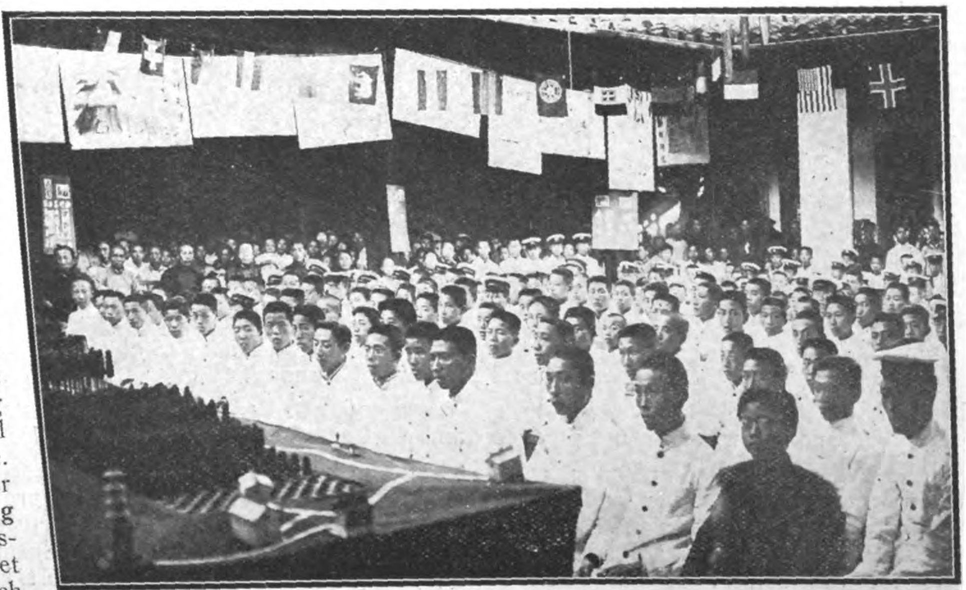
The Old and the New Celebration of Chin Min Festival
Burning Paper at Ancestors' Tomb — Planting Trees on Barren Hillsides

# CHINA AND FORESTRY

(By Dau-yang Lin, M.F., Yale)

China has always been held up before all civilized nations as a horrible example of forest neglect. What forestry has done in other countries stands in bold relief against the background of deforested China. Deforestation has been allowed to go on for centuries and perhaps it will continue for many years to come.

One of the forlorn results of forest devastation in China is the scarcity of wood. This is being acutely felt and will be more so as time goes on. The new development in railroad, mines, and modern industrial establishments, and the change from the old type one-story building to the building of modern three-story, or higher, buildings is daily increasing the demand for wood in China. It is estimated that the greater portion of the present consumption is still from home supply, but this source of supply is becoming more and more limited and difficult to secure. This is accounted for by the gradual receding of forests to inaccessible places, and to get timber out of such places is very difficult and consumes lots of time, especially when the transportation problem in China is such a difficult one. It is said that from the forests in Southern Hunan Province it takes from one to three years to float down the rafts of logs to the markets on the Yangtse River, and that it takes even more time from the forests in the more distant provinces to the main markets on the Yangtse.



Students of Nanking University Hearing Address on Forestry

Our largest sources of foreign supply to-day are Japan, United States, Russia, Siberia, Korea, Philippine Islands, Canada and the Indo-Malayan district. The so-called "Oregon pine" which is being shipped to China in such large quantities is called "China quality," and includes much that is not marketable in the United States. But even such quality commands a good price in China. Our railroad ties, timber for ship building, mining, and the construction of wharves and modern houses, etc., are all imported from foreign countries, chiefly from Japan, Australia and America.

In the March issue, 1916, of the Far Eastern Review we find the following statement regarding the lumber industry in Hokkaido, (which contains 25% of the vast forested area of Japan):

"In 1914, the last year for which statistics are available, Hokkaido exported pine and oak and a small amount of other Japanese wood to the value of Y6,519,222. Practically all of the export material was for furniture-making and for railway sleepers. Of the entire amount, China and Manchuria took approximately one third."

Looking over the lumber trade conditions of China for the years 1912, 1913, 1914, we note the lumber import for 1914 was more than double that for 1912. It is but natural for us to expect a still greater increase with the industrial and social changes that are going on so rapidly in China.

It is estimated, we are to-day consuming about 2,400,000,000 board feet of lumber (mostly home supply) per year, worth Mex. $64,000,000. For a population of 400,000,000, based on the industrial organization of such an economical wood using country as Germany, there would be needed, according to an American forester, at least 30 billion board feet of lumber

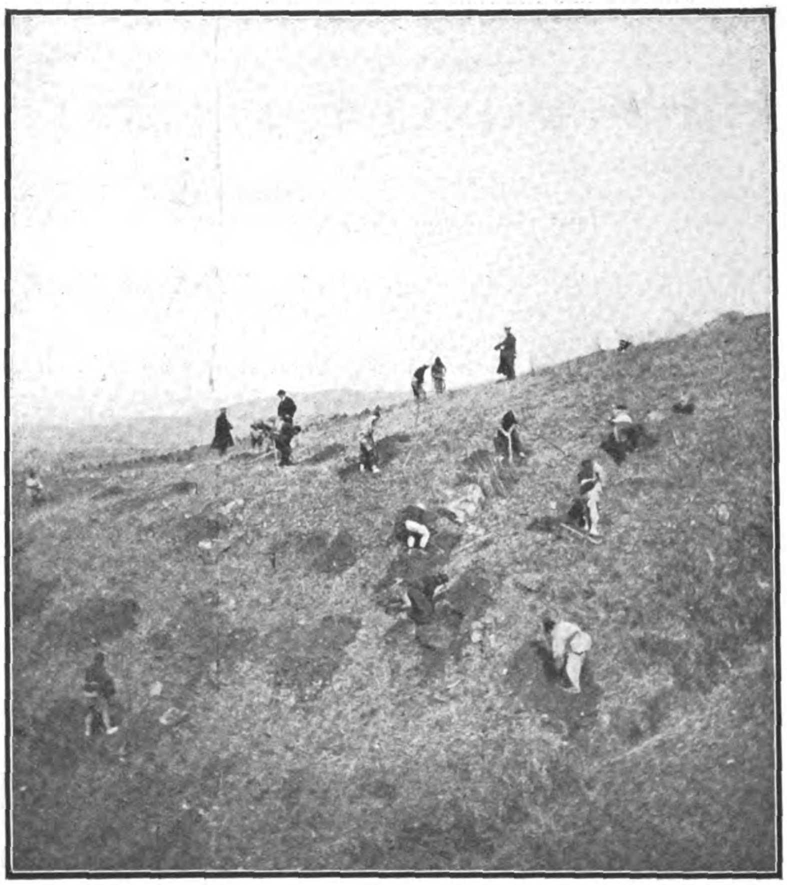
a year. Assuming that by extra economies and a development of substitutes, China, after developing along modern industrial lines, could get along with one half that amount, or 15 billion board feet, even this at an average value of $35 per 1,000 board feet would amount to $525,000,000. Where are we going to get this amount? The home supply is decreasing yearly.

We have about 6,000 miles of railroads and doubtless many more thousands of miles will be added within the next decade. These 6,000 miles of railroads lie on not less than 12,360,000 wooden ties and require 2,470,000 ties annually for renewals. Where have we been getting our ties? In North China, we use Japanese ties. In Central and South China, Australian ties are used. We cannot very well build a railroad line without paying large sums for imported ties.

Deforestation and the results thereof are familiar to all. Travellers have always called attention to it. Many naturalists have expressed thanks to monks and to the useful idea of Fungshui, for they have preserved many forests and trees that would have become extinct. In the interior we often see that because of the scarcity of fuel farmers have to go miles to cut grass and dig roots for fuel.

One cannot appreciate the effect of deforestation, unless he has been into the interior of China. The vast tracts of land in Kwangtung, Shansi, Shantung, and the Yangtse plains have been rendered waste,—not because the mountains and hills have ceased to produce wood, but because the valleys and slopes, left unprotected, have become unfit for agriculture. We have seen how destructive it would be for unrestrained water to rush down the slopes, making gullies, washing and flooding the fields below. The writer still remembers most vividly the time in Pukak (a village in Kwangtung) when after a rain of a fair size he had to walk through the flooded rice fields located at the foot of some denuded hills. Even the elevated paths between these fields were absolutely covered with flood water.

Traveling in the northern interior of Fukien we see many tea farms. Some of these farms have been abandoned because they have become so eroded and the soil has been so robbed of fertility, that tea bushes simply do not grow, or do not produce sufficiently to warrant the continuance of their cultivation.



Reforesting Purple Mountain, Nanking

Forests regulate the flow of streams. Even and steady stream flow is important for navigation. The rapid rise and fall of the flow of some of our streams has been a great hindrance to navigation and hence to the development of our internal commerce. The people of Yenping, Kienyang, and Shaowu, in Fukien, tell us that in rainy days the Min River will rise to 30 or more feet high, often to the level of their busy streets, and that when there is a deficiency of precipitation it becomes rock-strewn and exceedingly dangerous to navigation. The mountains and hills along the Min are well wooded up to Yenping, but after passing Yenping the river goes into a territory which is treeless and often bare, and this accounts for the great difference between high and low water.

Again, in Chekiang, why is it that on rainy days the Chientang rises abnormally to 10 or 15 feet and not infrequently floods the fields on both sides? Why, when it is not raining, does the river become almost unnavigable for small flat-bottom boats? The mountains along the Chientang are almost treeless; in many places they are bare of vegetation of any kind. Forests fires are seen everywhere. Occasionally a few clumps of pines may be discerned, but as one Civil Governor has described them, they are for the benefit of the dead whose habitation seems to need protection more than that of the living.

One botanist has said, after pointing out the serious effect of the loss of forests on the climatic conditions of China: "The effect on the general contour of the land from erosion, the depredations made by extension of river-beds, from silting and the exposure of crops to full climatic conditions, should engage the serious attention of those interested in the welfare of the agricultural population." The words of such a far-seeing foreign observer should be taken as a warning.

It is estimated that the Mississippi River carries to the sea every year enough finely divided silt—the choicest alluvium and the most fertile part of America,—to spread one foot thick over 250 square miles of land. If this is a fair estimate, we have some idea regarding what our three great rivers,—the Yellow, Yangtse, and Pearl,—are doing every year, when we come to think that watersheds for our three rivers are much less wooded than those for the Mississippi. The enormous loss of fertile soil has resulted not only in the abandonment of our farms, but also in the filling up of many otherwise navigable streams. Reforestation is no doubt one of the best and most permanent means of checking this loss.

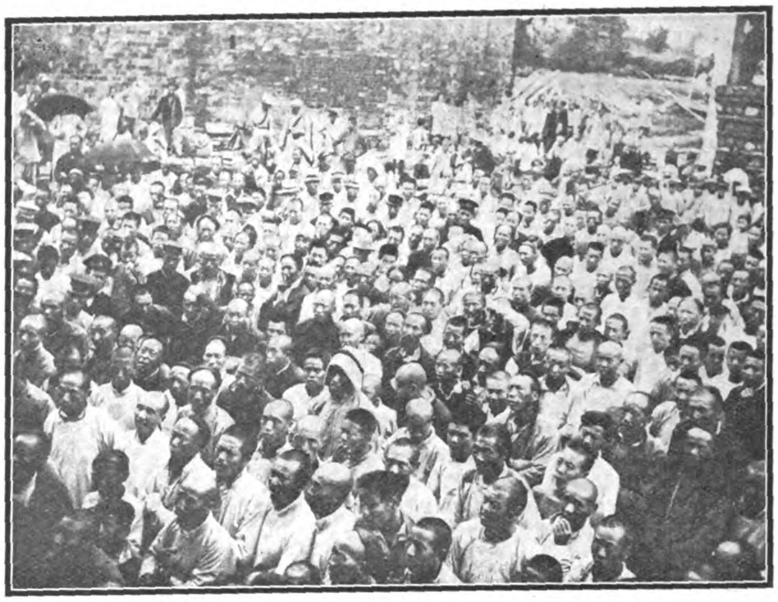
We have many floods every year, and the number is increasing yearly. It is needless to enumerate the floods we have had or to mention the misery and loss they have caused. We have had floods this year, we are going to have them next year, and will continue to have them for years to come. Now floods are most destructive. A flood in the Seine, in France, in 1910, is said to have cost that nation $400,000,000 Mexican. How many billions of dollars have we already lost from our different floods? Can they be prevented? Yes, but only at great expense. Forests alone will not prevent them. We must all admit however, that forests do lessen their severity and will stop some of them that are local in extent.

Ordinary countries with a forest area of 20% or less show bad climatic conditions, with prolonged droughts, and alternating floods and low water. Portugal, with a forest area of only 5% of the total land area, Spain with 13%, Italy with 14%, are good examples of this. Just how much forest area China has, nobody knows, but from what has been written about it and through correspondence and interviews, the writer is inclined to think that the percent of area forested in China is fearfully small, perhaps too small to be considered. If the forest area were insignificant, it is no wonder why China has been suffering from bad climatic conditions within her bounds.

## Where China Stands

Now comes the Problem. Forestry is important in human economy. Agriculture alone cannot fully utilize our greatest resource—the land. There must be forestry to go with it. Most nations have long recognized this fact and they have developed definite forestry policies. Thousands of men have been trained

Open Air Lectures on Forestry



No Hall Big Enough to Accommodate Crowds

to carry out such policies. These men are engaged not only in preserving the forest resources they already have, but also in reclaiming land that has been lost to production. The millions of dollars France has spent ought to open wide our eyes to the magnitude of a nation-wide reforestation program, since forest waste can be repaired only at great cost. German forestry, which has led in scientific thoroughness, shows what ought to be done with, and got from, lands which are not fit for agriculture.

According to latest information, we learn that our Government has started to organize a Forest Service to be under the Ministry of Agriculture and Commerce. An appropriation of Mex. $181,000 has been set aside for this year, and there are at present about 70 men working in the new Service.

Now let us examine and see where China stands when she is brought together with other countries for comparison.

**Table I. Personnel Forest Service**

| Countries. | Number of men employed in Forest Service. |
|---|---|
| Russia | 36,259 |
| India | 10,508 |
| Germany | 9,300 |
| United States | 3,953 |
| Japan | 2,872 |
| China | 70 |

The foregoing table shows the number of men employed in the Forest Service of different countries. It is plain that China with her enormous area must greatly increase her working force as time goes on. Germany with an area of 208,810 square miles, or about 1/20 the size of China, has more than 9,000 men working in her Forest Service. If China is to have as efficient a Service as Germany, how many men must she have at her disposal? This we shall watch with a good deal of interest.

Again let us compare the annual expenditures of the Forest Service for some of the countries.

**Table II. Expenditure of Forest Services**

| Countries. | Expenditure. |
|---|---|
| Germany | Mex. $46,368,000 |
| United States | 9,500,000 |
| India | 8,532,000 |
| France | 5,244,000 |
| Austria | 4,865,000 |
| China | 181,000 |

It is evident that China under the present conditions cannot undertake to do much in forestry matters. She is too poor, and very likely she will continue to be so for some time to come. But the lesson which has been clearly brought home by foreign forestry is the need of proper action *now*, so let us hope that the beginning China has made will soon grow to its proper size.

We have, according to a recent issue of the Far Eastern Review, about 357,827,000 acres of cultivated land in China proper, Manchuria and Sinkiang, not considering Mongolia and Thibet. If this is a fair estimate, we may conservatively say that there are about 1,207,791,560 acres of lands that are either not yet cultivated or not fit for agriculture.

Undoubtedly those lands which are not fit for agriculture form a much larger portion of the uncultivated and they as such should be devoted to forestry purposes. Now if China were to get a net revenue of say $1.00 per acre (ridiculously low) we would get some idea of the enormous revenue which should come from these millions of acres of lands yet to be developed.

What forestry has done in other countries shows, first of all, that forestry pays and that it pays best where the most money is expended in applying it. Both these points are very clearly brought out in the following table taken from U.S.A. Forest Service, Circular 140:

**Expenditure and Revenue of National Forests**

| Country | Total net revenue from Government forests. | Expenditure per acre. | Net revenue per acre. |
|---|---|---|---|
| Wurtemberg | G. $3,098,428 | G. $2.05 | G. $6.60 |
| Saxony | 2,299,000 | 3.00 | 5.30 |
| Baden | 829,162 | 3.58 | 4.42 |
| Hesse | 744,209 | 1.25 | 4.29 |
| Switzerland | 237,663 | 1.32 | 2.55 |
| Prussia | 17,054,144 | 1.58 | 2.50 |
| Bavaria | 5,128,348 | 1.99 | 2.22 |
| France | 4,737,250 | .95 | 1.75 |
| Italy | | | .33 |
| Hungary | | .34 | .32 |
| Austria | 5,313,000 | .56 | .21 |
| Roumania | 482,000 | | .18 |
| Spain | | | .17 |
| Sweden | 1,677,672 | .02 | .09 |
| Russia | 21,500,000 | .01 | .032 |

The above table shows that higher productiveness comes under larger expenditure. The more money China spends in forestry, profiting by experiences of foreign nations, the more revenue she will surely get on account of higher productiveness per acre.

**Some Practical Suggestions**

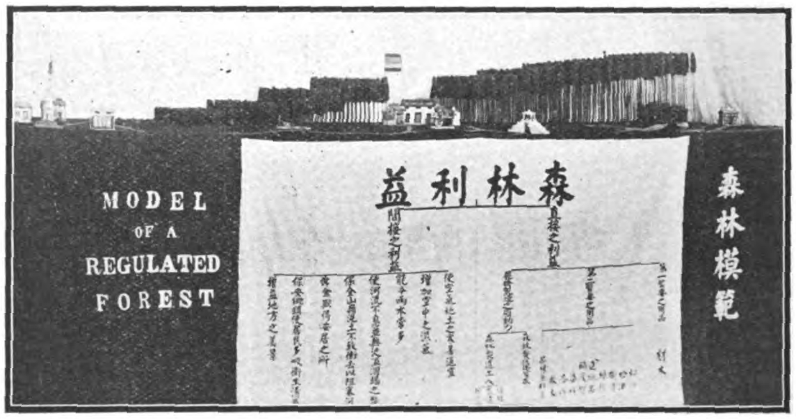
Without making any pretension to laying down a complete forestry policy, the carrying out of which would naturally be a

rather lengthy process, a few suggestions are here offered which I consider to be practical, and, inasmuch as they involve very little expenditure of money for their carrying out, they ought to claim the immediate attention of our Central and Provincial Governments.

No doubt the most important thing for China to do now is to educate her people. Every modern movement depends for its ultimate success upon a sound public opinion and the intelligent support of the people as a whole, and this is especially true of forestry. The people must be educated to understand and to appreciate the importance of forests and their many benefits to the people at large. Such education can be brought about in several ways.

Lecture work among the people is necessarily important. The lecture if made graphic by models, charts, and specimens will be most educative and effective in arousing public interest, and this has been found to be so through experience by the writer. Such demonstrated lectures should be given in every province, and the lecturers, besides preaching on the principles of conservation, should be prepared to answer questions dealing with local forestry problems and to suggest simple and practical solutions for the same. These lectures will be doing what we call "Extension Work," and it would not be too much if the Central Government required each province to make a small appropriation for their support. It may be mentioned that such lecturers ought to become connected with their respective provincial agricultural college.

Hand in hand with public lectures and illustrated talks, some systematic newspaper propaganda should be of great value. This should aim at the people of the educated classes who otherwise could not be reached. Perhaps such work can be done best by the Central Forest Service. It is most gratifying to learn that the University of Nanking has started such newspaper propaganda work already. The work as reported has been most fruitful of results, and inasmuch as it incurs very little expense, our government should have no hesitation in undertaking the same work. The University of Nanking has been receiving letters of encouragement from governors, tao-yuin, missionaries, and newspaper editors, of which the following is a specimen:




Automatic Model to Show Growth and Harvesting of Forests

"Your letter and articles have been received. I beg to thank you for the same. In our region agriculture and forestry are rather undeveloped. If you will give us your articles from time to time, not only will the value of our newspaper be increased, but the agricultural and forestry conditions of our district will be improved."

The tone of such a letter cannot but impress upon us the great opportunity of publicity through the press, and doubtless it should be fully utilized in the dissemination of forestry ideas among the people.

Then the Forestry Association is an institution that cannot be dispensed with in the matter of educating the public. It should be composed of men of all professions that are interested in forestry and conservation matters. In the United States, Canada, and other countries, such Associations, representing a combined and organized effort, have played and are still playing an important role in creating and also in keeping public interest in forestry alive. Now if such an institution is established in China, it would surely exert a guiding influence not only to our people, but also to our government in her legislation on forestry matters.

### Promoting Useful Existing Customs

There are some customs in China the observance of which will go far in helping the development of forestry, and such customs should be properly preserved, and any of these customs that are local in extent should be made known to the people at large.

In the vicinity of Yenping, Fukien, there is a custom among the people which no doubt has been partly responsible for the wooded condition of that part of the country. The custom is that of starting a forest plantation at the birth of a male child in the family. The plantation so started is generally cut when it is twenty years old, the time when the boy is old enough to marry. The money obtained from selling the trees is used to defray the wedding expenses of the boy. Such a planting custom is unique, and it will do well for the people of other parts of China to know about it and to observe it if possible.

Again traveling in the interior of China, one will always find remnants here and there of the original forests, some of which cover good sized tracts. These remnants of forest have been preserved on account of the vicinity of monasteries, the sacred character of the localities, and the useful ideas of fungshui, but as has been brought out "the sentimental appeals of the priests and poetical associations of places and scenery and even the powerful considerations of fungshui appear to be on the wane, and to be giving place to more utilitarian views." If this is true, then it is time that something be done to revive and to preserve these old but useful ideas, and this can be done only through some organized effort. Perhaps the central government can do it readily by co-operating with local clubs and guilds.

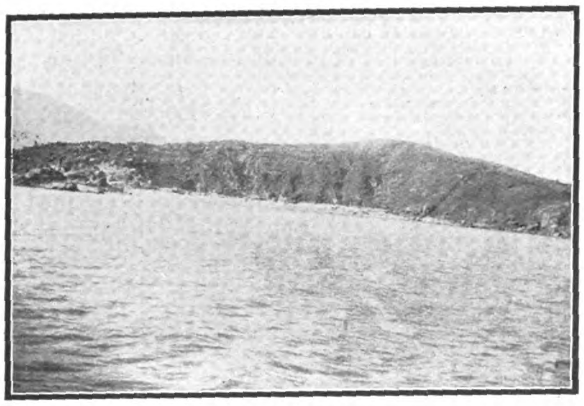
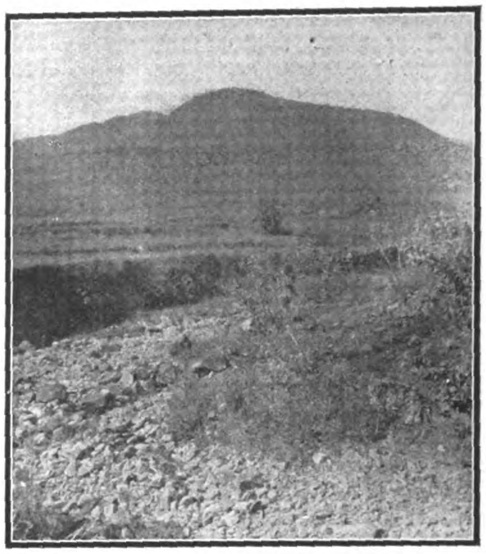
The practice of planting a few trees around graves is common in China. Such a practice is very good indeed, and should be preserved. Our system of burying (which may have to be changed) is different from that in the West. The scattered groves of trees we see on hills or plains invariably mark the presence of graves. While the graves are well taken care of, such trees often grow to enormous size, and they ought to make excellent seed trees for surrounding country if the seedlings are properly handled and protected—a point worth considering from the forestry standpoint.

Perhaps the greatest thing our government has done from the forester's point of view is that of arborizing (if I may use such a word) the Chin Min Festival. Chin Min hitherto has been observed as an occasion for cleaning ancestors' graves and this cleaning consists of chopping down and burning little shrubs and trees that might have grown around the graves. Traveling in the interior of China, we find that most forest fires in the spring have been caused by such cleaning. Now by the presidential mandate of May 1st, 1915, the Chin Min Festival has been made the Arbor Day for China—a day for the whole nation to plant a few trees to show the importance of the forest tree in the life of a nation. That such a mandate has been issued is significant and if properly carried out every year should go very far towards promoting forestry among the masses, can not be doubted.

In the *China Press* of April 7th, this year, we find the following account of the observance of Chin-Min Festival in Hangchow:

"Chin-Min was celebrated here as usual but a new and significant feature was added in the observation of arbor day. It was the first observance of this day in the Province and the beginning of a conservation movement which will have great bearing on the industrial life of the Province.

"During the past few weeks more than twenty thousand trees have been set out on the hills around West Lake and within the present year three million seedlings and trees are to be set out. . . Special Arbor Day exercises were held this morning to take the public into the work. A number of schools sent representatives, the civil Governor sent a representative in the person of the Commissioner of the water police, the Taoyuin and the local Magistrate were both present. They and a number of other prominent visitors

VIEWS OF FUKIEN PROVINCE, SHOWING HILLS ERODED AND BARREN DUE TO LACK OF FORESTS AND RAPID RUN-OFF OF RAIN, LEAVING STREAM-BEDS DRY WHEN WATER IS MOST NEEDED FOR IRRIGATION

took part in setting out a number of trees. . . The principal speaker on the program spoke on the importance of the exercises of the day as an example and inspiration for the Province, but he placed the strongest emphasis on the preservation of the trees which were being set out."

Again in Nanking, Anking and other places thousands of students, officials and gentry turned out to celebrate the first Arbor Day of China. Right here our attention might be drawn to the possibility of arborizing in one way or another some other existing festivals or customs. It is certainly far from being too much to have the whole nation think, say two or three times a year, about the importance of forest trees as guardians and custodians of the necessaries of life and the happiness of the nation.

In connection with arbor days, I might suggest that each hsien or district devote a good-sized tract of land specially for their celebration. It should be non-agricultural, central and easily accessible, and on it roads should be laid out to facilitate planting. Planted areas on the tract will increase in size naturally with each celebration of public planting, until the entire tract is planted over. When the different plantations grow up, they ought to serve as a sort of demonstration forest or as a park for the people of that hsien. The local magistrate or a committee of village elders will be held responsible for the protection and management of such a planted forest. It is estimated that we have 1,783 hsien in China and to have that many hsien forests started all over China will mean a great deal to the development of forestry in this country. Such forests will be like 'communal' forests and, if properly cared for, ought to serve to demonstrate to people the practicability and advisability of reforestation, not to say they will serve as wholesome playgrounds for the hsien people.

NURSERY OF FOREST TREES IN CHEKIANG PROVINCE

## Some Government Actions

It seems that one thing the government can do and ought to do is to draw up an agreement concerning reforestation whenever mining or railroad concessions are granted. Mining concessions should have forestry clauses which require the companies to afforest and to re-afforest areas that have been mined. In this way the Government need not spend a cent to have many hills and mountains planted.

Again in the case of railroad construction some rules might be had to get the different railroad officials to plant trees on each side all along the lines to the width of say 500 feet more or less whenever possible. Such plantings besides beautifying the country ought to make good investments for the railroad companies in 15 years or so, in view of the constant demand for ties for construction and renewals. It is evident, that if it had some definite forestry policy in her dealing with concessionnaires they could be depended upon to do much reforestation work at their own expense.

Another thing the government might do, is to devote a little space to forestry in text books used in primary or high schools. The child should be given an opportunity to understand forestry as one of the important economic and public questions of the world. He should be told, for instance in his study of geography, how forests influence streamflow, how the removal of forests has caused our floods to become worse and worse, and in his nature study work he should be taken to see the work of little torrents, how exposed soil is washed and gullied and how various kinds of vegetation modify these effects. Such knowledge as the child gets will leave lasting impressions and will qualify him later on to take an active and intelligent interest in shaping the nation's forestry policy.

Perhaps the most urgent thing our Government should do now is to provide reasonably adequate protection to the tens of thousands of people who would be only too glad to take up forestry either as their vocation or avocation. Such people are not ignorant of the effects of forest planting and of forest denudation. They have not allowed an inch of their agricultural soil to go to waste, and surely they do not care to see thousands of acres of land that ought to be devoted to forestry, remaining idle, unproductive and a detriment to society.

Traveling and lecturing in the interior of Fukien, Chekiang, Anhwei, and other places, I have met with hundreds of people who would say: "We all know forestry and the importance of forestry. We love to reforest our hills and make them as productive as our farms, but circumstances do not permit us.

We have not proper forest protection. Some of our neighbors may accidently, carelessly or otherwise, start a fire that burns over our planted acres, thus killing our attempts at reforestation, again others may steal or chop down trees before they are matured." I have heard such complaints time and again and certainly there should be immediate action taken to remedy such a state of affairs. After all it is proper protection to people that is most important. Any amount of lecturing and educating may be done, but unless the people are given proper protection to their undertaking forestry or any other occupation, they can not be expected to do very much.

How can we protect private plantings and plantings in general, against fire and theft, the two greatest enemies to the practice of forestry? Without going into detailed discussion of the subject of forest protection, I would like to make a suggestion which I consider practical and the carrying out of which entails little expense. Every hsien should have what we call a fire warden or forest police and if the hsien is large and mountainous, may employ two wardens. The warden will be in the employ of the hsien government, acting under the advice of both local magistrate and a committee of local men. In view of the constant transfer of local magistrates from one hsien to another, it would be better to leave the selection of the warden in the hands of the committee, who naturally can do the selecting more efficiently on account of their knowledge of local conditions. The warden should be in uniform and should always be traveling from place to place within the hsien. His duties may be briefly outlined as follows:

1.—To make visits and to hold conferences with men in different places that are interested in forest protection.

2.—To post notices warning people concerning fires, theft and punishment for such misdemeanor.

3.—To report to the local magistrate persons who have violated the forest laws (our central government in December of 1914 promulgated a set of well considered forest laws).

Evidently it would be quite difficult for the warden alone to carry out satisfactorily the different lines of work as outlined above. But even single-handed, he could do much by co-operating closely with the people in the different parts of the hsien. Such a suggested plan for protection it must be remembered is only meant to tide over the present situation. For complete prevention and control of forest fires there must be a much greater force, plus a system of fire lines, lookout stations, etc., but such we know can not be had in China for many years to come.

## HAN YEH P'ING WORKS PROGRESS

According to Dr. S. T. K. Woo, superintendent of the Hanyang Iron and Steel Works, the following is a resume of the work done during 1915 by the Han Yeh P'ing Iron & Coal Company, Limited:

The output of the iron and steel works was as follows: Matin iron, 34,906 tons; foundry iron, 101,635 tons; rail steel, 30,776 tons; mild steel, 16,624 tons. The output of the Tayeh iron mines was 545,819 tons of iron ore, and that of the Pingsiang colliery was 365,000 tons of coal and 273,000 tons of coke.

"During the year the following additions to the plant were completed or in hand: one blast furnace, capacity 250 tons per diem; eight Babcock & Wilcox boilers; one steel chimney; one Turbo blower; plant for unloading ore and stone and loading pig and steel products mechanically on the wharves; machinery for removing pig iron from the casting bed and pig-breaking; open-hearth furnace of 70 tons; and, in the dolomite mill, four calcining cupolas and a grinder.

"An improved water system to utilise water from the river, for which the necessary settling beds and water channels have been also completed. During the year there was a rise in value of 9 per cent. in pig iron and over 100 per cent. in steel structural materials.

"The present staff comprises 17 Chinese engineers and 10 foreign engineers and foremen, one foreign chemist, 252 general staff, 2,000 skilled workmen, and 2,500 labourers."

"Shipments of steel rails from the Hanyang Iron and Steel Works decreased 220,000 piculs, but pig iron shipments increased 214,000 piculs, the total export amounting to nearly 1½ million piculs. Iron ore exports from Tayeh to Japan exceeded the 5-million-picul mark and show an increase over the previous year's figures of 100,000 piculs."

## HANKOW'S COTTON AND SILK MILLS

The Wuchang Cotton Mills at Hankow have had a good year, and a profit of 750,000 taels is reported to have been made. Owing to the strained relations between China and Japan in the spring of 1915, there grew up a big demand for local cotton yarn, and more orders were received than could be executed. The output of yarn is said to have been 60,000 bales of 300 catties each. Four qualities of shirtings were manufactured, besides canvas and cotton duck. 1,500 pieces is the daily output.

A part of the mills is now under repair, and when completed it is estimated the daily output of piece goods will amount to 2,000 pieces.

The silk factory, run in conjunction with the cotton mills, has also had a prosperous year, a brisk demand having arisen for silk products from abroad. The cocoons used come principally from Mienyangchow and Hanchwanhsien, in Hupeh province. The Wuchang Mills have, since the beginning of 1916, added a hemp factory to the other undertakings. This will manufacture, from a mixture of hemp, silk, and cotton, a fancy cloth or gauze, which is so much worn by the Chinese. It is expected that there will be a big demand for this cloth from all the provinces.

The total number of employes of the cotton mills for the three concerns is over 5,000 males and some 2,900 females. The working hours are from 6 A. M. till 7 P. M., with one hour's rest at noon. A second cotton mill, with a capital of 4,000,000 taels, is shortly to be established on the Wuchang shore, opposite the British Concession.

## MANUFACTURES AND RUBBER OF INDO-CHINA

Practically all manufacturing industries of Indo-China have been seriously crippled by the war. The cotton spinning and weaving industry of Tonkin was less affected, although much of the cotton yarn which appears in the list of exports consisted of imported yarn reexported into Yunnan. The silk industry of Anam was seriously crippled. The large mill at Quinhon ceased operations because of a lack of market for its goods. Native raw silk, which was exported to France and other parts of Europe, diminished from $358,591 in 1913 to $195,000 in 1914. However, the hand looms scattered through the native villages of Anam and Tonkin were constantly employed, and the exportation of manufactured and embroidered silk increased from $96,195 to $135,000.

The rubber industry of Cochin China is gradually developing, and in a few years the output of the caoutchouc plantations will figure among the leading products of the colony. The decrease in exports was due to a lack of market. As late as January, 1915, just before the export prohibition of this article was extended to Indo-China, the leading rubber exporters were seeking a market for their product in the United States.

## CONDENSATION OUTFIT FOR LOW PRESSURE SYSTEMS

The illustration shows a condensation outfit recently placed on the market by The Goulds Manufacturing Company, Seneca Falls, N. Y., U. S. A., for pumping condensation returns back into the boiler on low pressure heating systems. This outfit consists of a Goulds

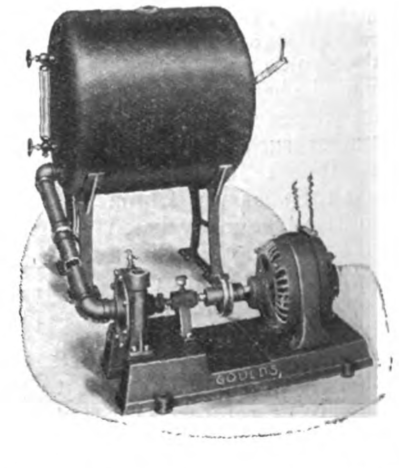
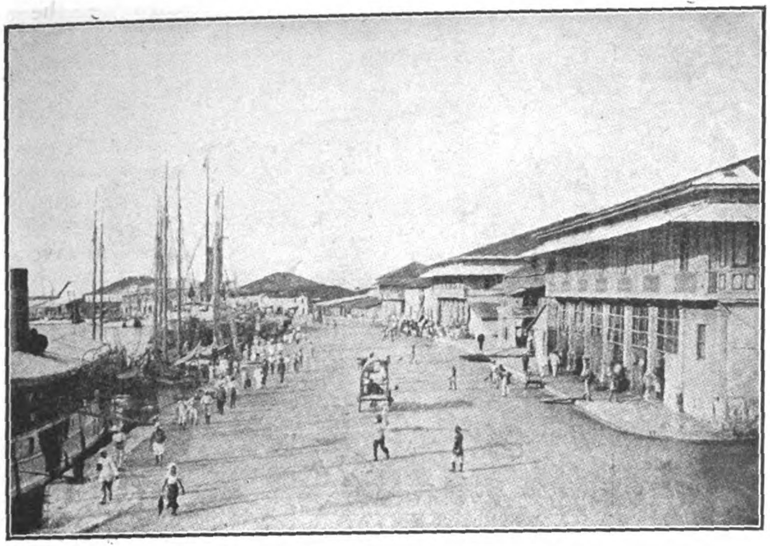
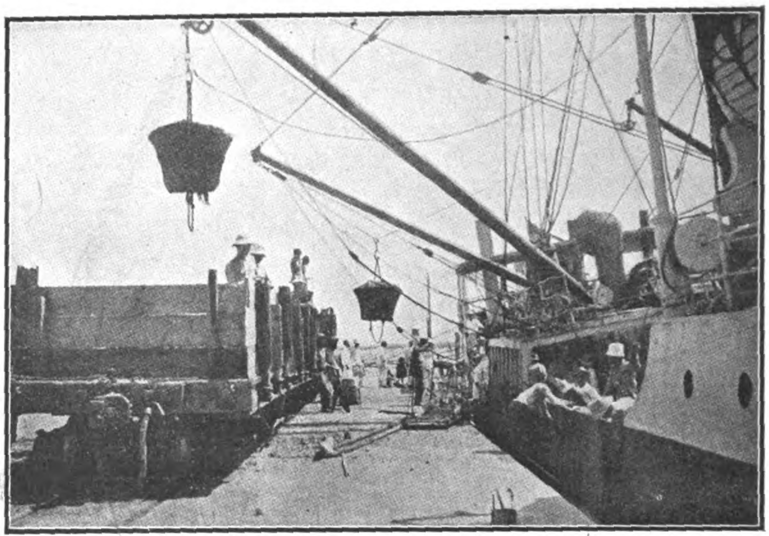



Fig. 3004 Single Stage, Centrifugal Pump, direct connected to an electric motor with the motor and pump mounted on a common bedplate. The tank is mounted on separate brackets as shown so that it may be located where most convenient when the installation is made. This outfit can be furnished with pump for capacities up to 70 gallons per minute and with tanks up to 60 gallons capacity.



Water Front, Iloilo



Discharging Coal from Steamer into Railway Cars at Cebu

# THE PHILIPPINE RAILWAY COMPANY REPORT FOR 1915

The following is a report of the operation of the Philippine Railway Company's lines in the Philippine Islands, for the year ended December 31st, 1915, as submitted to the Board of Directors by Mr. R. R. Hancock, vice-president.

Freight revenue shows a slight increase as compared with the previous year; the increase was earned on Panay. Passenger revenue shows a decrease of 0.8 per cent. as compared with the previous year, and is the result of a slight falling off in the number of second class passengers carried. Revenue from Commercial Shop Work was 44% greater than for 1914. The following statement shows amount of Commercial Shop Work performed during the year:

| | Cebu | Panay | Total |
|---|---|---|---|
| Cost of Completed Shop Work ... | $28,046.60 | $10,813.57 | $38,860.17 |
| Profit ... ... | $ 6,494.35 | $ 2,525.42 | $ 9,019.77 |
| Per cent. of Profit for year ... ... | | | 23% |

The cost of Maintenance of Way and Structures was $7,684.00 more than during the previous year. The increase was mainly due to renewal of ties, the heaviest renewals being on Cebu. It is expected that this item of maintenance expense will increase during the year 1916, as the ties originally installed are rapidly reaching the life limit.

A statement is attached showing in detail the expenditures for track labor and material during the year.

No increase was made in motive power or car equipment during the year. One second class car on Panay was converted into a combination second class and baggage car and two twenty-tonne flats were converted into box cars.

The increase of $2,663.14 in cost of Maintenance of Equipment as compared with last year was mainly due to replacing the original pine wood work of box cars and third class cars.

Nine locomotives received thorough overhauling during the year.

Twenty-one third class passenger cars received alterations as to seating arrangements, enlargement of windows, and installation of drinking water tanks, and in nine of these cars toilets were installed, in compliance with an order from the Board of Public Utility Commissioners.

Four third class passenger cars and fifteen freight cars were rebuilt as to wood work, or received heavy repairs during the year.

Details of the operation of this department, and a list of the equipment, will be found among the attached statements.

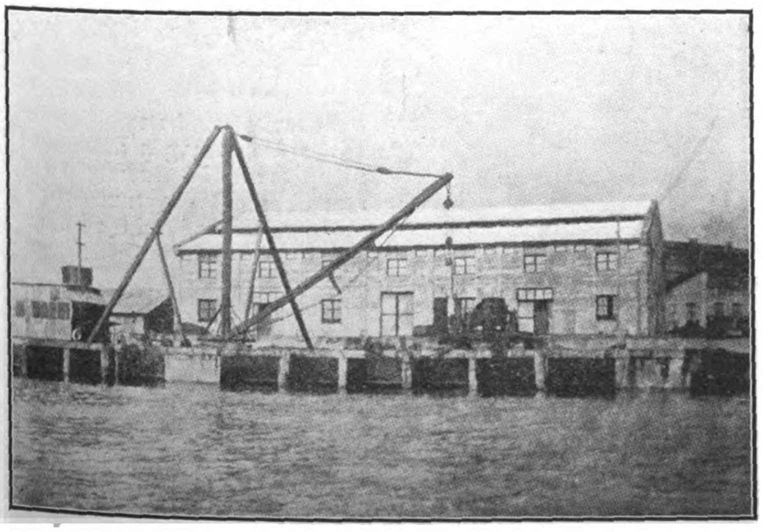
### Transportation Expenses

The greater part of increase in transportation expense represents an advance in the cost of fuel, due to the imposition of an Internal Revenue Tax on coal of $0.50 per metric tonne. This tax was paid under protest, we contending that its assessment is contrary to certain provisions of our concession. We are awaiting the decision of the Supreme Court in the matter.

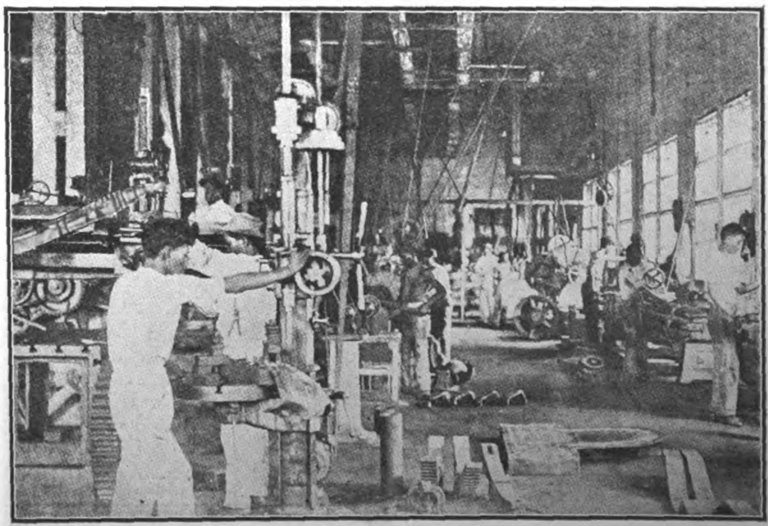
The consumption of coal does not compare favorably with the previous year, due principally to a shipment of Chinese coal received which did not prove very satisfactory. A reduction in price was secured in our 1916 contract which it is expected will make up the loss due to the inferior coal.

As compared with 1914, the cost and consumption of fuel used by locomotives was as follows:

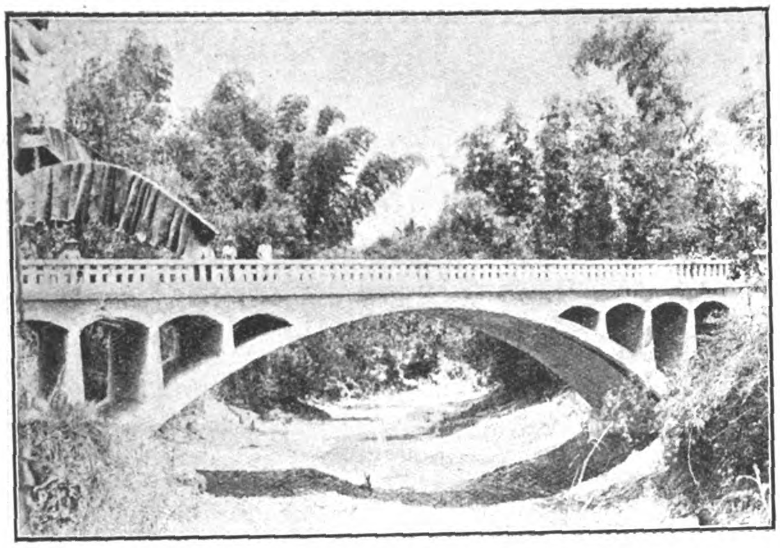
| | 1915 | 1914 |
|---|---|---|
| Total value of coal on tank ... ... ... ... | $40,771.91 | $36,427.13 |
| Total locomotive coal consumption (kgms.) | 7,589,971 | 6,389,021 |
| Coal consumption per locomotive kilometer (kgms.) ... ... ... | 15.10 | 13.76 |
| Coal consumption per 100 tonne kilometers (kgms.) ... ... ... | 10.15 | 9.80 |



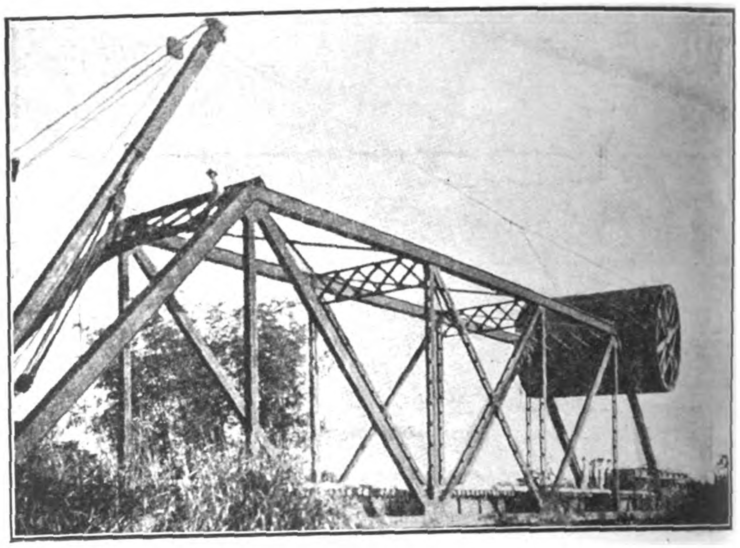
Storehouse, showing 30-ton Railway Dock Derrick, at Lapus



Machine Shop, Panay Division



New Concrete Arch over Abangay River, Panay



Passing a Water Tank over Bridge where Clearance would not allow to go through on Car

### Development of Country

The traffic organization continues, as heretofore, to assist in every way possible in the development of the country through which the lines pass.

Statements of traffic statistics are attached. It will be noted that 1.2 per cent. more passengers were carried than during the previous year, but with a loss in revenue of 1 per cent. This loss is attributable to the greater number of passengers travelling third class, in preference to second class.

There were 16.6 per cent. less tonnes of freight carried than during the previous year, with an increase in revenue of 2.9 per cent.; the falling off in tonnage was in sand and gravel traffic which are low class freights.

On Panay agricultural conditions continue to improve. There has been an increase in the acreage planted in sugar cane, but the results will not be noticeable for another fifteen months or so..

Conditions on Cebu during the year have not improved over 1914, the European war continuing to have a depressing effect on the hemp and copra trade, there having been no market for these products until the last two or three months of the year.

On December 28, 1915, the Government automobile line operating out of Pototan, on the Panay Division, was discontinued, due to the failure of the Philippine Assembly to make appropriation for its continuance. This action created a storm of protest from the planters in the regions served by the automobile line, on account of the service

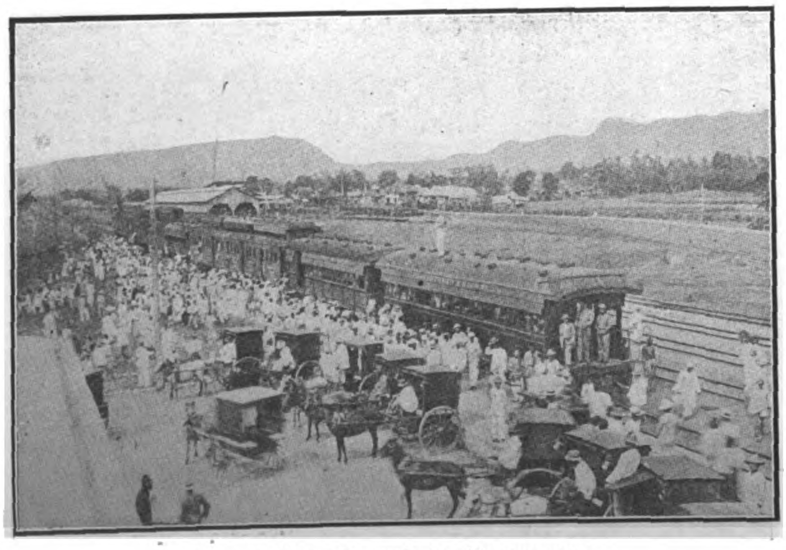
### Balance Sheet, December 31, 1915

**Assets**

| | | |
|---|---|---|
| Property Investment: | | |
| Road ... ... ... | $6,052,529.94 | |
| Equipment ... | 510,996.52 | |
| General Expenditures ... ... | 2,586,266.98 | $ 9,149,793.44 |
| Contractual Rights (Cost) ... | | 4,999,000.00 |
| Working Assets: | | |
| Cash ... ... ... | $ 136,609.31 | |
| Securities Issued, held in Treasury ... | 6,400.00 | |
| Due from Agents and Conductors ... ... ... | 428.48 | |
| Miscellaneous Accounts Receivable... ... | 26,552.80 | |
| Materials and Supplies ... | 99,150.10 | 269,140.69 |
| Deferred Debit Items: | | |
| Insurance Paid in Advance ... | $ 230.61 | |
| Other Deferred Debit Items... | 2,326.59 | 2,557.20 |
| Corporate Deficit: | | |
| Profit and Loss —Balance ... | $1,287,805.03 | |
| Less Total Appropriated Surplus ... | 110,875.83 | 1,176,929.20 |
| | | $15,597,420.53 |

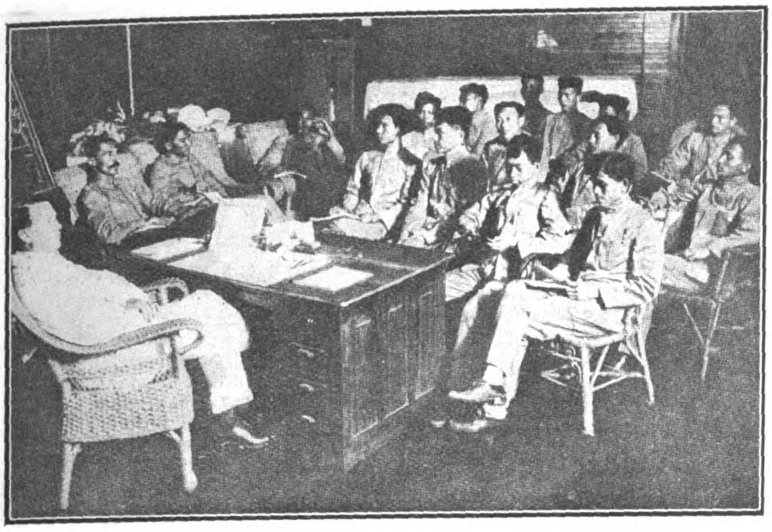
**Liabilities**

| | | |
|---|---|---|
| Stock: | | |
| Capital Stock—Common ... | $5,000,000.00 | |
| Funded Debt; | | |
| First Mortgage Four per cent. Thirty-year Sinking Fund Gold Bonds, Due 1937—Interest Payable July 1-January 1 ... ... ... ... ... | | 8,551,000.00 |
| Working Liabilities: | | |
| Audited Vouchers and Wages Unpaid ... ... | $ 20,319.95 | |
| Other Working Liabilities ... | 1,161.51 | 21,481.46 |
| Deferred Credit items: | | |
| Advances by Philippine Government to meet bond interest ... ... ... ... ... | | 2,024,939.07 |
| Appropriated Surplus: | | |
| Additions to Property Through Income ... ... | $ 35,875.83 | |
| Reserve for Extraordinary Emergencies... | 75,000.00 | |
| | $110,875.83 | |
| | | $15,597,420.53 |

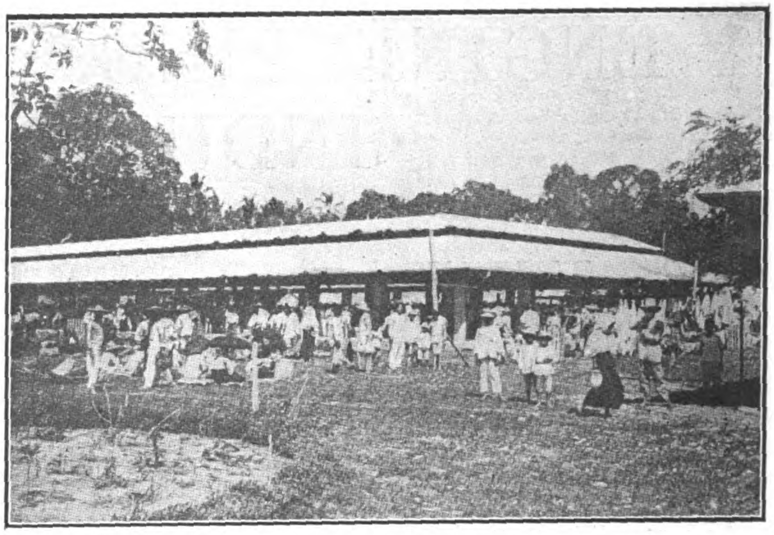


Special Train with 1,200 Passengers

Corn Demonstration, Island of Cebu



Night School for Agents



Type of Market for Small Town

being stopped without any warning whatsoever being given. The Government claims that the automobile line was operated at a loss. Private parties are now negotiating with the Government to lease the equipment of the automobile line, so as to resume the service. As the railway received considerable tobacco and sugar from the automobile line, we are assisting in every way possible to have the service resumed by private parties.

On Cebu the Visayan Refining Company has just completed the erection of a large mill for the extraction of oil from copra (the dried meat of the cocoanut). The mill is of the most modern type with a capacity of about 120 tons of copra per day, and represents an investment of nearly $1,000,000. It is expected when the mill starts operations that it will give an impetus to copra traffic.

### Right of Way

Torrens titles have been obtained for the right of way on Panay through the Province of Capiz and a decree of the Court obtained for Torrens titles through the Province of Iloilo.

On Cebu. Torrens titles have been obtained for the right of way through two Friar Estates, 12.5 kilometers. The cases covering the section of right of way in the City of Cebu and suburbs are now being heard. Application was made two years ago for title to the remainder of the right of way on Cebu, and it seems probable that all titles will be secured during 1916.

The issuing of registered titles throughout the Islands proceeds very slowly, and, while every effort has been made to have our applications acted upon, we were unable to secure the titles during this year.

### REVENUE AND EXPENSES

| REVENUE | 1915 | 1914 | %Increase or Decrease* |
|---|---|---|---|
| Passenger | $219,015.42 | $220,711.84 | .77* |
| Freight | 116,177.89 | 112,899.88 | 2.90 |
| Excess Baggage | 734.40 | 959.28 | 23.44* |
| Mail | 5,439.24 | 5,439.24 | —— |
| Express | 5,263.56 | 5,578.94 | 5.65* |
| Switching | 3,534.25 | 4,848.87 | 27.11* |
| Non-Transportation | 12,242.72 | 10,780.95 | 13.56 |
| Total Revenue | $362,407.48 | $361,219.00 | .33 |
| EXPENSES | | | |
| Maintenance of Way and Structure | $ 58,834.65 | $ 51,150.57 | 15.02 |
| Maintenance of Equipment | 48,603.27 | 45,940.13 | 5.79 |
| Traffic | 4,271.89 | 8,301.84 | 48.54* |
| Transportation | 100,102.68 | 97,950.52 | 2.20 |
| General | 31,223.00 | 29,451.93 | 6.01 |
| Total Expenses | $243,035.49 | $232,794.99 | 4.40 |
| Net Operating Revenue | $119,371.99 | $128,424.01 | 7.05* |
| Operating Ratio | 67.06% | 64.44% | |
| Kms. Operated † | 212 | 212 | |

* Decrease. † Panay Division—116.40 Kms. Cebu Division — 96.60 Kms.

### TRAFFIC STATISTICS

| PASSENGER | 1915 | 1914 | %Increase or Decrease* |
|---|---|---|---|
| Total Number Carried | 1,203,325 | 1,188,461 | 1.25 |
| First Class | 2,339 | 3,167 | 26.14* |
| Second Class | 167,936 | 186,717 | 10.05* |
| Third Class | 1,033,050 | 998,577 | 3.45 |
| Number Carried One Kilometer | 27,600,941 | 27,185,933 | 1.52 |
| Average Distance Carried per Km. | 22.9 | 22.9 | —— |
| Average Receipt per Passenger | $.1820 | $.1857 | 1.99* |
| Average Receipt per Passenger per Km. | $.0080 | $.0081 | 1.23* |
| FREIGHT | | | |
| Total Number Tonnes Carried | 82,328 | 98,708 | 16.59* |
| Number Tonnes Carried One Km. | 3,499,663 | 3,535,821 | 1.02* |
| Average Distance Carried per Km. | 42.5 | 35.8 | 18.71 |
| Average Receipt per Tonne | $1.4111 | $1.1438 | 23.37 |
| Average Receipt per Tonne per Km. | $0.0332 | $0.0319 | 4.07 |

* Decrease.

### Income Account for 1915.

Rail Operations—Revenues:

| | | |
|---|---|---|
| Freight Revenue | $116,177.89 | |
| Passenger Revenue | 219,015.42 | |
| Excess Baggage Revenue | 734.40 | |
| Mail Revenue | 5,439.24 | |
| Express Revenue | 5,263.56 | |
| Switching Revenue | 3,534.25 | |
| Total Revenue from Transportation | | $350,164.76 |
| Storage—Freight | $ 88.84 | |
| Rent of Buildings and Other Property | 3,584.15 | |
| Miscellaneous | 8,569.73 | |
| Total Revenue from Operation Other than Transportation | | 12,242.72 |
| Total Operating Revenue | | $362,407.48 |

Rail Operations—Expenses:

| | | |
|---|---|---|
| Maintenance of Way and Structures | $58,834.65 | |
| Maintenance of Equipment | 48,603.27 | |
| Traffic Expenses | 4,271.89 | |
| Transportation Expenses | 100,102.68 | |
| General Expenses | 31,223.00 | |
| Total Operating Expenses | | 243,035.49 |
| Net Revenue—Rail Operations | | $119,371.99 |
| Auxiliary Operations—Revenues: | | |
| Commercial Shop Work | $47,879.95 | |
| Auxiliary Operations—Expenses: | | |
| Commercial Shop Work | 38,860.18 | |
| Net Revenue—Auxiliary Operations | | 9,019.77 |
| Net Operating Revenue. | | $128,391.76 |
| Taxes: | | 2,995.08 |
| Operating Income | | $125,396.68 |

Other Income:

| | | |
|---|---|---|
| Income from unfunded Securities and Accounts | $ 2,698.53 | |
| Miscellaneous Income | 557.40 | |
| Total Other Income | | 3,255.93 |
| Gross Income | | $128,652.61 |
| Deductions from Gross Income: | | |
| Interest on Funded Debt | $342,040.00 | |
| Miscellaneous | 1,265.06 | |
| Total Deductions | | 343,305.06 |
| Net Loss | | $214,652.45 |
| Appropriation for additions and Betterments: | | |
| Expended during the year | | 468.28 |
| Income Balance Transferred to Debit of Profit and Loss | | $215,120.73 |

# ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

## RAILWAYS

**Japan's New Manchurian Line.**—It is announced in the Chichangjihpao of Kirin that the Chinese Eastern Railway has been sold by Russia to Japan from Changchun to Laoshaokou for six million yen. Japanese advices deny that the price has been fixed and state that only the principle of calculating the price of 71 miles of the railway between Changchun and Second Sungari has been decided upon. From non-official sources it was learned that the principle of calculation adopted by the two Governments is first, to estimate the cost of construction; second, to deduct from the cost for wear and tear of the railway rolling stock and other property by taking the earnings of the company during those years of the Russian management as the basis; and third to add a sum by estimating what the railway would be likely to earn in a given number of years, taking the past annual earnings as a basis. It was said that on this basis the price of the railway to be sold to Japan would foot up to a little over 10,000,000 yen, the cost of construction having been roughly estimated at between 6,000,000 and 7,000,000 yen.

Laoshaokou is the station on the south bank of the Sungari at the end of the fine steel bridge across the river. It is 58 English miles from Changchun. The South Manchurian Railway Company has thus acquired a very valuable extension, as it will now connect with the Sungari river, which is navigable for steamer as far up as Kirin. The work of changing the gauge to conform with the Japanese lines is to proceed at once.

Foreign observers wonder how this transfer will affect the negotiations regarding the Kirin-Changchun line that are now in progress in Peking. It is thought locally that probably further pressure will be brought to bear on the Chinese Government to secure this valuable line for the South Manchuria Railway Company, and that Japanese steamers will be put on to ply between Laoshaokou and Kirin. If this is done, the extension of the line to connect with the North Korean railway at Chientao will soon be begun. This line has already been surveyed, and although the engineering difficulties are great, the country being very mountainous, it could be built in the course of two or three years. It would give access to vast forests and a rich mineral country lying to the east of Kirin.

**Pukow Port Questions.**—The effect on Nanking trade of the opening of Pukow is discussed by Mr. E. C. C. Wilton, the British Consul at Nanking, in a recent report. Pukow, on the north bank of the Yangtze opposite Nanking, was included in the harbour limits of the latter city on July 1. This measure must eventually have far-reaching effects on the trade of Nanking, and is already beginning to make itself felt. Results, however, are by no means commensurate with anticipations, owing to the action of the railway transport companies. The controlling interest in these companies is held by the railway directors and other influential men, and they practically monopolize the carriage of goods on the railways, and make every effort to discourage merchants from direct dealings with the steamer companies. They obtain from the railway a rebate of about 30 per cent. on the published railway tariff, and thus are enabled to offer small rebates to exporters, while at the same time themselves making large profits.

In order to compete with the river steamers, the goods tariff on the Shanghai-Nanking railway is very low—considerably lower than that of the shipping companies. It is not worth the while of the latter to reduce their rates, as they fill their steamers at the Ports higher up the river While Pukow remained unopened, it was cheaper for goods arriving by rail from the north to proceed to Shanghai over the Shanghai-Nanking railway, but since it has been possible to load steamers at Pukow, the decreased cost of handling and transhipping should more than counterbalance the lower railway rates. The transport companies, however, who foresaw the loss of their rebate from the Shanghai-Nanking railway, refused to forward goods by steamer unless the shipping companies offered an equal rebate. This proposal not being entertained, the transport companies continued to forward goods only by the Shanghai-Nanking railway which, though working to its full capacity, was quite unable to cope with the immense quantity of cereals and other produce coming down from northern Anhui and Kiangsu. The result was that not only the godowns and wharves at Pukow, but also the stations for miles up the line were choked with merchandise of which there was no means of disposing. It is claimed by the transport companies that steamers are now beginning to call more regularly at Pukow.

**Russia's New Siberian Port.**—The Russian Government have just opened a new Pacific terminus for the Trans-Siberian Railway. This is the port of Nikolaievsk, at the mouth of the Amur River, near the head of the Gulf of Tartary, about 850 miles north of Vladivostok. Goods received here will be transported inland up the Amur River to Stretyinsk, which is reached by a railroad that connects with the Trans-Siberian line. The new port will be able to handle 72,000,000 pounds of freight and it will thus help considerably to relieve the pressure of Vladivostok.

The Trans-Siberian Railway is one of the great engineering achievements of the world, and a monument to the vision, preseverance, and skill of the Russian engineer. The double-tracking of this 6,677 mile-long railway was begun some years ago. When the war started, thousands of additional men were set to work to hasten this vast undertaking, and the second track has just been finished, in time to facilitate the shipments of the enormous stores of artillery, projectiles, explosives, machinery, and goods of all kinds from the United States and Japan and England that have piled up on the crowded wharves and shores at Vladivostok during the past winter. This port has been overwhelmed by the demands upon its comparatively limited resources. Its contracted harbor has been unable to accommodate the sudden access of shipping, and insufficient docks and the lack of unloading machinery and of warehouses have caused great delays. Thirty-one million (31,000,000) tons of freight arrived at Vladivostok in the first four months of 1915, compared with 2,195,000 tons in the corresponding period of 1914. Thousands of workmen have been struggling night and day to enlarge the docks and port facilities, and the wharves are being trebled in length to accommodate at least forty great freighters at one time. Some of this congestion will be relieved by the routing of shipments to Nikolaievsk which has become chief port of supply for the mining district of Chita and other prosperous Siberian communities previously served via Vladivostok.

**Chosen Railways Promotion Bureau.**—The Seoul Press reports that a detached office of the Railway Bureau of the Chosen Government General has been established in Osaka. The office will principally deal with business relating to the transportation of goods by the Chosen railways from merchants in Osaka and Kobe and also supply information to the general public concerning conditions in Chosen, more especially with regard to the railways. To make Chosen better known it is intended to give popular lectures on Chosen and illustrate these lectures by means of cinematograph films.

**Manila Railroad Subsidy.**—With a view to promoting the connection of the principal towns on the eastern coast of Luzon by steamer, Secretary of Commerce and Police Reed has authorized a subsidy of P1,000 a month to the Manila Railroad company for the water service it now renders on the eastern coast of Tayabas in connection with its new railway line to Hondagua. The Hondagua railway line was inaugurated last May by the company, and following it steamer service connecting Hondagua with such principal coast towns as Mauban, Infanta, Baler of Tayabas, Paracale, Daet, Naga and Mambulao in Camarines, and the islands of Alabat, San-girin and Polillo was established. By this improvement, the rich country on the eastern coast of Tayabas was opened to traffic, and the distance from Manila to the Bicol provinces made shorter.

The railroad company has been operating on the eastern coast the coastguard cutter Samar, which it bought from the government. To improve this service, it has purchased another steamer, the Amelia.

**Less Railway Materials Purchased.**—Owing to the difficulty in obtaining funds for financing railway developments, there has been a big drop in the importation of railway materials at Hankow. Cars and wagons declined in value by Hk. Tls. 874,000, locomotives by 380,000 taels, and railway sleepers by 937,000 taels. Unclassed materials, however, increased by 275,000 taels in value, leaving a net decrease in railway material of over 1,900,000 taels.

**Japanese Railway Receipts.**—The receipts of the Japanese Government Railways for the month of June amounted to Y9,408,551, comprising Y4,166,281 in passenger receipts and Y5,242,270 in goods receipts.

**Mie Railway Sanctioned.**—The Japanese Railway Board has given sanction to the Mie Railway Company, promoted by Mr. Monhichi Kuki and other businessmen at Yokkaichi, for the construction of a steam railway, approximately 4 miles in length, between Yokkaichi and Shigomura, Mie prefecture. The new company is capitalised at 200,000 yen.

**Chung Mun-Yew Reappointed.**—The offices of the Shanghai-Nanking and the Shanghai-Hangchow Railways have received a telegram from the Chiaotungpu announcing

that Director Chung Mun-Yew has again been ordered to take charge of these two railways. Director Sun To-yu was appointed some time ago owing to Mr. Chung's ill health.

**Shanghai Tramways.**—The following is the traffic return of the Shanghai Tramways for the month of July, 1916, and for seven months, ended July 31, 1916, with figures for the corresponding periods last year:—

| | July 1916. | July 1915. |
|---|---|---|
| Gross receipts | $129,419.74 | $112,658.53 |
| Loss by currency depreciation | 34,282.91 | 30,489.89 |
| Effective receipts | 95,136.83 | 82,168.64 |
| Percentage of loss by currency depreciation | 28.06 | 28.71 |
| Car miles run | 826,126 | 289,050 |
| Passengers carried | 5,820,066 | 5,041,486 |

| | 7 months ended July 31, 1916. | 7 months ended July 31, 1915. |
|---|---|---|
| Gross receipts | $855,243.91 | $745,986.74 |
| Loss by currency depreciation | 225,302.20 | 199,487.56 |
| Effective receipts | 629,941.71 | 546,499.18 |
| Percentage of loss by currency depreciation | 27.99 | 28.50 |
| Car miles run | 2,112,727 | 1,905,519 |
| Passengers carried | 37,951,546 | 38,713,966 |

## SHIPPING

**Straits S. S. Co.'s New Vessel.**—Another fine mail and passenger vessel has been added to the fleet of the Straits Steamship Co., Ltd., by the arrival in Singapore July 14, 1915 of the steamer Kajang. Built at the Taikoo yards, Hongkong, she embodies every up-to-date feature of modern ship-construction. All the new vessels added to the line recently have proved very handy cargo-carriers and the Kajang will be able to carry 2,500 tons at a draft of 15 feet. This should assure to the owners large profits, especially since the Bangkok rice trade calls for vessels of light draught because of the Menam bar. The Kajang can cross the bar with 2,000 tons.

**E. & A. Empire Sold.**—The Eastern & Australian steamship Empire, 4,496 tons, has been purchased by Messrs. Lowden Bros., of London, who also bought the Aldenham from the same company. She will be delivered at Marseilles whence she has gone from Taku with a full load of Chinese coolies for France. She was built in 1902 by Messrs. Beardmore & Co., Glasgow, with dimensions 386ft. by 46.7ft. by 27.7ft. and was employed on the run between Australia and China.

**R. V. F. Trans-Pacific Service.**—A steamer service between Vladivostok and American Pacific ports by the Russian Volunteer Fleet, which was once suspended, it has been decided, will be resumed shortly. The s.s. Angara, ex-Anegawa Maru, which was restored to Russian possession by the Japanese Government, will be the first steamer.

**Coolies Shipped to France.**—The Shigisan Maru is at Tientsin under charter to carry 1,300 coolies to the same destination. Some of the coolies will be employed for agricultural purposes, and others on road work. The Harima Maru will be the third vessel to carry Chinese coolies to France.

**Denies Offer of Austrian Ships.**—Denial has been made by the Agent of the Austrian Lloyd that three steamers at Shanghai have been offered for sale to the China Mail Steamship Company by the Austrian Lloyd. The steamers that have been tied up here since the war by the Austrian shipping concern are the Bohemia, Silesia and the China. They were said to have been offered to the China Mail line for (G) $1,500,000—which is at the rate of (G) $500,000 each. The China Mail is now operating the one steamer, China, and has been scouring the world for more tonnage as all the freight and passengers that their one liner could handle have been obtained at war-boom rates. It is announced that if the sale of the interned Austrian ships is made, they will not be used until after the war is over. The three steamers are part of the Austrian naval reserve and the consent of the government would have to be obtained before the sale could be made.

**Japanese Canal Postponed.**—Mr. Okada, one of the promoters of the proposed Keihin (Tokyo-Yokohama) canal, has applied to the Government for permission to postpone the work for another year. Mr. Okada received a permit which provided that the work commence on August 7, 1916. As the reason for postponement, Mr. Okada submitted to the Government that machinery and other materials for dredging have been raised in price on account of the war.

Another canal in prospect is that at Kawasaki near Yokohama as a measure inviting the establishment of factories. According to the plan, the capital for the construction of the canal is 1,000,000 *yen* and the ground purchased is 350,000 *tsubo*. The length of the canal will be 7,200 feet and its width 120 feet. Both sides of the canal for the length of 780 feet will be reclaimed for the establishment of factories.

**Minnesota not Japanese.**—That the big American liner Minnesota, which formerly ran on the Great Northern line between Seattle and the Orient, has been purchased by the Toyo Kisen Kaisha, was reported in a cablegram from the United States to Japanese papers. This report, however, is denied by Mr. Ryozo Asano, one of the directors of the company. Mr. Asano admitted that negotiations were started some time ago, but were dropped and have not been resumed. The Korea, which was handed over to the T.K.K. on July 12, may have been the basis for the report about the Minnesota.

**China Coast Ports Shipping.**—Tientsin: The total number of vessels which entered and cleared the port of Tientsin in 1915 was 1,962 with aggregate gross tonnage of 2,233,403, showing a decrease of 333 vessels of 665,720 tons over 1914, in which year the total was 2,295 vessels of 1,899,123 tons.

Antung: During the year 1915 there was an increase of 204 vessels of 45,408 tons compared with 1914 on the total shipping which entered and cleared that port. The totals for the two years were 586 steamers of 313,018 tons in 1915 and 382 steamers of 267,610 tons in 1914.

Chinwangtao: During the same period the number of vessels that entered and cleared that port was 890 of 1,341,327 tons and in 1914 the total was 1,108 vessels of 1,647,648 tons, showing a decrease of 218 ships of 306,421 tons from 1914.

Chefoo: The shipping returns for Chefoo for 1915 give a total of 3,384 vessels with aggregate tonnage of 2,870,160 in both entries and clearances combined, being a decrease of 314 ships of 507,915 tons from 1914, in which year the total was 3,698 vessels of 3,378,075 tons.

Newchwang: The total number of the incoming and outgoing vessels for Newchwang for the same year was 973 of 1,168,729 tons, showing a decrease of 136 ships of 147,702 tons from 1914.

**Forecasts Post-Bellum Conditions.**—There is no sort of doubt that as soon as this war is over, says the New York Journal of Commerce, there will be a strenuous effort on the part of the British and German shipowners to revive and extend their activity to the utmost. It will not be surprising if there is a pretty close association and co-operation on the part of both nationalities in their rivalry. The British companies will be more likely than heretofore to work together in a common interest in the distribution of trade and in economy and efficiency in methods. Something similar is likely to take place in Germany and both may have their Governments behind them. There are many British vessels to be relieved from service as naval auxiliaries, and many German vessels to be released from internment. At the same time with this renewal of the supply and revival of activity of merchant vessels in the ocean trade, it is likely to be found that for a time at least there will be a falling off in the use for them. There will probably be a complete cessation of the transportation of munitions and war supplies on merchant vessels, and there is sure to be a reduction in various classes of imports and exports as compared with the ante-war period. While there has been considerable loss of shipping during the war, there has also been a good deal of activity in replacing it. Those who are figuring upon a great expansion of American merchant marine and the trade in which it is employed after the war is over, will do well to keep in mind what there is going to be to contend with. Success will call for intelligent and persistent enterprise coupled with freedom from oppressive legislation, and the American shipowner will need the fair chance more than ever.

## FINANCE

**China's New Budget.**—It is understood that a rough estimate of the different items of expenditure for next year's Budget is being made by the Ministry of Finance. The funds to be allotted to the different branches of administration show no marked change from the Budget for the current year except that the amount set aside for education and industry will be increased. The allotment of funds to the various branches of administration for next year is in the following ratio:—1 per cent for diplomatic affairs, 10 per cent. for Internal Administration, 45 per cent for financial administration, including the repayment of foreign loans and indemnity funds falling due next year, the payment of Tsing Imperial House Pension and the redemption of notes, etc., 30 per cent for military expenditure, 2 per cent for judicial administration, 5 per cent for education, 4 per cent for the encouragement of industry and commerce and 1 per cent for the improvement of means of communication.

**Finance Minister Retrenching.**—Mr. Chen Kin-tao, Minister of Finance, has drawn up a plan in which he requests every department of the Government to cut its administrative expense as much as possible. He is said to have adopted this plan of retrenchment because his loan proposals to Japan, the Quintuple Syndicate and the United States have all proved a failure.

Japan has declined to accept his proposal, saying she will not lend any money to China until a perfect agreement has been concluded between the North and the South. The International Bankers' Syndicate has also refused the Chinese Minister's proposal, while for the time being the United States has declined to lend any money to the Chinese.—*Asahi.*

**Chinese Securities Firmer.**—Chinese securities have been rather more active than usual recently, remarks the London *Economist*, and prices have risen. One of its contributors suggests that "the death of Yuan Shi Kai, the President, may make an incalculable difference to the future of China, for under his despotic rule the country was thrown into a state of chaos. Whatever the future may bring forth, Chinese bonds have quite brightened up, for they had sunk to low levels under Yuan's rule. China has always met her foreign obligations, which is a strong point in her favour. A new and stable rule will probably work wonders with the country." This is optimistic, indeed, says the *Economist*, but let us hope the forecast may prove correct. In the past China has found London a sympathetic centre for financing her development; the "Crisp" loan was issued in London in 1912, while a Reorganisation loan made its appearance in 1913. The Chinese Government has a number of railway loans. Since the war began the London market has been closed to China by the Treasury control of capital issues.

| Stock. | Issue Price. | Price July 27, 1914. | Price End of May, 1916. | Latest Price | Rise Since End of May, 1916 | Fall Since July 27, 1914. | Present Yield. £ | s | d |
|---|---|---|---|---|---|---|---|---|---|
| CHINESE. | | | | | | | | | |
| 5 %, 1896, red, 1933 | 98¾ | 101 | 90¾ | 94⅝ | 3⅞ | 6⅜ | 5 | 10 | 0 |
| 4½ % Gold Bonds, 1898 | 90 | 92 | 76⅞ | 82½ | 5⅝ | 9½ | 5 | 10 | 9 |
| 5 % Imp. Railway Loan | 97 | 100 | 79⅝ | 85¼ | 5⅝ | 14¾ | 5 | 17 | 3 |
| 5 % Gold, 1908* | 98 | 84 | 69⅛ | 73 | 3⅞ | 11 | 6 | 3 | 3 |
| 5 % Gold Loan, 1912 | 95 | 86 | 72½ | 78¾ | 6¼ | 7¼ | 6 | 7 | 0 |
| 5 % Reorg. Loan, 1913 | 90 | 88 | 73¼ | 79½ | 6¼ | 8½ | 6 | 5 | 9 |
| 5 % Shanghai-Nanking L. | 97½ | 86 | 72¾ | 76½ | 3¾ | 9½ | 6 | 10 | 9 |
| 5 % Canton Kowloon Rl | 100 | 85 | 71 | 74½ | 3½ | 10½ | 6 | 14 | 3 |
| 5 % Tientsin-Pukow Rl | 98¾ | 88 | 69¾ | 75 | 5¼ | 13 | 6 | 13 | 3 |
| 5 % Do Supp Loan | 100½ | 84 | 67½ | 73¾ | 6¼ | 10¼ | 6 | 15 | 3 |
| 5 % Shang-Hang Rly | 99 | 84 | 73¼ | 70 | 2¾ | 13½ | 7 | 1 | 3 |
| 5 % Hukuang Rlys | 100½ | 92 | 75 | 76¼ | 1¼ | 15¾ | 6 | 11 | 3 |
| 5 % Honan Rl (Red. 1935) | 87½ | ... | 73⅜ | 78 | 4⅝ | ... | 7 | 4 | |

* Interest 4½ per cent. after 1923.

† Yield on a 4½ per cent. basis.

The table shows that prices of Chinese loans have jumped about in a rather erratic manner. But the recent rise is significant. Both the "Crisp" and Reorganisation loans show good rises, and yield over 6 per cent., while the railway bonds give a higher return. Yields range between 5½ and over 7 per cent., which does not put Chinese credit in a bad light when one considers that the credit of Great Britain is, at the present time, practically on a 5 to 5¼ per cent. basis.

**Stockholders Seek Control of Bank.**—At a recent meeting of the Merchant Shareholders' Association of the Bank of China the organization determined on plans that are meant to take the bank from under the domination of government officials and politicians. They seek to have it conducted according to the dictates of good banking and the wishes of the shareholders. Resolutions have been drawn up asking that the by-laws be changed to make this possible for submission to the National Assembly. The association asks that the assembly change the by-laws of the bank—and holds back a club for use if the request is refused. The Merchant Shareholders' Association was formed when the recent declaration of the moratorium forced a crisis in the bank's affairs. Mr. Chang Chien, formerly Minister of Agriculture, is chairman.

Mr. Chang Kia-ngau, Sub-manager of the bank, has stated the position of the bank and steps that had been taken by shareholders to gain more power in its operation. The bank's authorized capital is $60,000,000. It was arranged that at first $10,000,000 be subscribed by the Ministry of Finance and $10,000,000 by merchants. The Ministry of Finance subscribed its share in 1913. The merchants were to subscribe $5,000,000 last year and a like amount this year. But last year the troubles of the monarchical movement came down on China and in the bad market that resulted only $2,320,000 was paid for shares. According to the by-laws of the corporation the merchants were to subscribe $10,000,000 for shares at which time the bank would call a general meeting of the Shareholders' Association. The shareholders did not wait, but formed the association among themselves to safeguard their interests.

Now the shareholders have aimed at increasing the holdings of the merchants so that they shall finally acquire a controlling interest. At a meeting of the association it was decided to place on the market sufficient shares to bring the merchant holdings to $5,000,000. This would require a subscription of $2,680,000. When these shares are subscribed there will be another $5,000,000 in shares offered for sale. The conditions submitted to the National Assembly were:

From now on the bank will be maintained for the shareholders, and government officials will not be allowed to prohibit the payment of notes, or interfere with the legitimate process of banking. The government will be treated as are the other shareholders and the officers of the bank will conduct the institution along the lines of business and not of politics. The appointment of a bank president must be sanctioned by the shareholders before that official can take his seat; or the appointment must be made from a number of candidates submitted by the shareholders. The assembly is asked to increase the amount of merchant shares so that it will be possible for them to gain a controlling interest in the bank's affairs. It is suggested that the proportion of the stock issue should be something like $40,000,000 to be subscribed for by merchants, and $20,000,000 by the Minister of Finance. The Shareholders' Association says that if these conditions are not granted, the money received from the sale of shares (that is, for the $2,680,000 subscription to be placed on the market) will be held by the association and deposited by it in the bank. The association will guarantee to the buyers of shares that they shall have their 7 per cent dividends from these shares.

**Oriental Colonization Co.**—It is stated that Dr. Yagyu (ex-President of the Bank of Formosa) is to be appointed new President of the Oriental Colonization Co. on the occasion of making new investments in Antung and Chientao to the amount of Y10,000,000.

**S.M.R. Co.'s Call for Capital.**—The South Manchuria Railway, as stated in the July issue of the Far Eastern Review, has issued a circular to its shareholders calling upon them to pay a sum of Y10 per share on October 1st. This will bring in to the company a sum of Y4,000,000. This money will be used to develop the iron and steel industry based upon the Asanshan mine. The Company, being in want of Y4,000,000 more for the capital expenditures for the present fiscal year, expects to issue another call to the shareholders in March next. What this is for, has not yet developed.

**New Russian Exchequer Bills.**—It has been privately decided that the second issue of the Russian Exchequer Bills to be appropriated for the settlement of the outstanding accounts for the sale of Japanese munitions to Russia shall be underwritten by the Japanese bankers to the amount of Y40,000,000. The new Bills bear 7% interest per annum and are redeemable in the course of one year and are to be included in the list of the approved securities of the Bank of Japan.

The payments for Japanese munitions supplied to Russia remaining unsettled on July 20, were Y80,000,000. An agreement has been concluded between the Russian and Japanese Governments with regard to the manner of payment. This will go a good way to facilitate the conclusion of further contracts between Russian and Japanese Governments and private manufacturers for the supply of munitions. As the bulk of the payments for munitions supplied to Russia goes to the Japanese Government, it may surprise students of finance to learn that it has been privately decided that an Internal Bond issue of Y2,000,000 is to be floated in Japan towards the end of September.

When the first sales of arms were made to Russia, some angry mutterings were heard from those who failed to share in this business. They and the newspapers who voiced their claims were promptly gagged.

**Financing the War.**—The Russian Government has issued an emergency ukase under date of June 1 (Russian calendar) announcing the issue of new short term treasury debentures amounting to 3,000,000,000 roubles in connection with the war expenditure, says an official report from the Japanese Ambassador at Petrograd. It is provisionally stated that the total amount of treasury debentures so far issued does not exceed 9,000,000,000 roubles, and that as regards the face value, issue price, rate of interest, terms of repayment, etc., and the rate of the conversion to foreign currency, the regulations of the Imperial Ukase of November 30, 1915, and of March 18, 1916, shall apply to the new issue.

**Japan Buys British Bonds.**—The Kokumin announces that it has been definitely decided to use the 100,000,000 yen retained by Japan in the United States as part of her specie reserve in the purchase of £10,000,000 of British exchequer bonds. The term is one year and the rate six per cent. Payment will be made in London, the rate of exchange for the pound sterling being four dollars 76½ cents. The rate has hitherto been five per cent, the discount rate of the Bank of England; the change is explained by the recent corresponding increase in the bank rate. The exchange seems advantageous to Japan, but the Kokumin points out that it brings no profit, as repayment is to be made at the same rate.

**Japan's Postal Bank Deposits.**—The deposits in the postal savings banks of Japan showed a decrease in 1912, but since then they increased each year. The increase since the beginning of the European war has been most conspicuous. The figures on July 21 were: Number of depositors, 142,464,350; amounts of depositors, 61,908,470 yen. According to an investigation made by the Bureau of Postal Exchange and Savings, during last June there was an increase of 110,921 in the number of depositors and 8,041,494 yen in the amount of deposits over the previous month. These figures include 292,826 yen which is to be paid out as interest on deposits. Even deducting this, the net increase in deposits will reach 7,148,668 yen. The figures for postal savings transfers showed an increase of 628 in the number of depositors, but a decrease of 412,102 yen in deposits. There was an increase of 879,340 yen in the amount handled. The authorities state that, in consequence of the increase in specie, and the

money market's slackness and with the lower bank rates, the lower classes are comparatively rich, as a result of the industrial activity caused by the manufacture of war munitions. These facts combined are expected to create an increase in the amount of postal savings, which is one of the safest means of keeping money.

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**Sino-Japanese Bank for Mukden.**—Early in June, it was reported that a plan was being formulated among leading bankers in Tokio and Yokohama for the establishment of a bank in Mukden, which would act as the central monetary organ for Manchuria, in accordance with the contract the Bank of Chosen has recently entered into with the Mukden Treasury Department as one of the conditions of the recent Mukden loan, says the *Japan Daily Mail*.

On June 20th a conference was held by the promoters of the plan in Tokio, including the representative of the Bank of Chosen, Mr. J. Inouye, the President of the Yokohama Specie Bank, and others. According to a report to hand the bank thus to be established will be authorized to issue gold notes which will replace all previous issues by the Mukden native banks, and readjust the currency system in Manchuria, which is now so much depressed as unfavourably to affect trade in general.

The bank, if established, will have a capital of Y5,000,000, which will be equally contributed by Japanese and Chinese capitalists, and will be styled the Sino-Japanese Bank.

The scheme of the Bank of Chosen to open a branch at Harbin has almost materialized, according to a despatch from Harbin, Mr. Abe, the manager of the proposed branch office, having already arrived there. The actual operations were to be begun by the bank about the middle of July.

Mr. Yamato discusses the proposition of establishing a Sino-Japanese bank as follows:

"The economic investigation committee in its meeting on June 23 passed a Bill that a Manchurian bank be established. At the same time a private bank with a capital of 5,000,000 yen is being planned by the Chinese and the Japanese in Manchuria. The object of the latter bank is to unify the currency system in Manchuria to facilitate the circulation of money. The Bill for establishing a Manchurian bank was introduced in the last session of the Diet. But the draft was unsatisfactory and although the Diet was not opposed to the principle the proposition was not carried through.

"The Government some years ago had a surplus of 100,000,000 yen in the treasury. At that time Baron Goto suggested that all of it be invested in establishing a big bank in China. His idea was that even if the bank should fail for any reason, money invested in China will produce fruits in some form or another, so that Japan would not lose anything after all. But the proposition of a Sino-Japanese bank, which was introduced in the Diet together with the Manchurian bank Bill in the last session, was not on so extensive a scale. It was because the Government has exhausted all of the surplus in the treasury that any big investment in such a bank was considered out of place. But to-day the Government has a big specie reserve. The suggestion to utilize the specie reserve as capital may give the Government an opportunity to invest it in such a bank. The Government should at any rate push the two bank Bills ahead."

**Yokohama Wants Free Trade.**—Reduction of import duties and the entire abolition of the tariff on some products are advocated in a recommendation passed by the Yokohama Chamber of Commerce for presentation to the Premier, the Minister of Finance, the Minister of Agriculture and Commerce and the Economic Affairs Investigation Committee. Following are the recommendations:

The Statutory Tariff on pig-iron, which now levies a duty of 10 sen per 100 *kin*, and the Conventional Tariff for the same at the rate of 83 sen should be abolished. Pig-iron, which is used in various kinds of machinery, and steel are so limited that the home production cannot meet the demands, the inevitable result being that we must look to foreign markets for supplies. It is most advisable that the Customs duties on these goods should be abolished, in order to develop domestic industries.

The Statutory Tariff on wire rod, which is levied at the rate of 90 sen per 100 *kin*, should be abolished. Wire-rod is used in the manufacture of steel wire and wire-rope, and is largely supplied by foreign countries. The wire-rope manufacturing industry in this country has made such progress of late years that not only are the demands here met by home-manufactured goods, but some of these goods are exported to foreign countries. Under these circumstances, the duties on these goods should be abolished with a view to developing the home industries. If the immediate abolition of the duty is impossible, at least a rebate duty should be allowed on the export of wire-rope by Japanese manufacturers.

The Statutory Tariff of 40 sen per 100 *kin* on lead should be abolished. The demands in this country for lead for the manufacture of paint, plates and pipes, is increasing annually, and yet the lead produced at home is inferior in quality and limited in quantity.

The Statutory Tariff of 78.80 yen per 100 *kin* on mosquito nets should be lowered to 39.50 yen, and the *ad valorem* duty of 30 per cent should be lowered to 15 per cent Similar goods cannot be manufactured in Japan, and therefore this country must look to foreign countries for supplies. This material is chiefly used for the lining of straw hats, and if the consumption duties are added to the import dues the taxes thereon are very considerable.

The Statutory Tariff of 6 sen per 100 *kin* on rice bran should be abolished, and that of 30 sen per 100 *kin* on wheat bran lowered to 15 sen. It is difficult to understand why import duties are levied on rice bran, seeing that no duty is imposed on fertilizers. As regards wheat bran, this is used as food for poultry, and it is most advisable that the duty thereon should be lowered by one-half with a view to encouraging poultry-farming.

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**P. I. National Bank Statement.**—The Philippine National Bank, although it did not open its doors for business in its regular quarters until July 22, has been doing a rushing business in temporary quarters, to judge from a statement of condition given out by President Willis of the institution, showing an increase of 148 per cent in assets since May 23, last. The loans and discount item has increased during the period from May 23 to July 15, from P5,460,641 to P6,472,677.76. Interest accrued receivable has decreased from P238,489.83 to P236,108.41. Cash on May 23, last was accounted for as follows: with insular treasurer and in banks, P5,571,-505.07; due from branches, P562,777.35; and other assets, P4,305. In the statement just issued, the cash total has increased to P20,-603,169 91, accounted for as follows: due from branches, P701,085.03; due from Manila banks, (clearing account), P2,226,953,34; due from banks and bankers, including the government funds deposits, P9,083,373.66; due from foreign banks, P4,187,616.65; in vault and with the insular treasurer, P4,404,141.23. Customers' liability is given as P647,950. During the interval the capital paid in has increased from P2,385,720, to P2,653,360, and deposits, including those of the insular government, from P9,184,155.56, to P26,342,-783.16. The individual accounts now carried by the new bank total P2,885,028.32.

In resume, the statement points out that the total assets of the bank, as of May 23, 1916 were P11,800,000, while on July 15, last, they had increased to P29,300,000.

When President Willis was asked if he had any statement to make in connection with the figures given out, he replied that it was his belief that the figures spoke for themselves, and that there was really nothing that he would care to add.

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**P. I. Postal Savings.**—As a result of the adoption of the administrative code by the Philippine legislature during its last session, the postal savings bank finds that it has an extra 10 per cent of the funds held by it on deposit to loan on improved real estate, for periods not to exceed five years. This amount approximates P430,000 according to a statement by Mr. Miller, head of the bank. Secretary of Commerce and Police Reed, who is a member of the postal savings bank board, stated that these funds must be invested in some manner, as depositors are being paid 2 ½ per cent interest on them, and if the people do not borrow it will be necessary to sink the money in bonds or other securities.

The new provision of the administrative code, stipulates that 50 instead of 40 per cent of the total deposits may be loaned on improved real estate. These loans are made for periods not to exceed five years, at rates of eight to 10 per cent per annum.

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**Capital Invested in Philippines.**—Approximately P1,136,048,608.86 is the total amount of domestic and foreign capital invested in different industrial enterprises in the Philippine Islands, according to a statement prepared by the archives division for Secretary of Commerce and Police Reed. The total amount of capital stock of incorporated companies in the Islands reaches P2,098,488,733.54, representing 1,228 corporations. Of this total amount, about 50 per cent, equivalent to P1,344,460,912.75, has been subscribed.

The records compiled by the archives division since the date when the corporation law went into effect in the Philippines, show that 947 domestic corporations have filed articles at that office, representing a total capital stock of P153,534,167.74, and 281 foreign corporations capitalized at P1,944,-954,565.80. Most of these corporations are mining, commercial, industrial and agricultural, though some are private in nature and consequently non-stock corporations.

Of the total capital actually invested in Philippine interests, P1,068,662,517.50 belongs to foreign corporations and individuals and approximately P67,386,091.36 is invested by the Filipinos and local residents.

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**Philippine Internal Revenue.**—An increase of P1,692,572.35 over last year is shown in the Internal Revenue collections for the period from January 1 to June 30, 1916.

The increase would have been larger, officials state, had the revenue on manufactured cigars, tobacco, wines and matches maintained its usual standard. A falling off that cut the receipts P59,413.50 was recorded. Other increases served to balance the losses.

The following shows the collections made during the first six months of 1916, and the increase or decrease:

Coal and coke, P86,758.56, decrease P62,-698.39; cinematograph films,—P54,256.74, none collected during 1915; playing cards, P49,831.52, none collected during 1915; dealers in alcohol and tobacco products, P357,486.50, decrease, P31,917.00; merchants, manufacturers, common carriers, etc., P2,989,531.36, increase P827,905.99; occupations, trades, and professions, P445,891.99, decrease P4,766.89; cedulas, P3,630,004.00, increase P63,005.00;

income tax, P356,225.14, increase P58,510.35; banks and bankers, P159,558.09, increase P27,882.59; insurance companies, P43,339.84; and franchise taxes, P114,611.38, increase P3,540.15.

**Hongkong Liquor and Opium Revenue.**—The report of the Superintendent of Imports and Exports for the year 1915, which was presented at the meeting of the Hongkong Legislative Council on July 13th, contains the following passages:—

The revenue collected from liquor duties and licensed warehouses for 1915 was $626,574.97, as compared with $656,955.89 in 1914. As was to be expected from the conditions at present obtaining in the Colony, the revenue derived from the duties on European liquors shows a further decrease. The revenue from Chinese liquors shows an increase, and, though the total amount collected was less than in 1913, it is satisfactory to note that the whole of the increase comes from the liquors sold by the local distilleries.

The Department continued to control the Opium Monopoly during the year. Raw opium was purchased at the Calcutta Auctions from time to time through the agency of Messrs. David Sassoon & Co., who also made all the necessary shipping arrangements. Mr. H. Alan Taylor continued in charge of the factory, and, though a few minor alterations have been introduced, the general procedure has remained unaltered. The total quantity of raw opium boiled including confiscated raw opium during the year was 345½ chests as compared with 449 in 1914. This reduction was due partly to the increase in price which was introduced in September, 1914, but the sales were also affected during the earlier part of the year by conditions attendant on the war. The arrangements for the packing and sale of prepared opium have continued to run smoothly, and every endeavour has been made to prevent the opium sold in the Colony being exported to neighbouring countries. The gross revenue from the Opium Monopoly was $4,765,028.59, including the amount derived from fines and forfeitures.

## MINING AND METALS

**China Recoining Cash.**—Japan's illegal exportation of Chinese Cash and the melting of the same for the metals contained in the coins has moved the Chinese governor of Mukden to take steps that will end the exportations and save to China the profits the Japanese were making. The cash is being gathered from Chinchow and other districts to Mukden where it is used for minting copper coins. Lately the buying operations have assumed a semi-compulsory aspect and any one found keeping copper cash concealed or refusing to sell it is in danger of punishment. The cash made in the Kangchi and Chienlung Eras (of the Manchu Dynasty) is said to be of the finest quality. It will be set apart for mixture in the manufacture of small silver coins. Naturally this activity of China in developing one of her resources has not been allowed to pass without comment by the Japanese whose itinerant cash buyers were reaping big profits in their illicit trade. The action of the Chinese has solved the problem of the frequent clashes of the police with Japanese cash buyers.

**Filling Contracts for China.**—Advices from Pittsburgh tell of a most important steel deal consummated in the Pittsburgh district in the taking over by the McClintic-Marshall Construction Company of the holdings of the Riter-Conley Manufacturing Company, at Leetsdale, Pa. Included in the transaction are sixty-five acres lying between the Ohio River and the Pittsburgh, Fort Wayne & Chicago Railroad, and the largest plant in the world devoted to steel-plate construction. One of the main buildings covers eight acres.

The Riter-Conley Company, it is understood, was engaged in filling important contracts for China. The consolidation gives the McClintic-Marshall Company a capacity of 275,000 tons of finished structural work a year. The monetary consideration was not made public.

**Chinese Ordering Steel.**—A radical step in the development of the Chinese iron and steel industry is reflected in the mission to the United States of Gee Sing Sam of Canton, China, who is reported to be in Pittsburgh trying to negotiate for the purchase of iron, steel and railway supplies to the amount of $3,000,000. Mr. Gee said that he was representing a Chinese syndicate which has been seeking to purchase enormous quantities of machinery and supplies in Pittsburgh, Chicago, and other cities. He was asked whether he represented the Chinese government. He replied that he could not say.

Expansion by Chinese iron and steel industries has been foreseen for years by authorities who know of China's wealth in natural resources. It has been emphasized that not even a high tariff can protect American iron and steel industries from destructive competition by the Chinese. One instance is cited of the Han Yeh-ping Works in Hankow, China, which sold pig iron in Brooklyn, N. Y., at $4 a ton less than Pittsburgh could produce and deliver it. This was attributed to the cheapness of labor in China. Common laborers in the iron and steel industries are paid 10 cents a day in wages and skilled laborers 37½ cents, according to Congressman Richard W. Austin of Tennessee. Mr. Gee said that he had been able to negotiate for large purchases, but that he had experienced serious difficulty in arranging for deliveries.

**China Would Hold Cash.**—Of late many Japanese have been engaged in the purchase and destruction of Chinese copper coins in order to export the metals to foreign countries, and have realized great profit in the business. Lately the Chinese Ministry of Foreign Affairs received a report from the Special Diplomatic Delegate at Kirin to the effect that Yuan-chung Co. and three other Japanese firms there had tried to export 458 packages of copper, 8 or 9 per cent. of which bore clearly the mark of destroyed coins, and that when confiscated by the authorities the Japanese Consul of the port protested and demanded that the goods be returned to the firms. In view of the above incident the Ministry of Finance has issued a circular instruction to the provinces and Customs authorities to the effect that, according to the precedent established in the 12th month of the 4th Year of Min Kuo when a large quantity of copper which bore the mark of destroyed subsidiary coins of this country owned by Japanese merchants was confiscated by Tientsin Customs, that hereafter all such goods should be confiscated as soon as they are discovered.

The part played by these Chinese cash in Japan's copper trade can be seen from the following U. S. Consular Report:

The Mainichi, of Osaka, states that last year's exports of copper from Japan amounted to 60,000 tons, of which 30,000 tons were consigned to Russia, whereas the amount of its production was also 60,000 tons, of which 40,000 tons represent domestic consumption. While the quantity of copper available for export was no more than 20,000 tons, total exports were 40,000 tons greater. The explanation lies in the enormous imports of coins, principally from China and in a small measure from Korea, which are melted down and refined. The Chinese "cash" coin, continues the Osaka paper, is chiefly imported from Tsingtau. From this coin are extracted not only copper but also the more valuable tin and a considerable percentage of zinc. These coins have been hoarded up for centuries in China and are almost inexhaustible. A foreign calculation, however, adds the Mainichi, puts the total quantity of "cash" in China at 200,000 tons.

**China's Hardware Trade.**—The United States has an opportunity to take the hardware trade of China, formerly practically monopolized by Germany, was the statement of N. C. Chu, a Hongkong merchant, to a reporter of the New York Sun. Mr. Chu said he was in the United States representing the China Agency and Trading Company, Inc., an association of San Francisco, Hongkong, Shanghai and Canton merchants who deal in hardware.

"Germany supplied China with the bulk of the hardware used in that country," said Mr. Chu. "The amount has steadily been growing until it is worth about $30,000,000 a year, confined principally to building and machine tools. Germany no longer sends us these goods, and the one country able to do it now is the United States. I am here in this country now to interest your manufacturers in the project, and I am very much pleased at the reception your business men are giving me, as well as your Government. All seem anxious to acquire the trade and show a disposition to do what is necessary to retain it. There is no reason whatsoever why they cannot get the trade now and keep it. I will see members of your hardware industry during the week I am here and then visit the other cities."

**High Price of Silver.**—Commenting on the record price reached by silver in May, the Engineering and Mining Journal in a recent issue says:

About a month ago we recorded a sharp advance in the price of silver, which carried it up above 60c per ounce in New York, the highest point reached since the beginning of the war period. For a large part of April the price held between 62 and 65c, but there has been another sharp advance and it is now selling at 77¼c per ounce, which is the highest price on record for over 20 years. The nearest approach was in November, 1906, when it sold for a short time between 71 and 72c, that price being followed by a rapid fall.

The present advance is peculiar in that it is not the result of a heavy demand from the East. China has been taking a little more silver than for some months past, but the exports to India during the first quarter of 1916 have shown a very considerable decrease from last year. The present advance seems to be due to two causes, one being the unprecedented demand from the European mints. The English mint has been a heavy buyer, and large quantities have been taken by France and Russia. The silver coinage now being put out in Europe is on an unprecedented scale. The exigencies of the war have practically eliminated gold from circulation abroad. Some coin was needed to meet the requirements of the people largely accustomed to a metallic currency, and in addition to this a great amount has been used in paying the soldiers of the different nations.

The other cause for the rise has been the fact that stocks available are not large and that the offerings of silver have been unusually light. The main supply of the London market has come from the United States and Canada for some time past, and holders there have not been overliberal in their offers. The supply from Mexico has been less than usual owing to the troubles in that country, which have interfered very much with mining activity, and no new source of supply has come forward. Production in the United States and Canada has not fallen off to any great extent but the producers and owners seem to have held back as much as possible and have not pressed their metal for sale.

The demand for silver for use in the arts has been very good in the United States for

some months past. In Europe, of course, the industries using silver have been kept back by the war. The indications are that the present demand will continue strong for some time to come and that prices will be well maintained, although there may be some reaction from the present high level. Moreover, there are fair promises of a good demand from the Far East, which may become a large demand if business in China becomes more settled.

**Mitsui Buys Iron Mine.**—The Nagasaki Press says that the Mitsui Company's mining department has acquired the Kuchiyasu iron mine in Hokkaido for four million yen. The ore is to be supplied, on a ten years' contract, to a foundry to be established in Kyushu, at the rate of 100,000 tons per annum. Supplies will also be made to the Hokkaido Steamship-Colliery Company's iron works and it is rumored that the owners may start a foundry.

**Demand for Manchurian Coal.**—The demand for Fushun coal by Russia is increasing and the Chinese Eastern Railway authorities have decided to use Manchurian coal in place of wood, an agreement having already been concluded with the South Manchuria Railway Company, which owns the collieries. The supply to North Manchuria will then exceed 100,000 tons per annum. Another big order has been given by Russia and the South Manchuria Railway is preparing to meet further demands.

**World's Silver Output.**—The silver production of the world has averaged about 200,000,000 oz. per annum, worth approximately $100,000,000, since 1900. This compares with an average annual output of gold during the same period of more than $400,000,000, or four times the annual value of the silver. The world's output of silver in 1915 is estimated at 196,000,000 oz., of which the United States produced about one-third, Mexico, Central and South America another third, and Canada one-seventh, the remainder being contributed by Australia, Japan, and other countries. The figures for the world's yearly production of silver since 1860, issued by the Director of the U. S. Mint, show that the increase has been gradual, from 29,095,428 oz. worth $39,337,000 in 1860 to 211,339,749 oz. worth $116,849,900 in 1914. But from 1893 to 1906 the output remained practically at a standstill; in fact, the production in 1893 was worth slightly more than that of 1906, the value being $129,119,900 in 1893 against $111,721,100 in 1906 for approximately 165,000,000 oz. in both years. This was due to the decline in the silver market. In 1912, when the production of silver reached 224,310,654 oz. worth $137,883,800, the value was but little greater than in 1891, when the output of 137,170,000 oz. was worth $135,500,200. The recent rise in the price of silver was explained in a nutshell by Samuel Montagu & Co. of London, as follows: "The quotation fell quite as heavily when silver was demonetized upon a large scale; now an exactly reverse operation is taking place. Silver is being monetized upon a large scale."

**Outlook for Silver.**—While silver prices are fairly high, those who watch the market may note by the fluctuations that it is extremely sensitive. According to Messrs. Pixley & Abell of London, China and India are still the cause of weakness, and sales from one or other of these quarters have been in evidence almost daily, with the result that large buying orders for coinage have been easily filled. The immediate future is most difficult to forecast. Looking farther ahead the prospects statistically seem favorable for the following reasons:

(1) The low level that the stock of rupees in the currency reserve of India has reached, in spite of purchases amounting to some millions sterling, a good deal of which has already passed into currency, points to a continuous drain on this reserve, and it seems probable that the Indian government will have to continue coining for some time to come. (2) The British mint's requirements will probably continue. This year £2,200,000 has been absorbed for coinage in England. (3) The demand for silver by the Allies is likely to be maintained so long as the War lasts. In spite of important purchases, the stock of silver in the Bank of France has been reduced by £1,000,000 during the past year. (4) The probability of the retention in the country of a large portion of the Mexican production for the purpose of re-establishing the currency. (5) It is questionable whether China, having already sold such large amounts of silver, is in a position to part with much more. According to recent advices the stock of 'sycee' (60-oz. bars) in Shanghai is reduced to 26,000,000 taels (35,500,000 ounces). (6) The world's production of silver is decreasing. In 1915 the total production was estimated at 196,000,000 fine ounces, against 211,000,000 in 1914. For these reasons the future of the market, from a purely statistical point of view, seems favorable.

**Egypt as Silver Factor.**—Regarding Egypt as a factor in silver, the Egyptian correspondent of the *Pioneer Mail*, on March 10, wrote as follows: "Every year we have a silver 'crisis,' usually in the early autumn, when large numbers of laborers have to be paid daily throughout the country in connection with the cotton crop; but the crisis usually is over by Christmas, being met by imports of newly minted coin that has to be obtained in ordinary course. The War has, however, completely changed the situation. The increase in the army has necessitated the putting into circulation of far more nickel and silver currency than ever before, and the financial authorities took early steps to obtain the necessary extra supply. Things would not have been so bad if the shipments in the *Persia* and the *Maloja* had not been lost. During 1915 new coin to the value of £720,000 was imported, whereas the average of the preceding five years had only been £140,000, and the previous recorded maximum annual import was £694,000 in 1896, when the system was remodelled. The Sudan, it should be mentioned, uses the same currency as Egypt and a good deal of British gold and Egyptian silver remains every year in the interior of that dependency. India appears to have been the only part of the Empire that had any silver coin to spare, and by special arrangement the Egyptian government imported a certain quantity of silver rupees, which, it is stated, have now been declared legal currency in the country. Whether in order to facilitate trade between Egypt and the Sudan, they will also be made legal currency in the latter dependency, is not known.

**Changsha's Antimony Trade.**—Compared with previous year's figures, the export of all ores considerably decreased, in 1915. Antimony ore dropped from 156,979 to 15,221 piculs, lead ore from 66,251 to 3,461 piculs, and zinc ore from 211,630 to 92,139 piculs. The drop in the export of antimony ore may be explained by the fact that the good profits of the trade stimulated the antimony merchants to put in smelting plants locally, and large quantities of oxide ores were smelted into regulus.

Nearly all the sulphide ores of higher percentage were turned into crude antimony and nearly all the low-grade ores and part of the refuse into trioxide and regulus. Some big lots of oxide ores and refuse were shipped to Hankow but only to be smelted there into regulus. Thus, as a consequence of the war in Europe, one year was sufficient to transform China, hitherto one of the great exporters of ores, into the greatest producer of antimony metal. In future this will have its influence on the world market, as China, by its production of metal, will be one of the deciding factors in fixing the prices.

The production of ores reached its highest point in the first half of the year; then owing to the feverish haste with which mines were worked, difficulties arose in many mines, and the output was slowly decreased, but was balanced again at the end of the year by the output of many mines which had been developed during that time.

**Japan as Zinc Smelter.**—The outbreak of the European war has brought about a marvellous change in various lines of domestic trade, especially in the zinc industry. At one time Japan exported zinc ore to Germany and Belgium in large quantities, and then imported refined zinc from these countries. Since the opening of hostilities, however, Japan has imported large quantities of zinc ore from Siberia, Australia, French Indo-China and other countries. The imports during the first half of the present year are estimated to have reached 40,000 tons. The shipments of zinc from Japan during last year amounted to 15,000 tons, valued at 10,000,000 *yen*. The following table shows the imports to Japan during the past four years:—

| | Quantity. Tons. | Value. Yen. |
|---|---|---|
| 1912 ... ... ... | 10,946 | 3,327,801 |
| 1913 ... ... ... | 10,836 | 3,054,067 |
| 1914 ... ... ... | 5,744 | 1,542,928 |
| 1915 ... ... ... | 3,438 | 1,593,415 |

The following table shows the export of zinc-ore from Japan during the same period:—

| | Quantity. Tons. | Value. Yen. |
|---|---|---|
| 1912 ... .. ... | 30,408 | 937,302 |
| 1913 ... ... ... | 27,166 | 943,271 |
| 1914 ... ... ... | 14,043 | 470,251 |
| 1915 ... ... ... | 6,080 | 360,774 |

**Mining in Sea Bottom.**—Mr. Nakahara who had been endeavouring to build a machine which will fish up metals from the bottom of the sea, especially shells fired from warships during target practice, has completed his invention and it was recently given a trial on the *Sumida*. The machine is provided with a powerful electro-magnetic stone, which is let down to the bed of the sea, and has an arrangement like an automatic telephone receiver that gives a signal when the stone comes in touch with the objects searched for. The trial was successful, the machine locating and bringing to the surface nine-inch and ten-inch projectiles which had been thrown into the river. It is estimated by some naval men that something like 600,000 shells lie scattered at the bottom of Ise and Hiroshima Bays, the naval target grounds. These shells, at the present price of scrap iron alone, should be worth a matter of six million yen. A plan is now on foot to recover them by the use of Mr. Nakahara's machine.

**Gold from Chosen.**—The total amount of gold bullion purchased by the Bank of Chosen and its branches in Chosen during May last was 263,661 momme, worth 1,078,215 *yen*, showing a considerable increase as against the preceding month. The gold bullion purchased by the bank during the five months ending May last amount to 1,160 *kwan* 641 *momme*, worth 4,546,038 *yen*. The figures represent an increase of 1,160,000 *yen* in value as compared with the returns for the corresponding period of last year.

**Tin Mining in Perak.**—The Perak administration's report on Kinta states that 393 applications covering an area of 9,402 acres were received in 1915. Of these, 196 comprising 4,795 acres were approved, 115 were refused, and at the close of the year 126 were awaiting decision. Alienations of mining land amounted to 6,427 acres, of which 388 acres

represent conversions, and 3,316 acres renewals or re-alienations of old leases. Fifty-one prospecting licenses were issued over 8,830 acres. Under twenty-four of these selections up to 1,642 acres were made; at the close of the year thirty-one licences were still extant. Forfeiture proceedings were instituted against 1,031 leases: of these, 323, with an approximate area of 6,086 acres, were cancelled.

**Storage for Iron Ore.**—The Mitsu Bishi Kaisha has leased a large piece of foreshore land, a little below the Wuhu Foreign Settlement immediately above the Standard Oil Company's tanks, as no suitable foreshore site was available in the Foreign Settlement. It intends to erect storage godowns on it for iron ore brought down from the Tayeh mines in lighters towed by tugs and to load the ore on steamers from the depot during low-water season, when they cannot proceed above Wuhu for transport to the Yawata Ironworks at Moji.

The Mitsubishi Mining Department is reported to have purchased a large plot of ground at Naojima, a little island near the mouth of the port of Uno, Okayama prefecture, where a big copper refining works, costing Y.1,000,000 will be erected.

At the new works all the output at the Ikuno Mine will be refined, while at Ikuno only tin ores will be refined as at present.

**F. M. S. Tin Export Returns.**—Advance statement of block tin and tin ore exported, approximate value (in Singapore) and duty collected, during the months of January to June, 1916, and comparison with the corresponding period of previous year is as follows.

| Block Tin. | | Tin Ore (70 per cent. of gross weight.) | |
|---|---|---|---|
| 1916. | 1915. | 1916. | 1915. |
| pkls. | pkls. | pkls. | pkls. |
| 39,119 | 34,281 | 325,863 | 357,455 |

| | Total Tin. | | Total Approximate Value (in Singapore.) | |
|---|---|---|---|---|
| | pkls. | pkls. | | |
| Total ... | 364,982 | 391,737 | $32,899,476 | $30,912,775 |

It is stated that there is a continued inflow of orders into Japan for galvanized iron plate from India and the South Seas. One firm has recently received two such orders for 45,000 pieces and is now making shipments. The annual demand for galvanized iron plate in India and the South Seas in usual times is estimated at 250,000 tons, which has decreased to about 100,000 tons since the war.

**Nagasaki Coal Mine Destroyed.**—Advices from Nagasaki say that the Takashima coal mine owned by the Mitsu Bishi Co. has been almost completely destroyed by fire. The fire started in the pit on July 16 and has been spreading ever since. As a final means of extinguishing it the mouth of the pit was sealed on Friday. The fire inside the pit will be left to burn itself out. It is said that the quantity of coal remaining in the mine is not great, so the mine may be given up.

**Benguet P. I. Gold Output.**—Gold mining in the Philippines is coming into its own, according to reports received from the various mining projects now in operation throughout the islands. The Benguet Consolidated Mining company, milled during the first half of 1916, 8,030 tons of ore and recovered bullion of the value of P280,973.28, or an average recovery of P35 per ton. The Consolidated is at the present time in excellent condition and expects to pay large dividends from its future workings.

**Japanese Inspect P. I. Deposits.**—Reports received from the senior inspector of constabulary of Ilocos Norte, bring the information that three Japanese prospectors visited that province in June, to inspect the manganese deposits at Punta Negra and Punta Blanca, Pasuquin, and other deposits located east of Davila of the same municipality.

These prospectors were Y. Mikami, a representative of Ohta & company and two assistant engineers, K. Isujimo and I. Kasaska.

**Siberian Iron-ore Region.**—The iron deposits in the basin of the River Tellbess, right tributary of the River Kondoma, flowing into Tom River opposite the city of Kuznetsk, Siberia, have been known since the last century, but not until recently was the region surveyed. In 1913 it was turned over by Crown Land Administration to the Kuznetsk Coal Mine Joint-Stock Co., which undertook a careful study of the region with the view of establishing a large iron foundry and works.

Prof. P. P. Gudkoff was engaged to do the work and some of the results are already published. Over 10 independent iron deposits were discovered in the region. The main deposit is situated on the right bank of the Tellbess River, some 5 miles from its influx into the Kondoma River; it is of an eruptive nature and consists mainly of granodiorite, quartz, porphyrites, and melaphyre, with secondary strata of crystalline limestone, hornblende, slate, etc. The normal sedimentary strata were discovered only to the north of the region, where the Telbess iron region is separated from the Kuznetsk coal region.

The volume of ore uncovered at the Telbess deposit proper amounts to 3,611,412 tons of 58 per cent ore and 3,069,700 tons of poorer ore; and at the so-called Temir-Tau deposit to 7,222,824 tons of 54 per cent ore and 1,305,706 tons of poorer ore. Studies of other deposits of the region in 1915 indicate that the total deposit amounts to 27,087,396 tons of ore.

## NAVAL AND AVIATION PROJECTS

**China's Aeroplane Factory.**—According to American press correspondence from Peking, two American and two German engineers have been engaged by the Chinese government to establish an aeroplane factory, which will be located in Honan Province.

**Japan to Build two Aerodromes.**—Two new aerodromes, one military and one naval, will be built, according to the Japanese Government. The former will be located at Narashino in Chiba prefecture, and the latter at the sea shore at Kagamiga-ura in the Bay of Tateyama. The military air corps is preparing to study a combined action of aeroplanes with cavalry and artillery actions in time of war, but the aerodrome at Tokorozawa lacks conveniences for this purpose, so the authorities have selected grounds at Narashino for the new aerodrome. Sheds are now being made there, and the ground will shortly be opened for service. The naval air corps, too, has felt the necessity of a bigger aerodrome, and found ground along the sea-shore at Kagamiga-ura in Takeyama bay in Chiba prefecture. The ground there is now being purchased by the naval authorities.

**Japan to Spend 1,000,000 yen for Aviation.**—In the estimates of the War Office for the next fiscal year, the appropriation for the Aviation Corps is one million yen, an increase of 400,000 yen compared with the current fiscal year. With this increased outlay the War Department will build about ten aeroplanes, some sheds and another aviation ground in addition to the one at Tokorozawa.

**Japan Building Destroyer.**—At the Maidzuru Naval Dockyard the keel of the destroyer Hinoki, 600 tons, was laid recently with the usual ceremony. This destroyer, together with the Kashi, a destroyer of the same dimensions, the keel of which was laid down in February, is to be launched in October next.

**Japan's Biggest Warship.**—The Naval Office has given specifications to the Kure arsenal for the construction of the largest battleship in Japan. The displacement of the vessel, the Nagato, will be 32,000 tons and the speed 24 knots. The battleship will be equipped with twelve 15-inch guns. In comparison with the Fuso, the present largest battleship in Japan, the new one is of 1,400 tons more displacement and has two knots greater speed. The one most noticeable change in the new battleship is the increase from 14-inch to 15-inch guns and the improved equipment for defense against torpedoes.

**Japan Decides on Naval Plans.**—Following negotiations between the Minister of Marine and the Minister of Finance the last few weeks, it has been decided that the total appropriation for the naval construction program, a part of which was approved in the last session of the Imperial Diet, should be mentioned in the Government's estimates for the next fiscal year.

This program, which includes several super-dreadnoughts, battle-cruisers and other vessels, is expected to reach completion by 1923-4. The construction of one super-dreadnought and some other vessels was approved by the Diet in the last session. At that time the rest of the program was kept secret, and the members of the House of Peers demanded that the Government announce the full program in the next sessions.

## RIVERS, HARBOURS AND IRRIGATION

**Calbayog P. I. Jetty Started.**—Work has actually commenced on the Calbayog jetty, 536 metric tons of material having been placed during May. The contract was originally entered into with J. E. Ainsworth, deceased, and transferred by the estate to Kipp and York, a contracting firm of Cebu.

**Dredging at Corregidor.**—Under date of May 29, 1916, the military authorities requested that the Bureau of Public Works dredge approximately 43,000 cubic yards of material adjacent to the military wharves at Fort Mills, Corregidor Island. The acting secretary of commerce and police has authorized this bureau to do the work on the basis of actual cost plus 10 per cent, bills to be rendered monthly to the coast defense quartermaster at Fort Mills. This work will be undertaken immediately.

Owing to the limited amount of insular funds available for dredging, a considerable part of the port works equipment would have otherwise remained idle during the remainder of this year. The arrangement made with the military will enable the bureau to maintain this equipment during the period of operation and at the same time have the item of depreciation covered through the 10 per cent allowance over the actual cost of operation.

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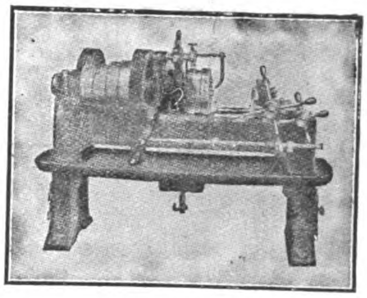
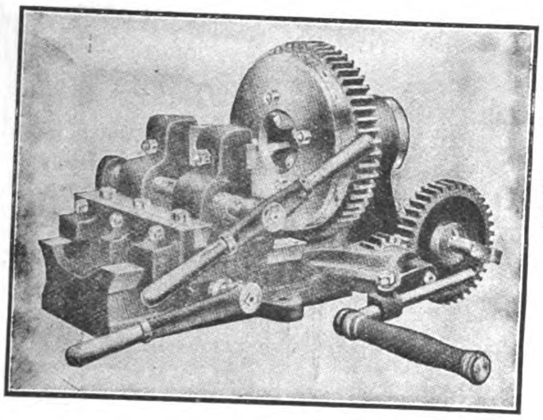
# Modern Screwing Machines



The illustration opposite shows our 2 in. size Single Head Patent Automatic Screwing Machine, which is one of a complete line of Single and Multiple Head Bolt Screwing Machines embodying the very latest labour-saving features and devices. It has Hand and Automatic Releasing Motion to the Die Head, Automatic Closing Device, Die Adjustment whilst in motion, etc. We claim that the Patent Steel Die Head these machines are fitted with is the most solid, simplest and best Releasing Die Head on the market. The Dies are operated mechanically. Springs with their attendant troubles, or other delicate mechanisms, do not enter into the construction in any way.



The illustration below shows our improved Universal Screwing Machine, which will screw Pipes, Bends and Short pieces up to 2 in. diameter, and Bolts when required up to 1½ in. diameter. This type of machine is also made for working by Power as well as by Hand, and in several larger sizes for dealing with Pipes up to 8 in. diameter. Of the 2 in. size illustrated we have during the last few years supplied over 2,500 machines, amongst which are many repeat orders.

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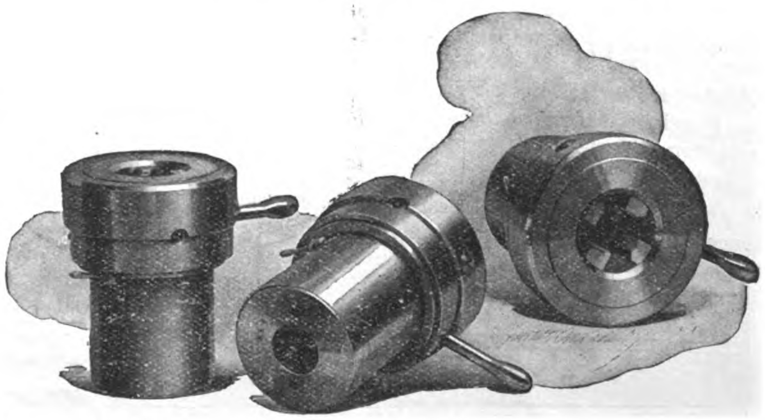

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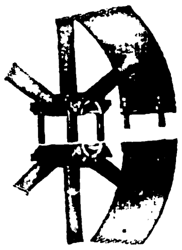
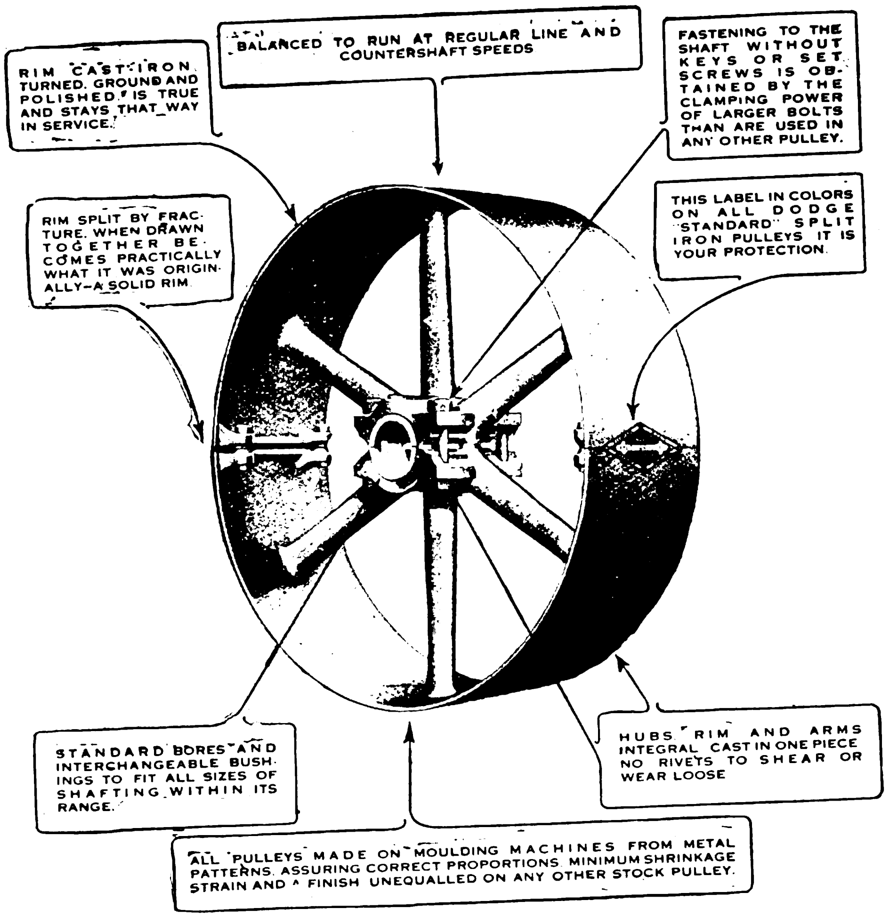


How the rim edges are fractured, then drawn together by bolts through rim lugs.



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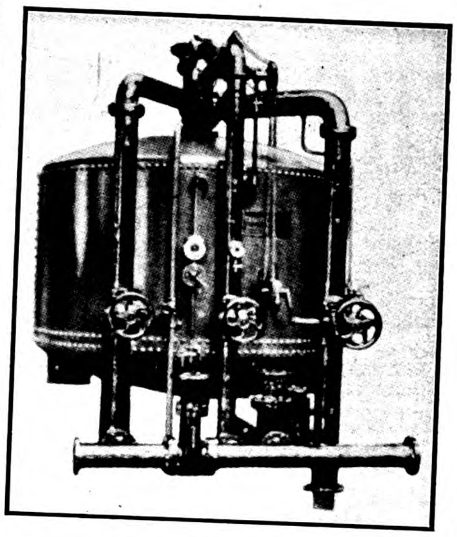


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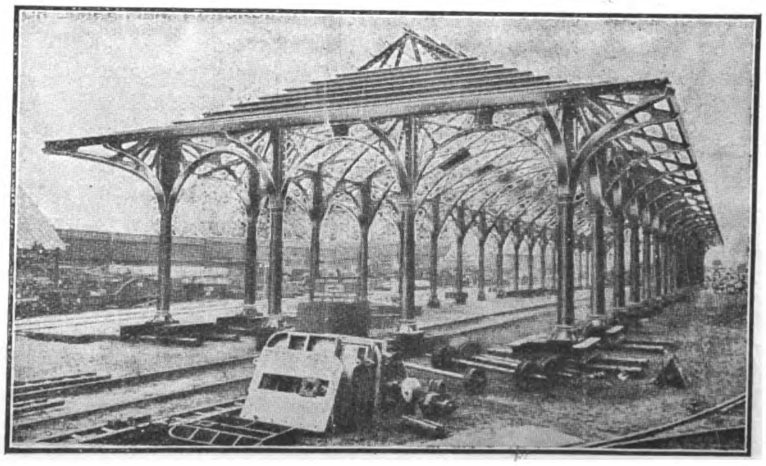


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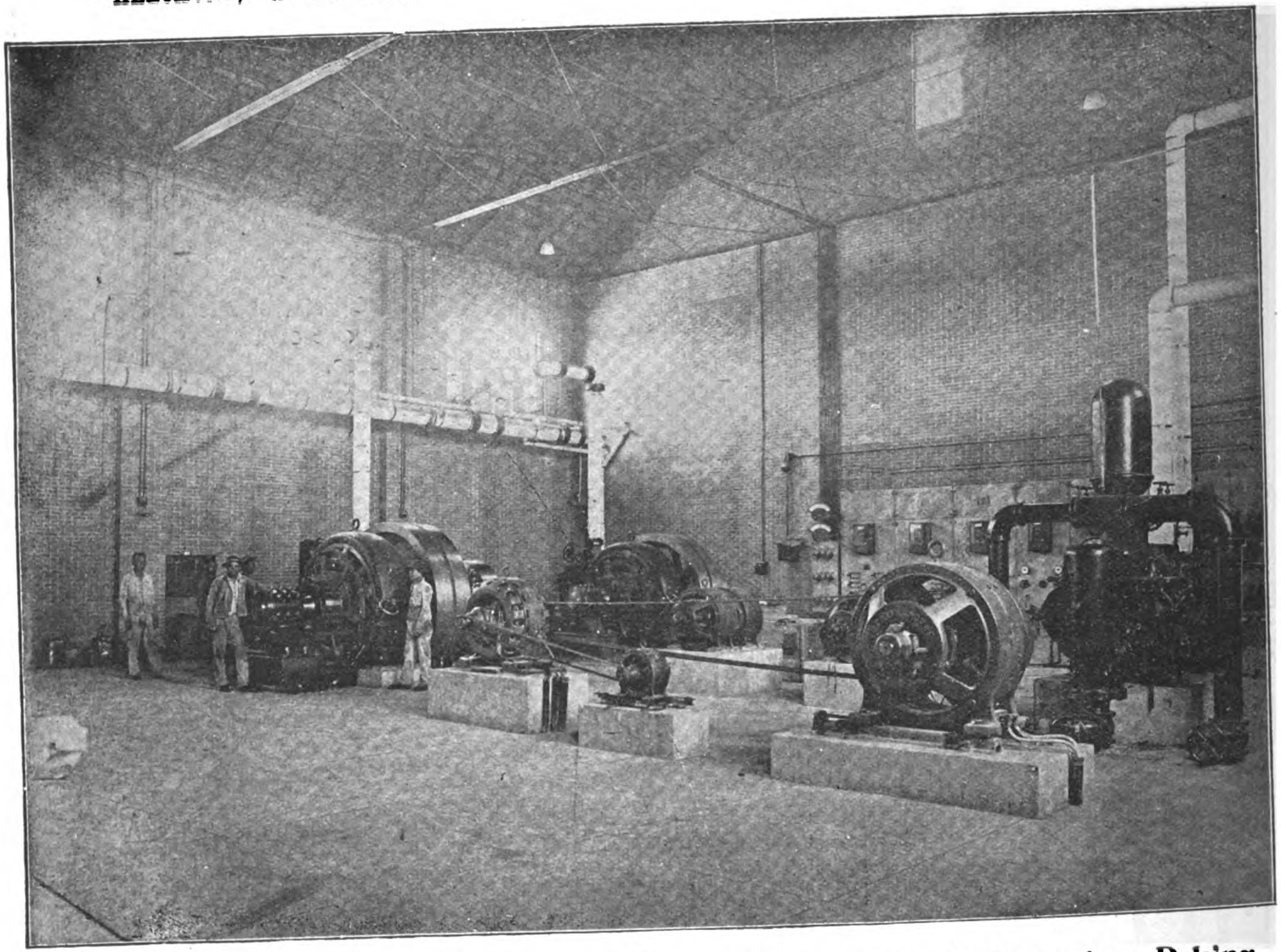

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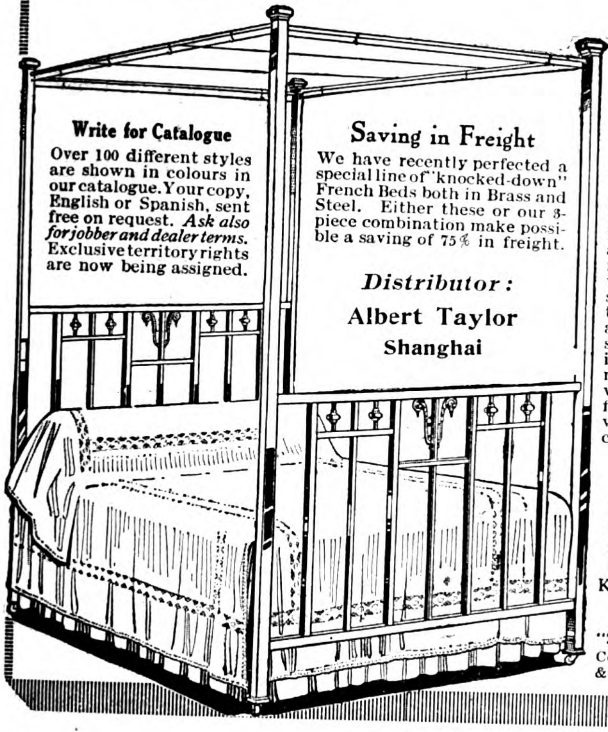
are the outcome of over fifty years of constructive bed-making experience. The brass tubing, round and square, is drawn and shaped by special Simmons processes which result in extreme fineness of finish.




Simmons Brass Beds are substantial and attractive. All parts used in their manufacture are shaped in our factories. Rods, tubing, ornaments and casters are *Simmons* standard.

Simmons Brass Beds are heavily coated with an enduring Simmons lacquer which is constantly subjected to rigid tests. As a result, they present an everlasting attractiveness. The lustrous velvety - golden finish harmonizes with almost any colour scheme.

THE SIMMONS COMPANY
*Established 1856*
Export Dept. 000
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U. S. A.
Cable Address: "Z.G. S., Kenosha"
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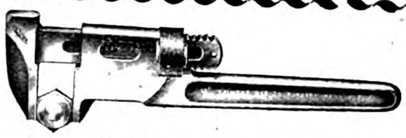

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**TRIMONT MANUFACTURING Co.**
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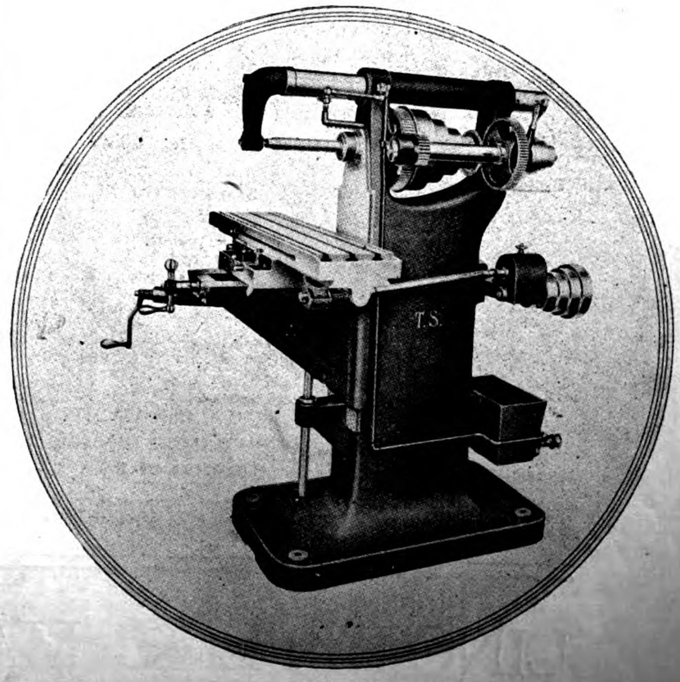

AGENTS:
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STOCKS ALWAYS IN HAND SUCH AS STEAM ENGINES, GAS ENGINES, VERTICAL BOILERS, STEAM PUMPS, HAND PUMPS, LATHES, GENERAL MACHINE TOOLS, TEA CLEANING MACHINERY AND BELL'S UNITED ASBESTOS OF EVERY DESCRIPTION.

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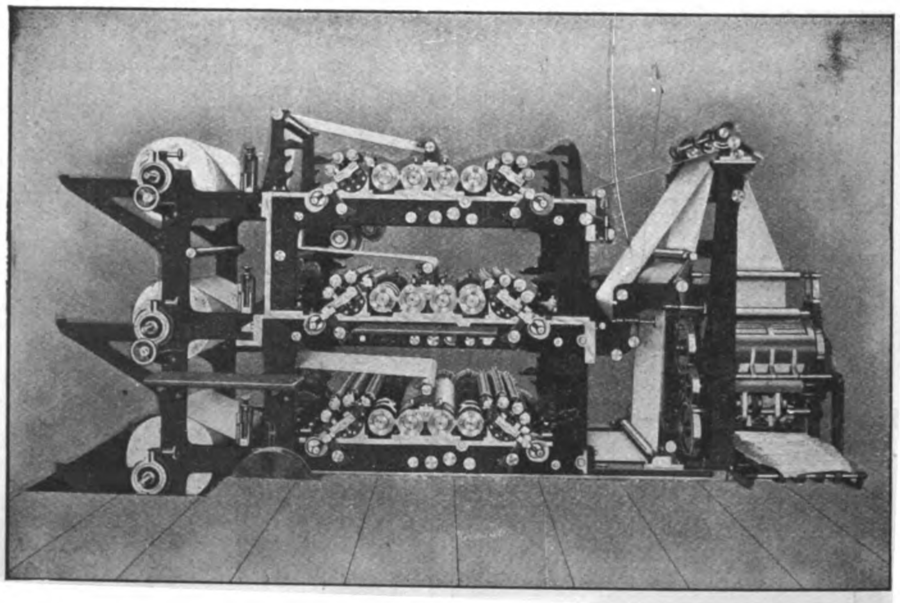
in Printing Press construction which doubles the output from any given number of Plates.

The invention which characterises the

## Duplex Tubular-Plate Press

is the use of cylindrical or tubular plates instead of the semi-cylindrical plates used on all other stereotype presses.



The Press here illustrated will print any even number of pages up to and including twelve from the same number of plates at the rate of 25,000 per hour. The addition of an extra folder will produce six-page papers at the rate of 50,000 per hour.

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**Engineering.**

**Head Office:**
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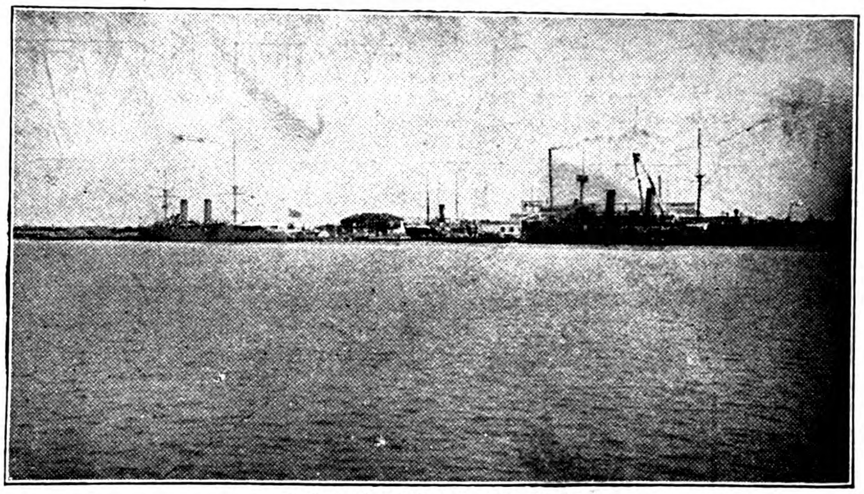

VIEW OF INTERNATIONAL DOCK
showing "M. S. Dollar" in Dock and the Chinese Cruisers "Hai Chi" and "Hai Yung" alongside Dock Co's. Wharf.

## Boilermakers, Dock Proprietors, Shipbuilders, Engineers and Electricians

**FIFTEEN REVENUE CRUISERS BUILT FOR THE QUARTERMASTER'S DEPARTMENT U. S. ARMY—MANILA, P. I.**

**The Model was exhibited at St. Louis Exposition and awarded the Gold Medal in 1904**

**The Sea-going Salvage-vessel "General Weeks" 148 feet long Built for the same Department, in 1910**

**Low Pressure Hot Water and Steam Heating Installations**

The Docks are five in number, ranging in length from 355 feet to 532 feet on the Blocks, and breadth of entrance from 53 feet to 77 feet, with a depth of water on the sill of from 16 feet to 24 feet.

The Dock charges are the most moderate in the Far East

The Company's Yards and Docks cover 96 acres. The Water Frontage is about 1½ miles in length. Wharves and Pontoons are arranged where steamers can moor during repairs; and slips for hauling up small vessels are provided. Sheer legs capable of lifting 65 tons are placed at the various Docks.

The extensive Shipbuilding yards and workshops, lit by Electric Light, are provided with the latest improvements, such as traveling cranes of 60 tons' capacity, hydraulic and pneumatic machinery and tools.

Light railway lines are laid throughout workshops and yards.

A Staff of Divers, and powerful salvage appliances, and Floating Cranes ready for any emergency at short notice. Enquiries immediately attended to.

Estimates given for all classes of work; Coast Steamers, Side and Stern-Wheelers, Tugboats, Launches, Steam Barges, Dredgers, Floating Cranes, and Lighters a speciality.

Every description of repairs and renewal work undertaken and expeditiously executed.

Motor, Land and Marine Engines and Boilers, Centrifugal, Mining, and other pumping machinery always in stock or in progress, also power driven Machine Tools. Engineer's Hand Tools, Steam, Gas, Oil, and Electric machinery and Engineering accessories generally.

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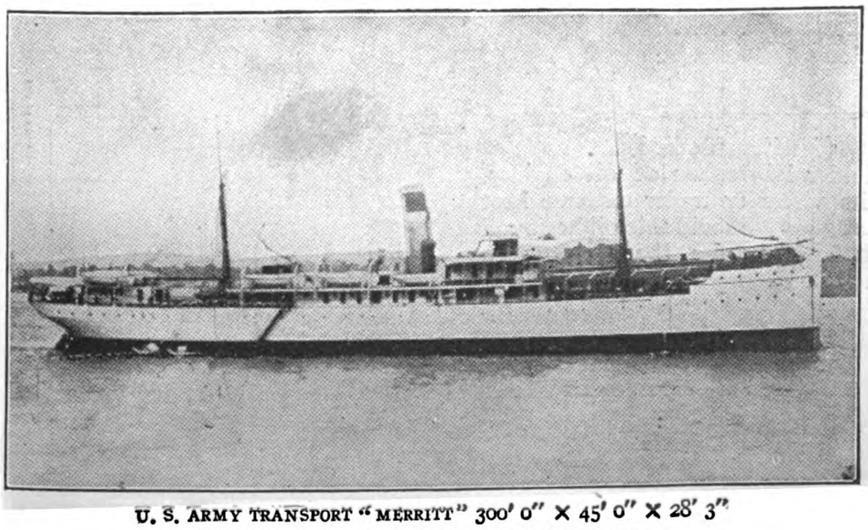

U. S. ARMY TRANSPORT "MERRITT" 300' 0" × 45' 0" × 28' 3"
Built for United States Government in 1912.

**PARTICULARS OF DOCKS**

Able to accommodate any vessel that can reach Shanghai

| Names | Length on Blocks | High Water | |
|---|---|---|---|
| | | Breadth of Entrance | Depth of water on Sill |
| Cosmopolitan Dock | 532 feet | 77 feet | 24 feet |
| International Dock | 528 ,, | 77 ,, | 23 ,, |
| New Dock . . . | 450 ,, | 74 ,, | 21 ,, |
| Old Dock . . . | 399 ,, | 53 ,, | 16 ,, |
| Tunkadoo Dock . | 350 ,, | 67 ,, | 16 ,, |

**Berths for Building Steamers of any Size**

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**Friction costs more than oil.**
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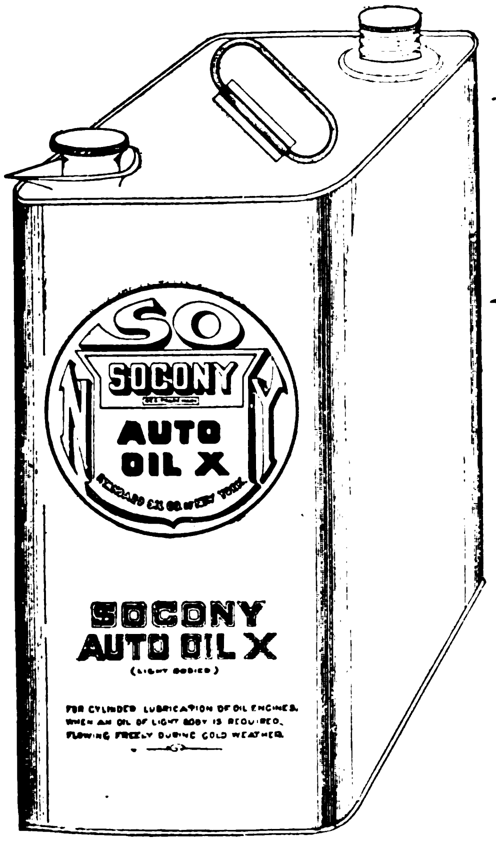
**Do not waste it.**




(Light Bodied)
For cylinder lubrication of oil engines when an oil of light body is required flowing freely during cold weather,

(Medium Bodied)
For cylinder lubrication of oil engines. It holds its viscosity under extreme heat and will not gum. Should this oil be found insufficient in body for the tropics we recommend our Socony Auto Oil XXX.

(Extra Bodied)
For cylinder lubrication of oil engines. To be used in the tropics when Socony Auto Oil XX is insufficient in body.

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Socony Oils are scientifically prepared and designed to meet the needs of the Motorist. They afford the degree of lubrication necessary to the maximum performance of the motor.

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HONGKONG

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All classes of CONSTRUCTIONAL and GENERAL ENGINEERING WORK undertaken, also LOCOMOTIVES, RAILWAY ROLLING STOCK and PLANT, BRIDGES, etc.

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We make a specialty of HIGH SPEED MOTOR BOATS for PASSENGER and CARGO Traffic.

ALL CLASSES of COCKS, VALVES and FITTINGS in IRON and BRASS supplied.

BOLTS, NUTS and RIVETS MANUFACTURED at SHORT NOTICE.

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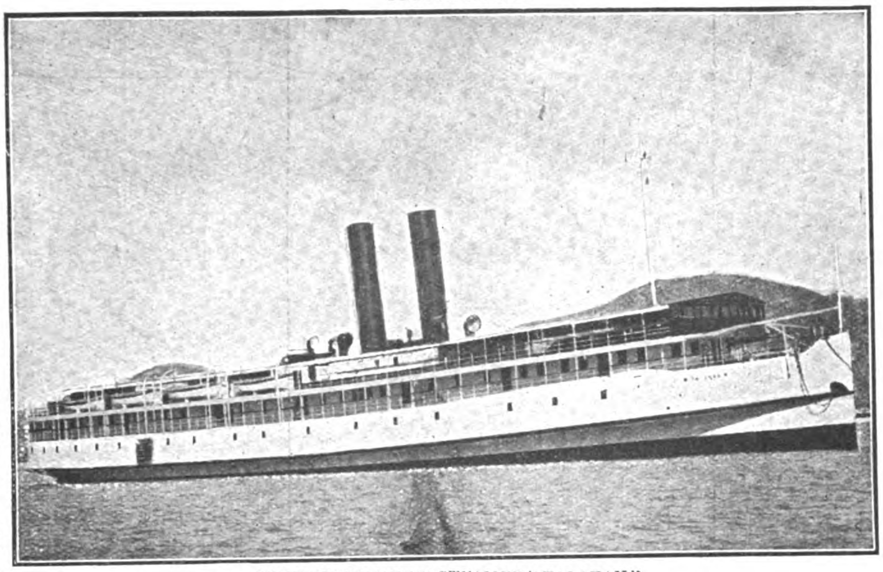
A LARGE STOCK of STEEL and IRON PLATES, BARS and ANGLES, always in hand.

The Company possesses SIX GRANITE DOCKS and TWO PATENT SLIPWAYS and these are equipped for EXPEDITIOUS WORK. Our plant is of the most modern type throughout.

Ship owners and Captains are assured that DOCKING and REPAIRS are carried out PROMPTLY and at MODERATE CHARGES.



TWIN SCREW RIVER STEAMER "TAI SHAN"

Length 290 ft. Breadth 53 ft. Depth 12 ft., fitted with Compound Surface Condensing Engines for a speed of 14.7 knots.
Built and engined complete by the HONGKONG & WHAMPOA DOCK CO., LTD. for the HONGKONG, CANTON & MACAO STEAMBOAT CO. LTD.

The Dimensions of Docks and Slips are as follows :—

| Name of Dock or Slip | Length on Keel Blocks | Entrance Breadth | Depth Over Sill at Ordinary Spring Tides | Rise of Tide | |
|---|---|---|---|---|---|
| | | | | Springs | Neaps |
| **KOWLOON** | Feet | Feet | Feet | Feet | Feet |
| No. 1 Dock, Kowloon . . . | 700 | {86 ft. top / 70 ft. bottom} | 30′ | 7′ 6″ | 3 |
| No. 2 Dock, Kowloon . . . | 371 | 74′ | 18′ 6″ | 7′ 6″ | —— |
| No. 3 Dock, Kowloon . . . | 264 | 49′ 3″ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 1, Kowloon . | 240 | 60′ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 2, Kowloon . | 220 | 60′ | 12′ | 7′ 6″ | —— |
| **TAI-KOK-TSUI** | | | | | |
| Cosmopolitan Dock . . . . | 466 | 85′ 6″ | 20′ | 7′ 6″ | —— |
| **ABERDEEN** | | | | | |
| Hope Dock . . . . . . . | 430 | 84′ | 23′ | 7′ 6″ | —— |
| Lamont Dock . . . . . . . | 333 | 64′ | 16′ | 7′ 6″ | —— |

Please Address Enquiries to the Chief Manager, R. M. DYER, B. Sc., M.I.N.A., Kowloon Dock, Hongkong.

**Telephone No. 13 K. Head Office, Kowloon.**

**Town Office, Queen's Buildings Telephone No. 20, Hongkong**

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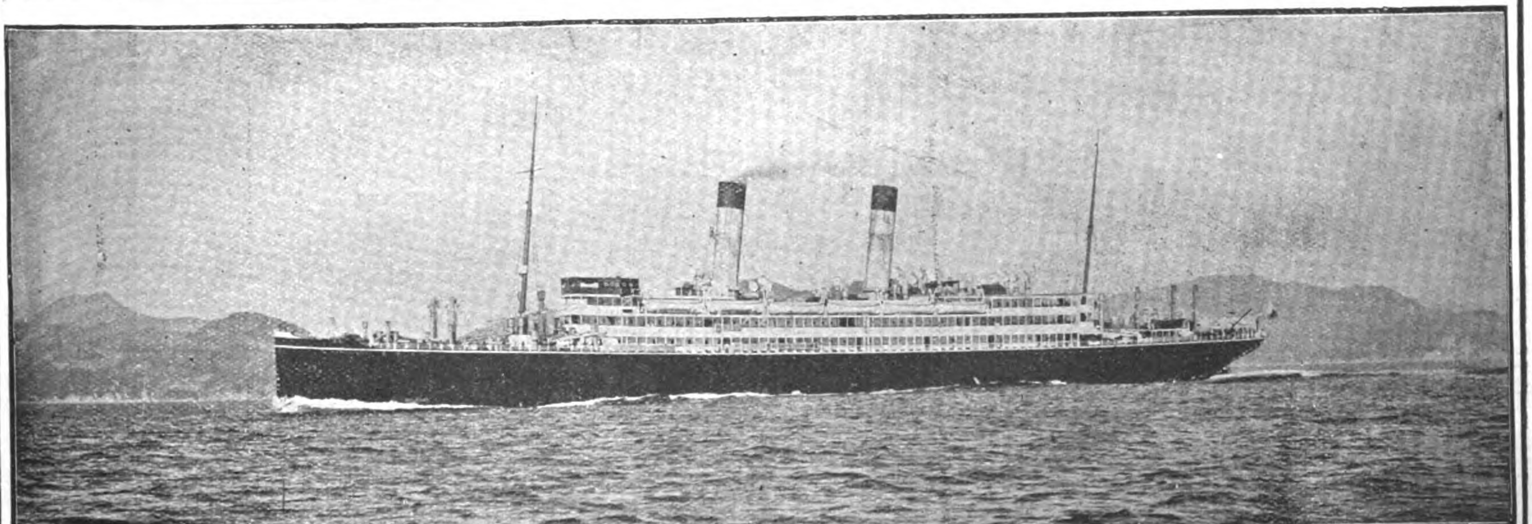
AGENTS. MANILA, P.I.





The "Tenyo Maru," built and engined by the Mitsu Bishi Dockyard & Engine Works, Nagasaki.

# MITSUBISHI DOCKYARDS & ENGINE WORKS, NAGASAKI

**DOCK No. 1.**

| | | |
|---|---|---|
| Extreme Length . . . . | 523 | Ft. |
| Length on Blocks . . . . . | 513 | " |
| Width of Entrance on top . . | 88 | " |
| " " " " Bottom | 77 | " |
| Water on Blocks at Spring Tide | 23½ | " |

**DOCK No. 2.**

| | | |
|---|---|---|
| Extreme Length . . . . . . | 371 | Ft. |
| Length on Blocks. . . . . . | 360 | " |
| Width of Entrance on top . . | 66 | " |
| " " " " Bottom. | 53 | " |
| Water on Blocks at Spring Tide | 22 | " |

**DOCK No. 3.**

| | | |
|---|---|---|
| Extreme Length . . . . . . | 722 | Ft. |
| Length on Blocks . . . . . | 714 | " |
| Width of Entrance, top . . . | 99½ | " |
| " " " Bottom. . | 88½ | " |
| Water on Blocks at Spring Tide | 34½ | " |

THE BEST EQUIPPED SHIPBUILDING PLANT IN THE FAR EAST,

With Special Facilities for Handling the Heaviest Castings and the Repairing or Building of Ships, Engines and Boilers Also Electrical Work.

LARGE STOCK OF MATERIAL, AND FITTINGS ALWAYS ON HAND

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# "Pegasus!" Motor Spirit

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## All Our Motor Spirit

sold in The Far East

is packed in tins and boxes

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This method of packing

enables us to deliver to you

**In Its Original Package, A Motor Spirit With All Its Original Power—Producing Efficiency**

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PATENT

## WATER-TUBE STEAM BOILERS

**11,800,000 H. P. Land-type 3,800,000 H. P. Marine-type installed or on order**

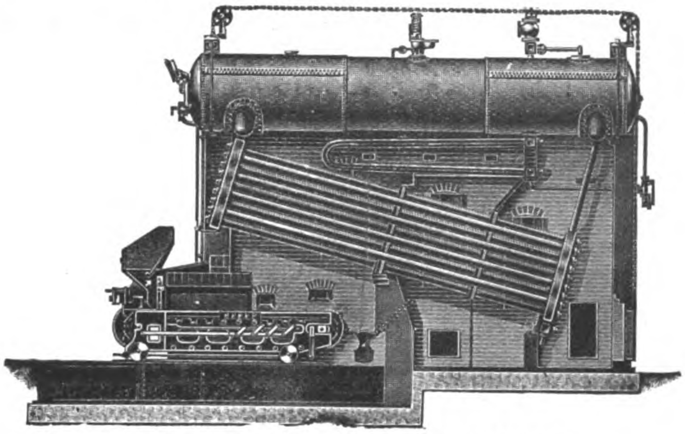
SUPERHEATERS

CHAIN GRATE STOKERS

ECONOMISER

FEED-WATER HEATERS

WATER SOFTENERS AND PURIFIERS



**BABCOCK & WILCOX LAND BOILER, fitted with Patent Superheater and Chain GrateStoker**

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WHITE-FORSTER WATER TUBE MARINE STEAM BOILERS

THE BABCOCK & WILCOX STOKER, of which over 4,300 have been made, is now extensively used throughout the world for burning bituminous and **smoky coal without the production of smoke.** It is especially suitable in the case of Chinese and other coals, which contain a large percentage of ash, owing to the fact that the stoker is **absolutely self-clinkering**, and does not require to be touched with firing tools. It is the **only mechanical grate which, after extensive trials, has proved to be an unqualified success in burning bituminous coal efficiently and smokelessly.**

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**" " " JAPAN, I. I-CHOME, YURAKU-CHO, KOJIMACHIKU, TOKYO**

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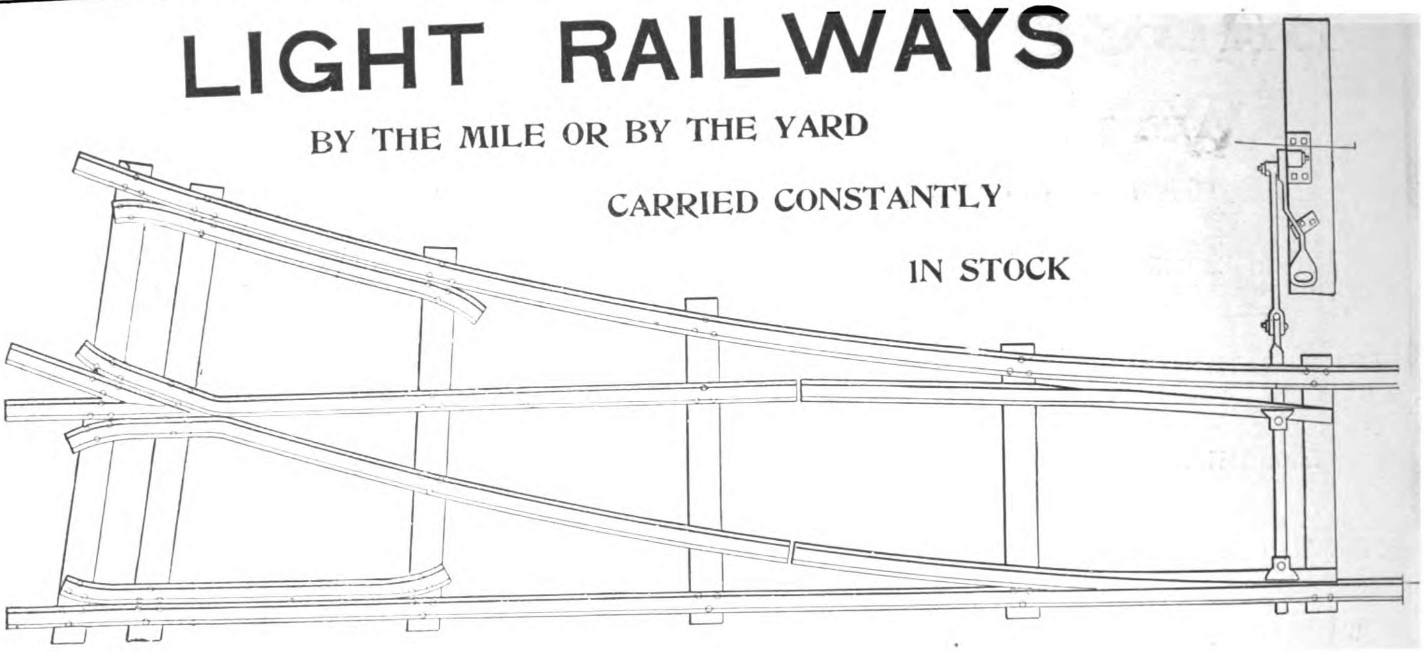

## Complete Equipment for Light Railways

Rails. Fishplates, Bolts, Nuts, Spikes, Points, Crossings, Metallic Sleepers.

FOR IMMEDIATE DELIVERY

**PORTABLE SWITCHES** { as shown in illustration above 2 foot, 6 inch gauge, center radius 24 feet } **CONSTANTLY IN STOCK.**

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**No inquiry too small or Quantity too Large to figure on.**

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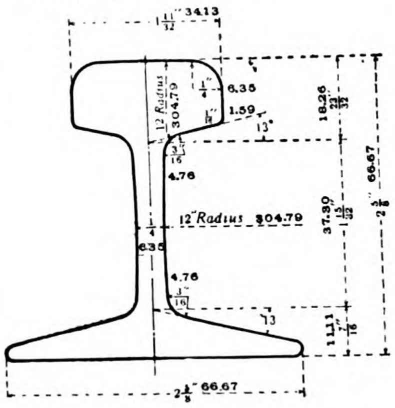
**We have the Stock to Meet Every Requirement.**

RAIL SECTION 2040

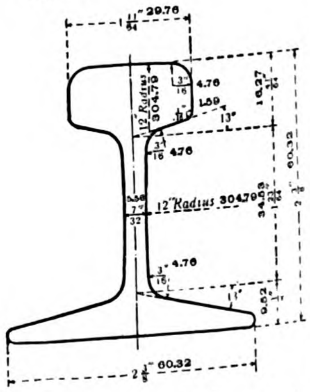


20 lbs. per yard.
9.92 kg. per meter.
31.43 gross tons per mile of single track.
19.84 tonnes per kilometer of single track.
168 ft. of single track per gross ton.
50.4 meters of single track per tonne.

## United States Steel Products Company

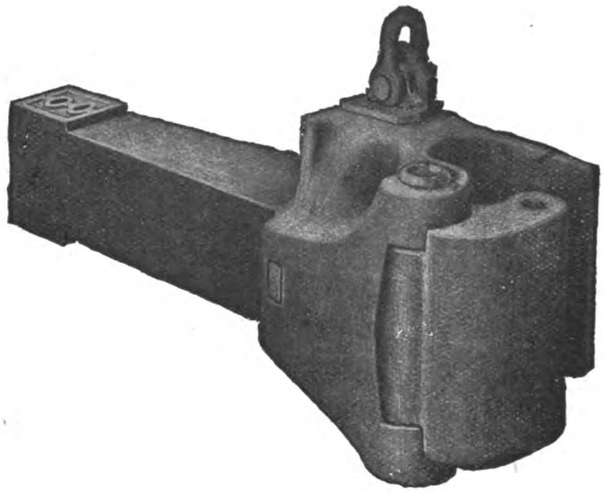
**Union Building, 4 The Bund, Shanghai.**

RAIL SECTION 1640



16 lbs. per yard.
7.94 kg. per meter.
25.14 gross tons of single track per mile.
15.88 tonnes per kilometer of single track.
210 ft. of single track per gross ton.
62.97 meters of single track par tonne.

# The JANNEY-PENN Coupler



THE latest development of the Janney type of M. C. B. Coupling originally introduced and promoted by this company. This coupler has all the simplicity of the early type of the Janney coupler, and also has the up-to-date features of a "Lock-to-the-Lock," "Lock-Set," and a "Knuckle-Opener," and complies fully with all the requirements and recommendations of the M.C.B. Association of the U.S.A.

***Lock-To-The-Lock***—The locking pin cannot climb, being held in the locked position by a trigger the lower end of which projects into a recess in the coupler head, thus preventing accidental uncoupling.

***Lock-Set***—Lock setting is accomplished by the locking block resting on a seat on the inside wall of the coupler head when raised to the uncoupling position, from which seat it is dislodged on the closing movement of the knuckle in the act of coupling.

***Knuckle-Opener***—The knuckle-opener pushes the knuckle open to the fullest range of movement from a fully closed position, or from any partially open position, and its path of movement is such as to insure easy and complete opening of the knuckle.

The lock has an extra large bearing surface in contact with the knuckle in the coupler, being approximately five square inches. No portion of the locking block extends beyond the bottom wall of the coupler.

This coupler has the desirable feature of easy accessibility of parts, thus facilitating the making of repairs.

***Manufactured exclusively by***

## THE McCONWAY & TORLEY CO.

**Pittsburgh, Pa., U. S. A.**

*Cable Address—Torley, Pittsburgh*

**CHINA AGENTS: Fearon, Daniel & Co., Tientsin, China - - Andersen, Meyer & Co., Shanghai, China**

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**NEW PERFECTION HEATERS**
**NEW PERFECTION, BLUE FLAME, WICK, COOKING STOVES**

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Brilliant
Tiger
Eagle

***SOUTH CHINA***

White Rose
Comet
Cock
Eagle

BRANCHES AND DEALERS ALL OVER CHINA
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# CANADA CARBIDE COMPANY,

LIMITED.

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**Manufacturers and Exporters of**

**"S" BRAND HIGH GRADE CARBIDE OF CALCIUM**

**Cable Address: CARBIDE, Montreal, Canada**

**Western Union and A.B.C. 5th Edition Codes.**

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## NOTICE

The undersigned begs to announce that from 14th of August his Consulting Engineering Office has been closed as such on account of his appointment as General Manager of T.E.M.A.

**F. J. BLOM, C.E.**
*Consulting Engineer.*

## NOTICE
### *T. E. M. A.*

Amsterdam-Shanghai. Technische Export Maatschappij Azie.

(Exporters to Asia of Mechanical Appliances).
Allied Houses:

Batavia, Samarang, Soerabaja, Tegal, Djokja, Bandoeng, Medan, Makassar, Buenos Aires, New York.

We beg to announce that we have appointed Mr. F. J. Blom, C.E., General Manager for China.

**P. VERSCHUYL,**
**Dr. J. W. VAN DYK, M.E., C.E.,**
*Directors.*

## NOTICE
### *T. E. M. A.*

The undersigned begs to announce that the temporary office of the above Company will be at 3G. Peking Road. Telephone No. 4711.

**F. J. BLOM, C.E.,**
*Manager.*

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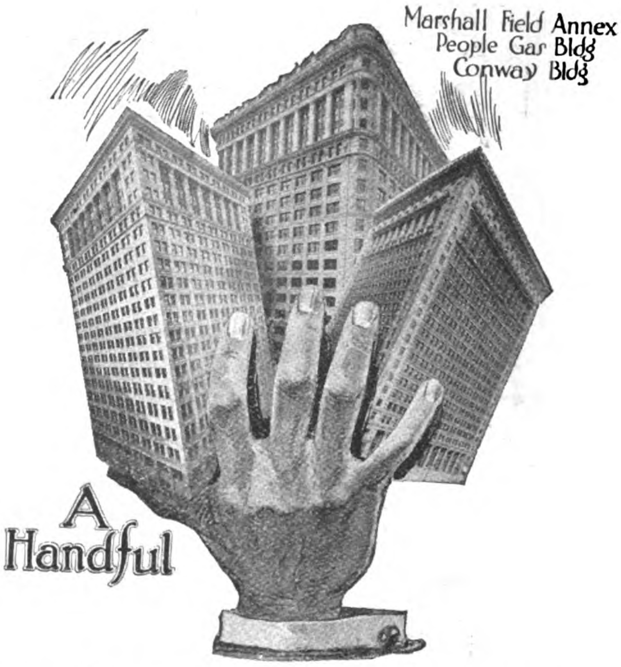


For the interior work on these impressive and very modern steel buildings—the largest and latest in Chicago, U. S. A.—the base for plaster used throughout was

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## Expanded Metal Lath

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It is recognized universally as the *Standard* specification for interior plaster and exterior stucco construction.

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Contains full data for construction of stucco houses and formulas for mixing stucco. Illustrated.

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## North Western Expanded Metal Co.
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# THE GREEN ISLAND CEMENT COMPANY, LTD.

SHEWAN TOMES & CO.

GENERAL MANAGERS, HONGKONG

BEST PORTLAND CEMENT — EMERALD BRAND — GREEN ISLAND CEMENT CO. (LIMITED) — SHEWAN TOMES & CO. GENERAL MANAGERS HONG KONG

# Are You Going to Build?

INSIST ON YOUR ARCHITECT SPECIFYING THE USE OF THE BEST BRAND OF PORTLAND CEMENT IN CONSTRUCTION, IF THE HOUSE OR FACTORY IS TO BE BLOCKS OR TILES, THEY SHOULD BE OF CONCRETE, IF STUCCO, ONLY THE BEST CEMENT SHOULD BE EMPLOYED, IF REINFORCED CONCRETE IS USED, ONLY A STANDARD CEMENT WILL STAND THE TEST, IF YOUR BUILDING IS TO BE FIREPROOF, WATERPROOF, SAFE AGAINST EARTHQUAKE OR TYPHOON, IMPROVING WITH AGE, AND LOWERING THE COST OF INSURANCE, YOU MUST EMPLOY CONCRETE, AND THE BEST CONCRETE CONSTRUCTION IS ONLY SECURED THROUGH THE USE OF

## Green Island Portland Cement

**GREEN ISLAND CEMENT** is supplied in

BAGS=250 lbs. net
CASKS=375 "
IRON DRUMS=375 "

Also

GLAZED STONEWARE; HOUSE DRAINS, SEWER PIPES, AND FITTINGS, PAVING BRICKS, TILES, FIRE BRICKS AND FIRE CLAY.

THE GREEN ISLAND BRAND, HAS BECOME THE STANDARD PORTLAND CEMENT OF ASIA, OWING TO ITS PURITY, UNIFORMITY, AND TESTS.

USED BY H.B.M.'S GOVERNMENT IN HONGKONG, UNITED STATES GOVERNMENT IN THE PHILIPPINES FOR ALL IMPORTANT PUBLIC WORKS.

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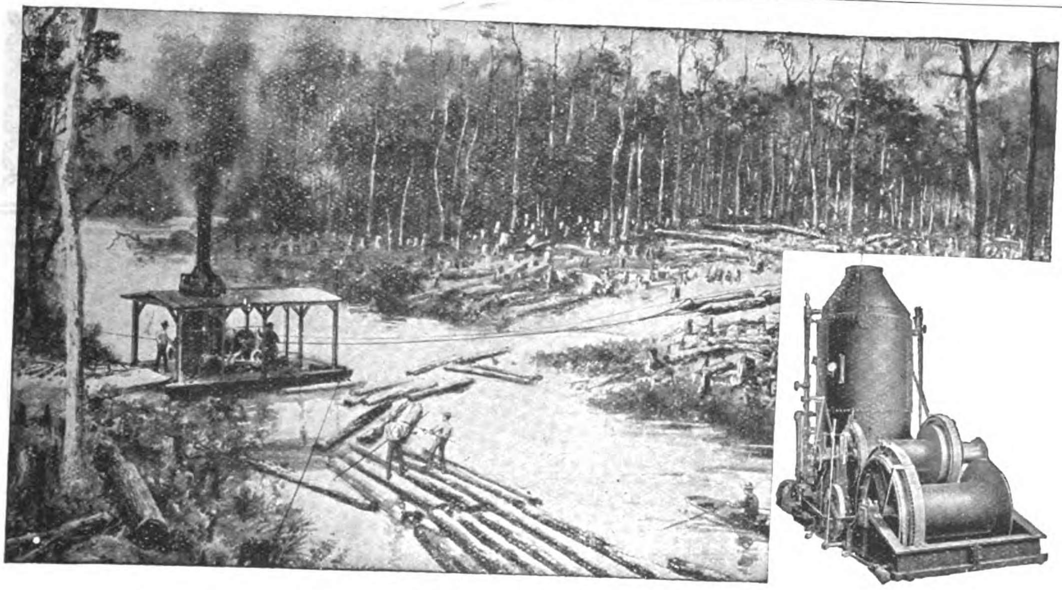
H.B.M.'S GOVERNMENT IN SINGAPORE AND FEDERATED MALAY STATES FOR GOVERNMENT BUILDINGS, RAILWAYS AND HARBOUR WORKS

THE SHANGHAI MUTUAL TELEPHONE BUILDING.
(DAVIES & THOMAS, ARCHITECTS)
Green Island Portland Cement Used Exclusively in its Construction



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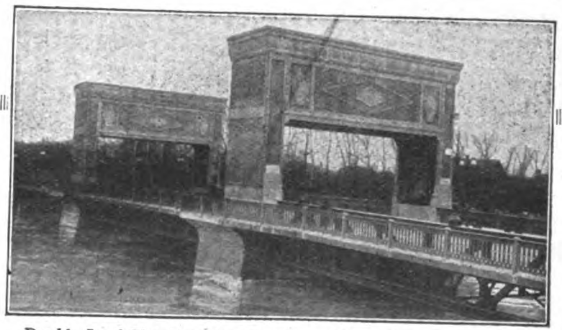

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**ONE ORGANIZATION**—The manufacture of "NATIONAL" Pipe is controlled within one organization of highly trained men, insuring an unvarying quality.

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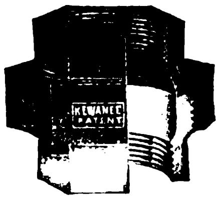

The Air-tested Union with no Inserted Parts
The "Safety-First" Union

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**1—Brass to Iron Thread Connection—no corrosion. 2—Brass to Iron Ball Joint Seat—no gasket. 3—Compressed Air Test Under Water—no defective fittings. 4—Solid Three Piece Construction—no inserted parts. 5—Easily Disconnected—no force required.**

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Expert refiners prepare each and every grade so that it will give the highest possible amount of efficiency under working conditions.

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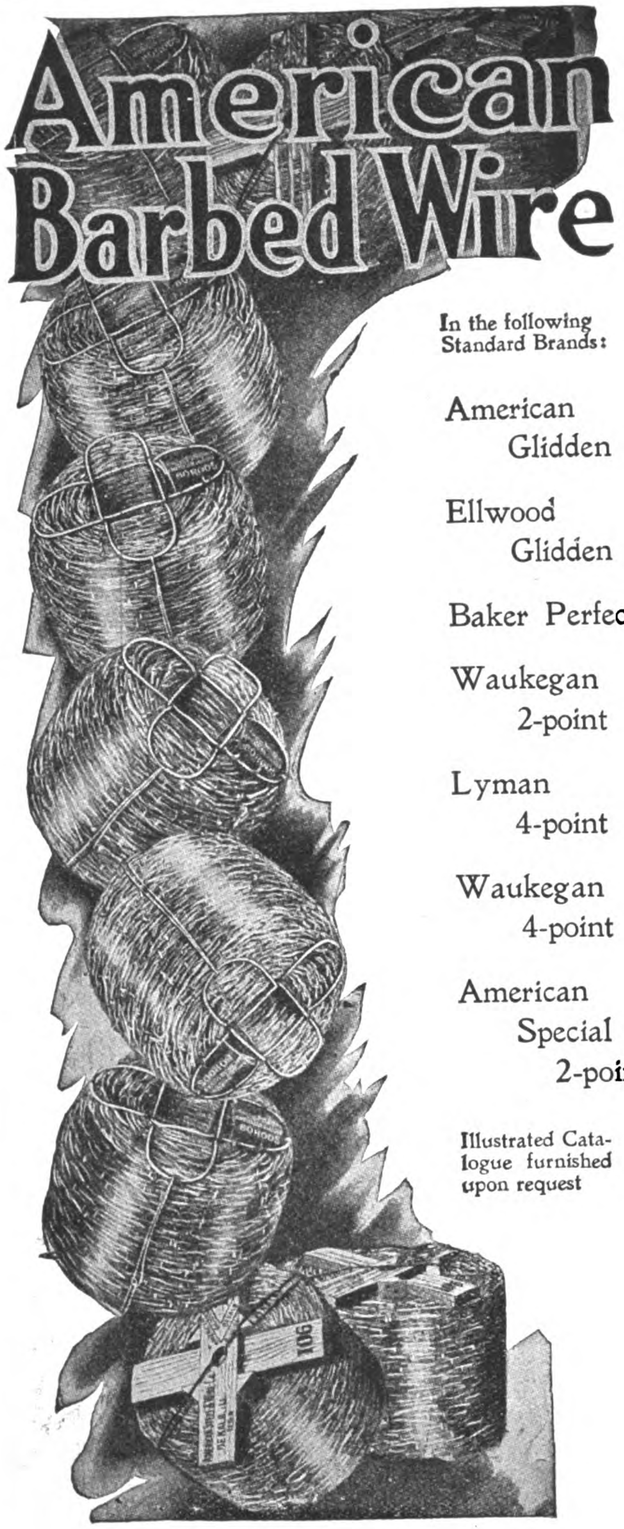


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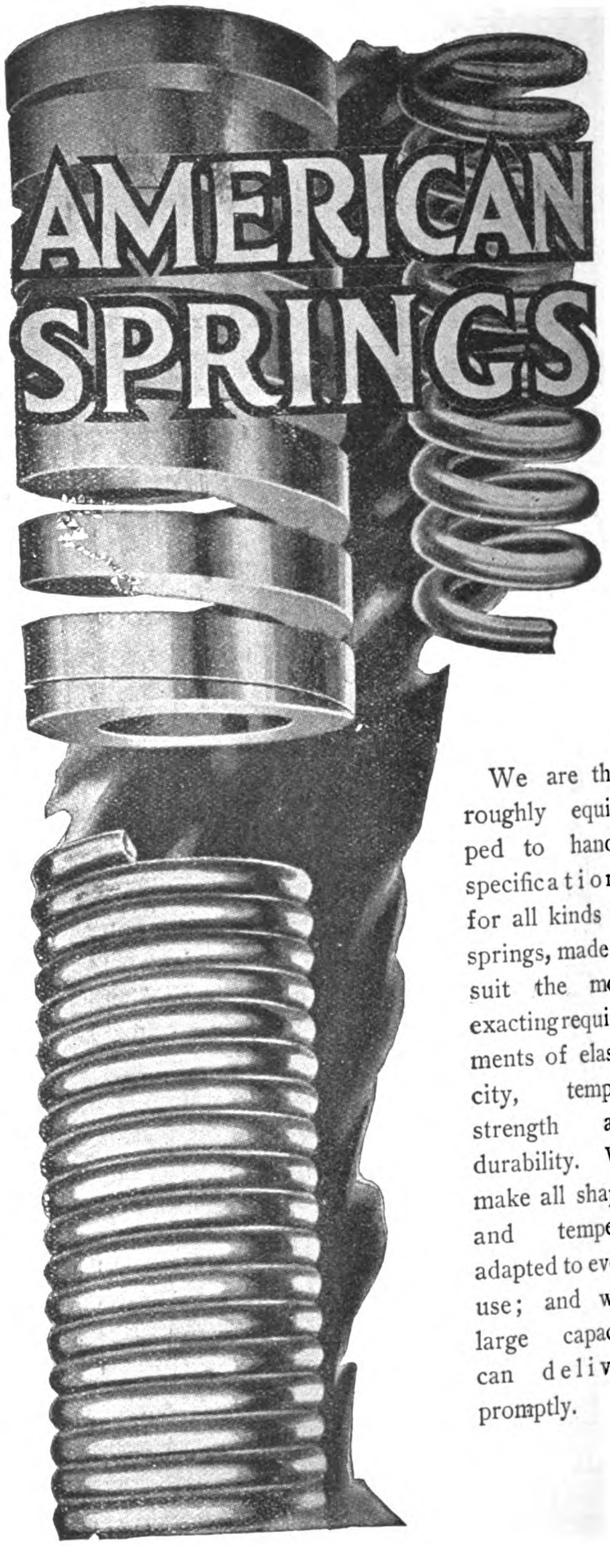


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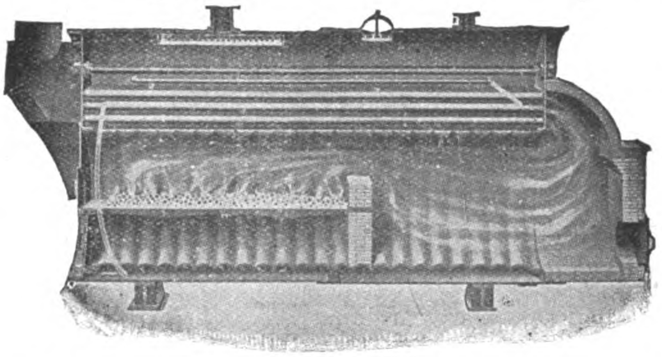
# United States Steel Products Co.

**4 THE BUND, SHANGHAI** **Telegraphic Address: "STEELYARD" SHANGHAI**

# *Freeman's Internally Fired Boiler*

*Also Manufacturers of Horizontal Return Tubular Boilers, Scotch Marine Boilers and Water Tube Type*



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This type of Internally Fired Boilers is the most compact and efficient boiler that is made. It is portable, occupies little space, requires no brick walls and is the most economic boiler to operate. We recommend it highly for Sugar, Tea, Rice Plantations and General Power Plants. Send for catalog and prices.

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2¼ inch by No. 9 Gauge

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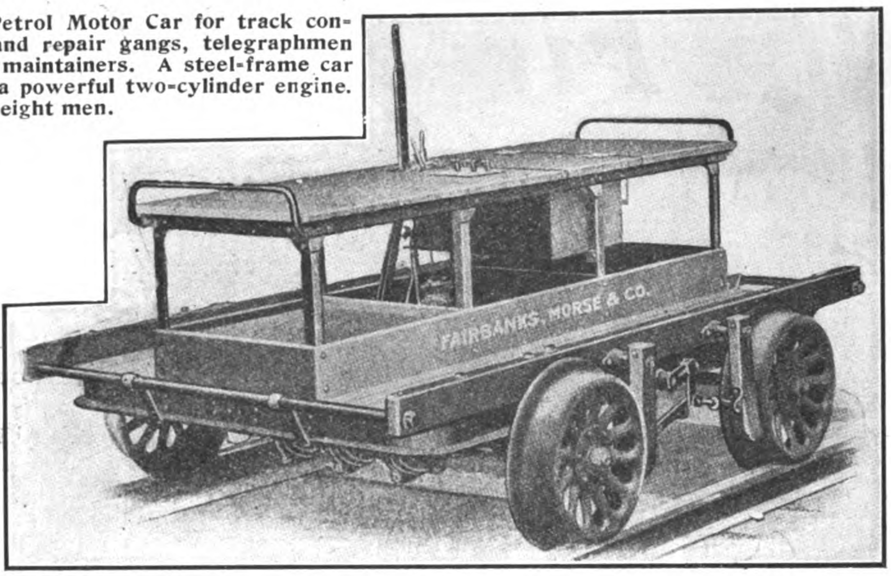


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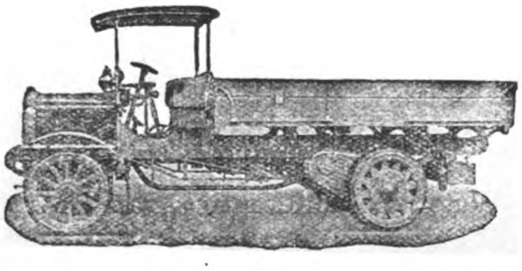

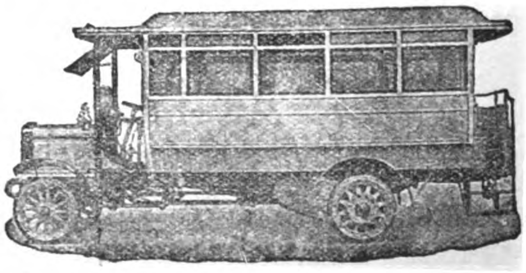

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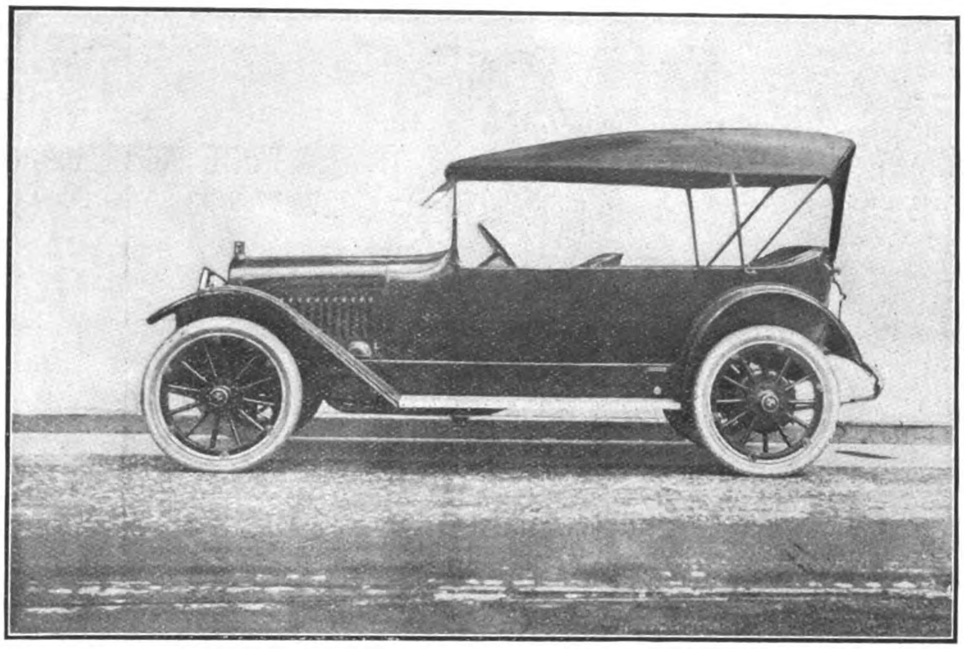

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¶ We believe the Hupmobile to be the best automobile of its class in the world and what we believe Hupmobile owners all over the world know.

¶ That is Hupmobile reputation.

¶ Ask anyone who knows cars, whether Hupmobile owner or not, and he will tell you two things.

¶ First, that the Hupp Motor Car Corporation has never brought out a poor car.

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# 美國器具工廠公司廣告

The American Tool Works Company

事半工倍物美

左圖為亞美利根牌之活擺鑽機鑽三吋之闊十四吋深之實體鋼質每分鐘可轉九十次速率之轉柱用以鑽物僅需添進萬分之七十二吋

亞美利根牌之活擺鑽機並無弱點因材料精美且建造黏實故生力頗大

美國各大工廠均奉亞美利根牌為活擺鑽機之模範故購用之且不待商酌而逕源源定購其效力之大可想而知矣

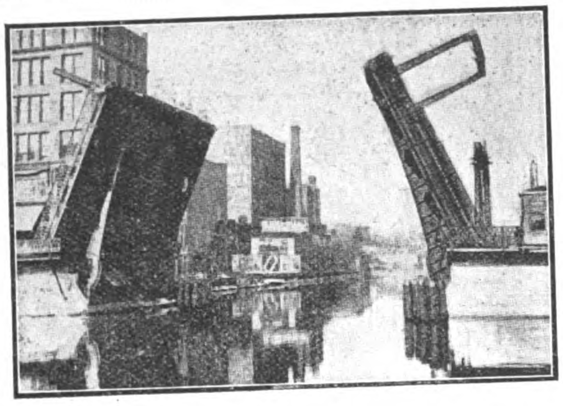
諸君若欲知最近時之活擺鑽可來信示知以便將說明書奉贈

本公司亦造車床刨機具形機鑽機等物

本公司開設美國辛辛耐的省

## 美國司屈氏吊橋公司廣告

The Strauss Bascule Bridge Co.



本公司專造搖汽筒空樞吊橋及直接升降各橋專為康莊鐵道以及可航行之海道而立計全地球所造者不下一百五十具最長最大之跳開橋其建築仿法悉本于司屈氏之圖樣即小而至于居家之過街及裝飾品用之物亦取法于司屈氏

諸君若欲照片樣本可來函索取無不寄奉

本公司總行開設美國雪加可省南米西干通路第一百另四號

本公司擬在遠東聘請代表

## 白賽老氏公司廣告

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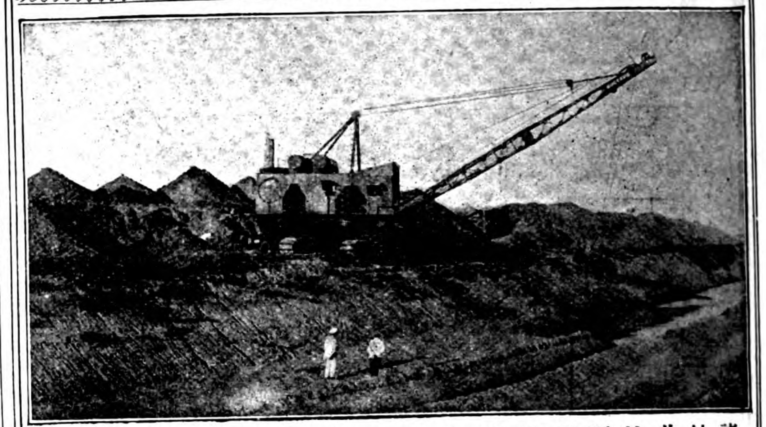

諸君欲圖水利請用白賽老氏之聯結鏈挖鑿機

此圖為第十四號白賽老氏聯結鏈挖鑿機有六十呎之機杠及二立方碼之桶挖鑿俄國高加索司之老河者細閱此圖則該機乃裝置於牽拉機上以便運動此機之生火力用油用柴均可

此機為俄政府所有之物

白賽老氏聯結鏈挖鑿機專備挖掘陰溝疏通河道裝卸礦苗存積物及開金礦裝載石子建造世界各處之鐵道

是項機器用汽用電用油均可使其運動

本公司亦造各種大小之汽鏟電鏟挖泥機及聯結鏈挖鑿機器

總公司開設美活司考信

分公司 英國章思名司得 暹羅國及馬來聯邦

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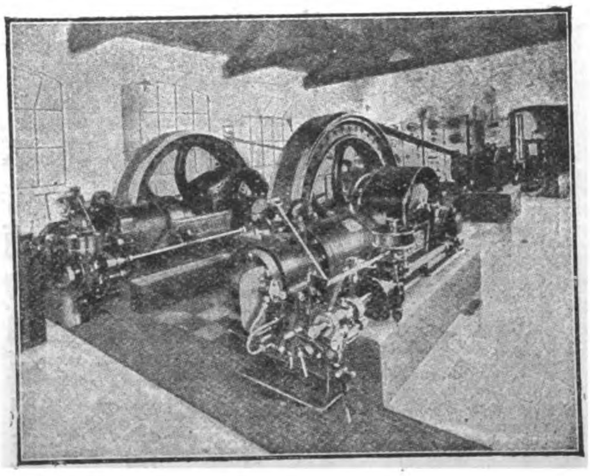
本公司創始於一千八百六十八年

本公司亦造生油汽機

半狄色耳平形式之機器其用油與狄色耳同

自十一匹輪盤馬力至一百六十四輪盤馬力

此項機器無庸水注入



此為電氣房內裝有費耳庭吸力煤氣汽機及生油汽機兩相並立之圖

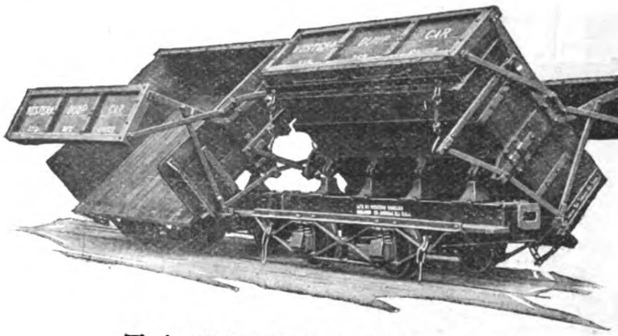
製造吸力煤氣汽機及全副機件用白煤或焦煤均可業於此者不下數千人汽機自十一匹輪盤馬力至三百匹輪盤馬力

本公司亦造橋樑底標量制器俱單輪及第三軸枕平衡曲拐

# 西方輪軸剷物機公司廣告

WESTERN WHEELED SCRAPER COMPANY

此為六立方碼之車以驢兩頭拖拉在污泥天工作之圖



此圖為西方五碼卸貨車為人所重視曾經試驗實有效用

機器較省於人工此人所共知也本公司之西方卸貨車可省却人工不少可為諸君省費諸君曷勿試用之

諸君欲興築土工以及挖鑿等事若欲事半功倍除非用西方卸貨車因價廉而物美故也且該卸貨車可隨工作之大小而製成自半立方碼至三十方碼○其大號者卽以空氣卸貨為建造鐵道最有價值之機器開鑿巴拿馬運河用此機器有九百輛之多○其小號者則專以卸輕巧之貨物用小汽機拖拉甚為便宜卽用牛馬亦較一工人卸貨快速易辦也上圖為本公司之一碼半西方車正在卸貨以驢子拖拉一千二百呎

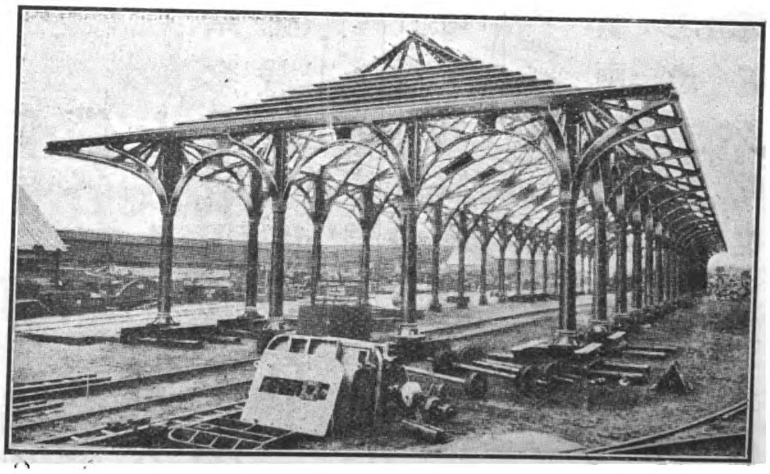
西方卸貨車全球著名亦為全球所購用諸君若欲知詳細請來信索取圖樣可也

本公司開設美國伊立拿省奧列羅

# 海特雷脫生公司廣告

Head, Wrightson & Co., Ltd.

本公司有大廠三所專造煤礦場及各礦場所用之物及裝煤船貨車起重機風箱冶汽爐船塢門等橋坑總齒輪鋼質貨車屋頂煙筒油池之類

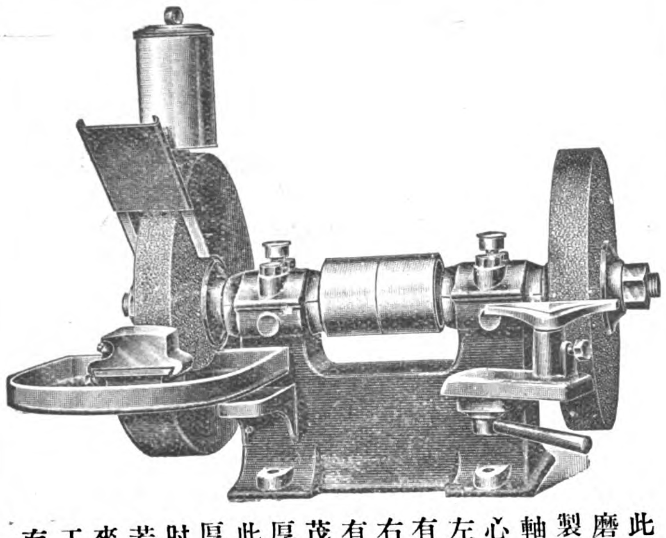


此圖乃香港之車站其屋頂為本公司所建造

本公司為英國大廠之一每年出鑄件十萬噸出機器一萬七千噸且為中國印度日本包辦各項工作

## 倫敦愛茂來工廠有限公司廣告

The London Emery Works Co., Ltd.



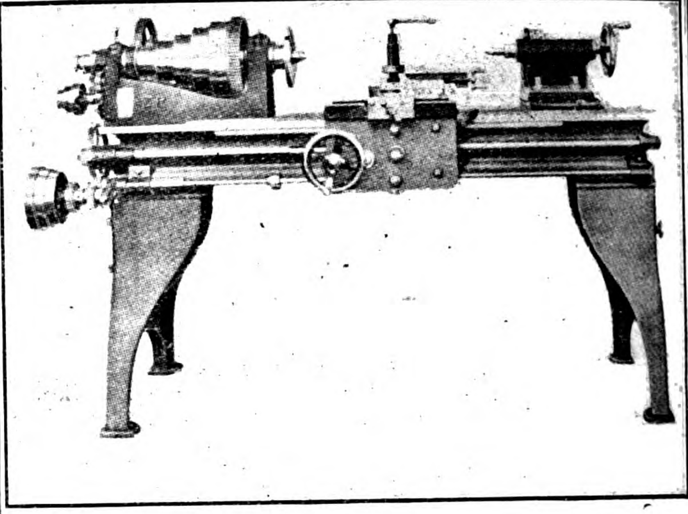
此圖爲雙頭愛茂來欖式磨機其全體均爲生鐵所製軟鋼磨心直徑一寸其軸枕均爲白色金屬類磨心傍有緊鬆之滑車排於左者可磨潮濕之物因配有水槽碗架蓋頭及墜俱右邊則配有普通磨件尙有最好質地之地球牌愛茂來輪盤兩俱大十二吋厚一吋半

此項磨機亦可大十四吋厚二吋及大十六吋厚二吋之輪盤

若欲知圖樣或說明書可來函索取

工廠開設英京倫敦土丁南英雄工廠

## 用電氣以節耗費



電氣一物利用甚薄用以裝修各項機器非特工作較人力爲速而耗費亦可節省因其出貨多而成事易也凡各機器廠欲裝置電氣馬托或鑽頭磨刀機無論活動與否均可使之流利活潑所需電力或交流或直流及電鎊之多寡均當隨意裝配賜顧諸君幸垂鑒焉

德國蜀赫廠啓

Schuchardt & Schütte

## 勒克洛炸藥

又名勒辣司丁泡特係**開山開礦用最大爆力之炸藥**其質共有二類一硬質一流質兩種未參合時分裝二處決無炸裂之患并無須多費存放在火藥棧倉內祇置放乾爽地方不論何處均極相宜此藥參合後**較之別種炸藥更爲穩當**藥粉裝法用一布捲筒對徑六分或至二寸長六寸半或至八寸爲度即可應用製造廠林洛泡特公司在美國紐約華爾街一百零六號

Rendrock Powder Co.

## 美國舊金山
## 瓦爾根製冰機器廠

Vulcan Iron Works

圖爲製冰機之一種

花色繁多不及備載

**本廠專造各式製冰機器運銷各地蒙購辦諸君謬加推譽稱爲靈便合用本廠自當精益求精以期仰副　雅意現在製備各種新式機器或大或小花樣俱全如欲取閱樣本函索即奉特此佈告**

電碼 "Vulcan" San Francisco

# 交通銀行廣告

BANK OF COMMUNICATIONS

本銀行資本一千萬兩專辦銀行一切交易各項存款無論定期活期其利息均照議給付并滙劃中國各處以及押款等事

總行開設北京

分行東三省 牛莊 奉天 長春 吉林 哈爾濱 遼陽 蓋平 孫家台 鐵嶺 錦縣 新民屯

直隸 北京 天津 張家口 保定 海甸 順德 唐山 北通州 豐鎮 勝芳 石家莊

山西 大同 陽高

陝西 澠池

山東 濟南 濟寧 棗莊 烟台 德州

河南 開封 焦作 周家口 漯河 道口 彰德 鄭州 信陽州 洛陽 鄱陽

江蘇 上海 蘇州 無錫 鎮江 揚州 浦口 板浦 徐州 清江浦

浙江 杭州 寧波

安徽 蕪湖 蚌埠

江西 九江

湖北 漢口 宜昌 沙市

湖南 常沙 益陽 衡州 湘潭 常德 寶慶

廣東 廣東

特別處新列后 熱河 歸化 香港 新加坡 大連 等等地方

總經理 張思仁 史拉克

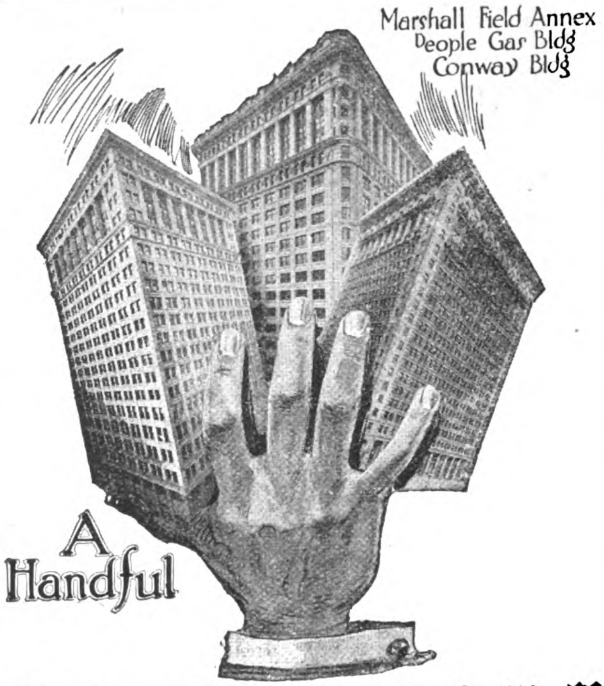
副經理 徐寶琪

仝啓

# 西北展張鐵片公司廣告

North Western Expanded Metal Co.

本公司製造哪白兒展張鉄片專爲近世築造之鋼屋內部所用以上之圖爲美國芝高哥城最大最新近之大廈其內部及底盤均爲本公司所製之哪白兒展張鐵片條板所造蓋以之作底盤其價甚廉以之作墻則耐久因哪白兒牌之條板爲惟一之建築品且爲全球所公認推爲內外建築特別品之標準若用於熱帶處

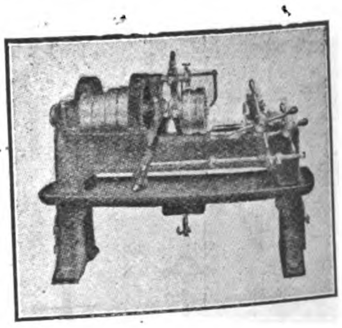



所用以作墻及天花板底則更相宜蓋其性耐久而不曲且不笨重易於運輸且避水患此項展張鉄片條板業經由五洲各大建築家實地試驗防熱避風火暴雨等危險實爲建築家所不可少之物

今敬告建築家若欲建造房屋無論何時何地何物先請察驗哪白兒牌之展張鉄片條板本公司備有說明書請來函索取可也

# 英國約書亞西潑有限公司

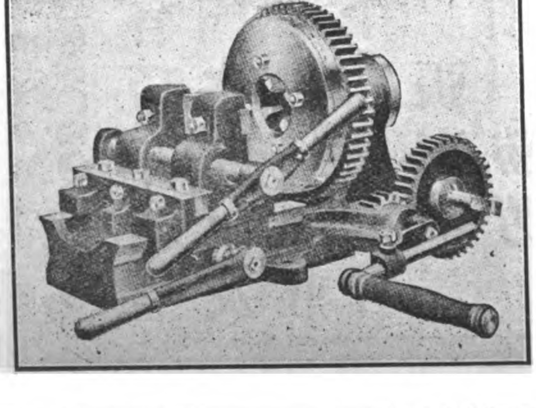
Joshua Heap & Co., Ltd.



本公司專造製螺絲機器此圖爲二吋單頭自動製螺絲機器爲多頭製螺絲機器之一曾註册立案爲近世最省工力之機器備有柄頭及自動開機連於螺形頭上及自動關機幷配製螺絲各俱無不靈動

本公司所出之註册鋼質螺絲模型爲市上所罕有蓋質地堅實螺絲板易於拆卸且全體皆爲良工所製並無發條或輕脆之料作摻雜其間

此圖爲改良通用之製螺絲機器可製螺絲管彎曲短小之件如對徑二吋大小之物或釘梢對徑二吋半等物均可製造近年來銷數已達二千五百架其大者如對徑八吋之物亦可製造此項機器電力與人力均適用若欲知詳細請來函索取目錄爲禱



# 橫濱正金銀行廣告

Yokohama Specie Bank, Limited

本銀行創設於紀元一千八百八十年總行開設日本橫濱資本日洋四千八百萬元收足資本日洋三千萬元公積日洋一千八百五十萬元英京倫敦各銀行如倫敦及司密夫聯合銀行倫敦聯會股票銀行及派耳銀行均爲本行之經理今將分行及經理處開列如下

安東縣　孟買　加耳谷塔　長春　大連　檀香山　香港　漢口　神戶　倫敦　來因司　遼陽　奉天　紐約　牛莊　長崎　大坂　旅順　北京　舊金山　東京　鐵嶺　天津　青島　哈爾濱　勞山及耳司

上海亦設分行　活支及定期存款利息均有銀兩洋圓均聽尊便　匯票可通日本高麗臺灣及中國各重要地方幷歐洲印度美洲各通商處所并辦理各種銀行所辦各事宜

經理科大麥啟

# 克耶鎖鍵工廠露佈

Joseph Kaye & Sons Ltd., Lock Works, Leeds.

本公廠專製車門鎖鍵滑門門門精巧門鐶門鎖及門門等以應各種用品且製造鋸齒形無縫之純鋼油管承經註册專賣爲英國之出品供應於英國水軍者不下六萬只大西鐵路大北鐵路蘭克省及雅克省間之鐵路倫敦及西南鐵路南斐洲及印度國有之鐵路均用此純鋼油管盛油也倘承不棄請來信定購是幸

工廠開設於英國离池

# 中國銀行廣告

THE BANK OF CHINA

本銀行於民國元年奉　政府命令設立兩年以來信用昭著總行設於（北京）分設（直隸省）天津　保定　邢台　灤縣　唐山　滄縣　濮陽　邢縣　磁州（山東省）濟南　青島　煙台　藤縣　濟寧　周村　惠民　益都　臨清　臨沂（河南省）開封　周口　彰德　漯河　信陽　道口（山西省）太原　運城　歸化城（江蘇省）上海　南京　鎮江　無錫　蘇州　揚州　清江浦（安徽省）安慶　蕪湖　大通　徐州　下關　蚌埠（江西省）南昌（福建省）福州　南台（浙江省）杭州　寧波　蘭谿　嘉興　湖州　溫州　紹興（湖北省）漢口　沙市　宜昌（廣東省）廣州　江門　汕頭　瓊州　韶州　潮州（東三省）奉天　營口　安東　錦縣　大連　鐵嶺　長春　吉林　哈爾濱　齊齊哈爾　等處亨有發行鈔票代理國庫之特權並辦理匯兌買賣生金銀往來存款定期存款抵押放款貼現放款代各公司商號或個人收取本埠及他埠票據款項保存有價證券及一切貴重物件至匯兌一項無論通商大埠蕞爾遐陬凡本行已經分設者均屬便利所收匯費無不格外克已以副光顧諸君之雅意再本行發行鈔票準備充足凡完糧納稅發俸放餉官款出納商民交易以及應付鐵路輪船郵電一律通用現爲便利商民行使本行鈔票起見特於北通縣（海甸鎮）設立兌換所並於本京內外城商店繁盛之區委託殷實商號代兌本行鈔票如有多數鈔票請逕向（西交民巷）本行兌換可也茲將代理兌換處所開列於下

▲▲注意▼▼（東四牌樓）寶源銀號（安定門）會源銀號（東珠市口）隆茂源銀號（騾馬市）恆裕金店（西河沿）仁昌金店（後門）永通誠布店（新街口）益泰成布店（西單牌樓）和順公布店（後門）平易銀號（西單牌樓）益大銀號（又珠寶市爐房十家）恆盛銀號　同元祥爐房　德順號　聚起號　祥瑞興記　源豐號　復聚號　萬興號　全聚厚記　聚盛源爐房　再本總行營業時間開列如下　陽曆四月一日起至九月底止每日上午九點鐘起至下午四點鐘止由陽曆十月一日起至三月底止每日上午十點鐘起至下午四點鐘止

# 英國海來司溫鋼公司廣告

Halesowen Steel Co., Ltd.

本公司專造鋼質砌機有HS牌號均為自動機器脫力脫車床等等所製成若欲定做其尺寸不誤大小隨便現下存貨長自九呎至十呎若圓形或六角形或方形均可製造并製各種輪軸不拘大小長短均可定造若承賜顧定購照式製成無不完美特別本公司每月出貨有二萬之數

本公司開設英國海來司溫

# 美國反白司公司廣告

Fairbanks-Morse Railway Motor Cars

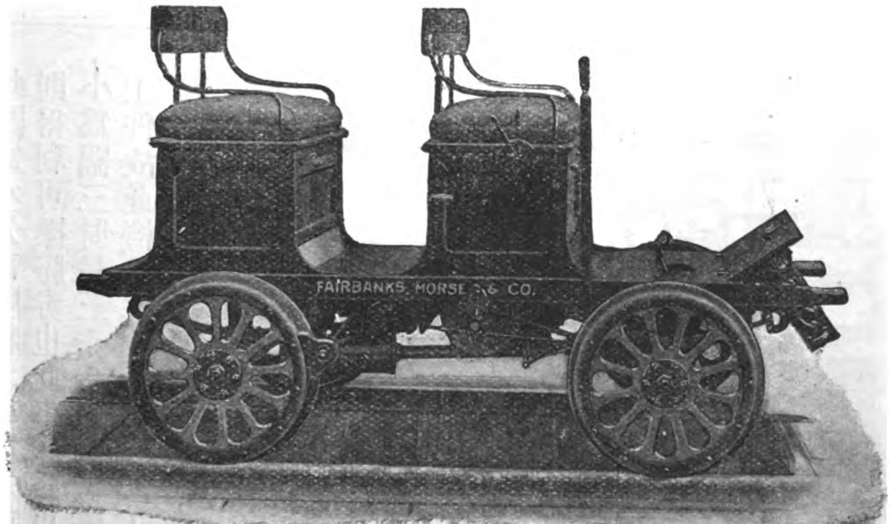
本公司專造鐵路材料煤油馬達車手車推車自行車豎管煤棧轉盤活動橋抽機用煤油或礦蠟油或火酒均可

并製軌道規水平尺牛欄軌道器俱以及各種材料以上所列各種其製造之原料為美國及他國并各植民地之鐵道取之為標準者也

請來索目錄第九五六RS

本公司開設美國芝加哥

經理處　上海信亨機器洋行　香港天祥洋行　小呂宋太平洋商務洋行　横浜安德烈哲治洋行　加力革培克列司督洋行




反白司煤油馬達車為查閱鐵軌之用鐵路人員乘坐最為合宜蓋此車駕駛甚易車架為鋼質所製容四人長可隨意三十六吋或過此呎吋亦可

本公司製造煤油馬達車全部專為查閱鐵軌信號分段以及橋規

# 華愛德公司

本公司代聘全球著名工程師專包辦並經理各種工程兼各式工程物料已歷有年所成效昭著為各國官商各界所推許如蒙 惠顧請向下列各經理處接洽可也

美國紐約滙業處四十三至四十九號
英國倫敦克洛克路九號

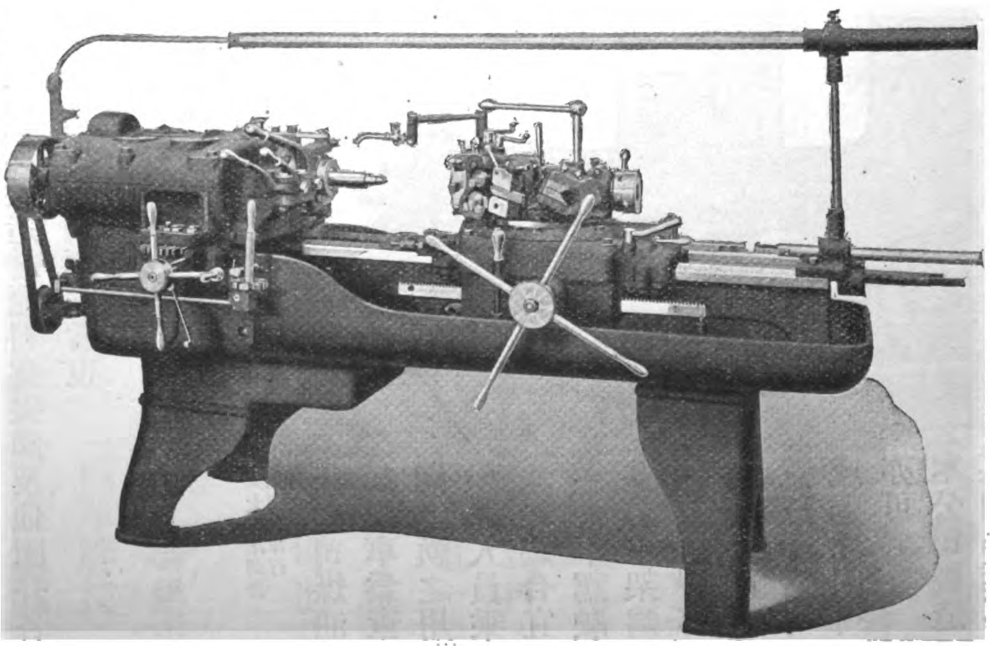
J. G. White & Company



# 羣司蘭姆生機器公司

Jones & Lamson Machine Company.

此圖為本公司所特之車床若能習學此機完美則得利可操勝劵也此車床為車塔平面機其大小為闊三吋長三十六吋專做鐵條柄軸等各種工件故此機及其作用 能使工人幷機器加增出品 因用是項機器不必購用價值高貴之小另件配製工作也



總之製造此種車床之目的 即費一文錢得一文錢之利於購者有莫大之利益

欲知詳細章程請來函索取不費郵資

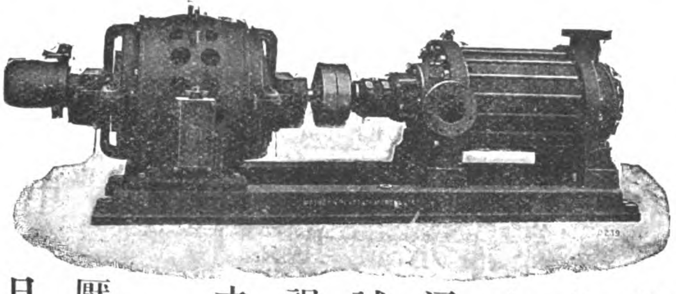
本公司開設 美國活忙脫省司不林飛而特
英國倫敦維多利亞街九七號

本公司代聘全球著名

# 麥脫拍來脫輪盤抽機公司

Mather & Platt, Ltd. Turbine Pumps.

輪盤抽機為本公司所發明且已有四十年之經驗故所出之抽機愈製愈精購用者無不樂用且無論高低均適於用此項抽機之動力或由馬達小輪汽輪速率之汽機或皮帶或繩索之力均可抽動



且一經試用則耐久非常不必再行查驗本公司所出之抽機通行於各處極多行試多年從未拆卸開視因本公司所製造之抽機美備洽意也　此項抽機有自動壓勻之力裝製齊備且可增減機內之空穴價格便宜若欲購用而知詳細章程者請來函索取目錄上圖為六筒之抽機　頭長六百十二尺每分鐘可吸六百五十加侖每分鐘可轉一千四百五十次則所動之力乃藉馬達也

# 交通部吉長鐵路客車時刻表

Kirin-Changchun Railway.

民國五年七月一日改訂

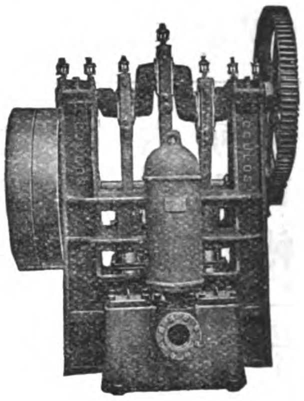
## 由吉林至長春頭道溝（上行車）

| 站名 | 到/開 | 第四次 客貨車 | 第二次 客車 |
|---|---|---|---|
| 吉林 | 開 | 上午六·二〇 | 下午二·一五 |
| 九站 | 到 | 上午六·四三 | 下午二·三五 |
| 九站 | 開 | 上午六·四八 | 下午二·三七 |
| 孤店子 | 到 | 上午七·〇三 | 下午二·五三 |
| 孤店子 | 開 | 上午七·〇五 | 下午二·五四 |
| 樺皮廠 | 到 | 上午七·二三 | 下午二·〇七 |
| 樺皮廠 | 開 | 上午七·三〇 | 下午三·〇九 |
| 趙家店 | 到 | | |
| 趙家店 | 開 | 上午七·五八 | 下午三·三一 |
| 土們嶺 | 到 | 上午八·一八 | 下午三·五〇 |
| 土們嶺 | 開 | 上午八·二四 | 下午三·五六 |
| 營城子 | 到 | 上午八·四八 | 下午四·一八 |
| 營城子 | 開 | 上午八·五〇 | 下午四·二〇 |
| 下九臺 | 到 | 上午九·〇三 | 下午四·三一 |
| 下九臺 | 開 | 上午九·〇五 | 下午四·三四 |
| 飲馬河 | 到 | 上午九·二〇 | 下午四·四八 |
| 飲馬河 | 開 | 上午九·二一 | 下午四·五〇 |
| 卡倫 | 到 | 上午九·五五 | 下午五·一二 |
| 卡倫 | 開 | 上午九·五七 | 下午五·二四 |
| 長春 | 到 | 上午一〇·三一 | 下午五·五五 |
| 長春 | 開 | 上午一〇·三七 | 下午六·〇〇 |
| 頭道溝 | 到 | 上午一〇·四七 | 下午六·一〇 |

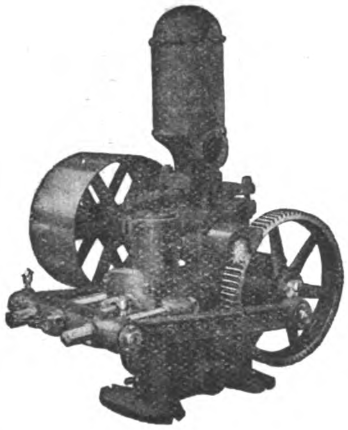
## 由長春頭道溝至吉林（下行車）

| 站名 | 到/開 | 第一次 客車 | 第三次 客貨車 |
|---|---|---|---|
| 頭道溝 | 開 | 上午七·三〇 | 下午二·五〇 |
| 長春 | 到 | 上午七·三八 | 下午二·五八 |
| 長春 | 開 | 上午七·四一 | 下午三·〇五 |
| 卡倫 | 到 | 上午八·一二 | 下午三·二九 |
| 卡倫 | 開 | 上午八·一四 | 下午三·四三 |
| 飲馬河 | 到 | 上午八·四六 | 下午四·一五 |
| 飲馬河 | 開 | 上午八·四八 | 下午四·一八 |
| 下九臺 | 到 | 上午九·〇三 | 下午四·三三 |
| 下九臺 | 開 | 上午九·〇四 | 下午四·三八 |
| 營城子 | 到 | 上午九·一六 | 下午四·五〇 |
| 營城子 | 開 | 上午九·一八 | 下午四·五三 |
| 土們嶺 | 到 | 上午九·四〇 | 下午五·一八 |
| 土們嶺 | 開 | 上午九·五〇 | 下午五·二六 |
| 趙家店 | 到 | | |
| 趙家店 | 開 | 上午一〇·一〇 | 下午五·四五 |
| 樺皮廠 | 到 | 上午一〇·三一 | 下午六·〇九 |
| 樺皮廠 | 開 | 上午一〇·三三 | 下午六·一四 |
| 孤店子 | 到 | 上午一〇·四六 | 下午六·三〇 |
| 孤店子 | 開 | 上午一〇·四七 | 下午六·三三 |
| 九站 | 到 | 上午一一·〇三 | 下午六·四九 |
| 九站 | 開 | 上午一一·〇五 | 下午六·五三 |
| 吉林 | 到 | 上午一一·二五 | 下午七·一五 |

# 美國顧爾機器廠

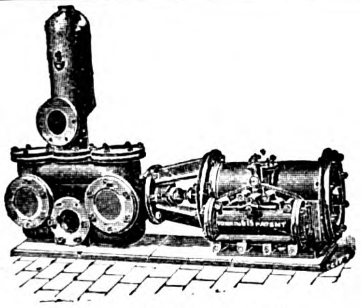


本廠開設已久爲中外各國所馳名專造各種大小抽水幫浦其三角抽水機爲尋常各廠家所最爲合用之機尚有如保險公司所用最爲靈巧便利之轉動抽水機此項機器甚爲輕便備爲消防之用尤爲合宜故凡保險公司俱有備置因其得輕便之利也其餘如自來水廠船廠各機器廠並礦井內外所應用之大小各式抽水機器無不俱全本廠係專造各項抽水幫浦故比他家式樣更多製造尤爲完善凡中外各國之賜顧者悉知本廠機件之精良造具之美備也欲知詳細情形請移玉至本行接洽可也

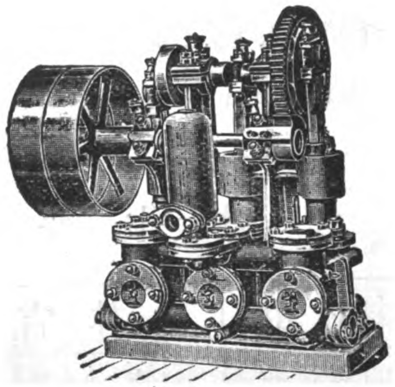


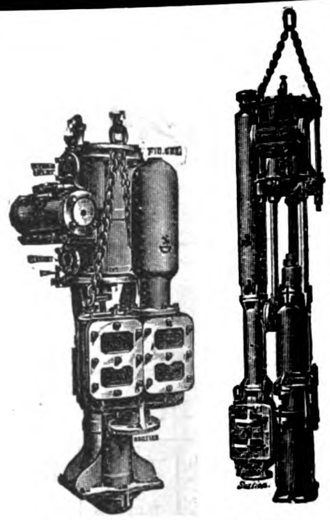
中國經售處上海圓明園路四號協慎隆昌洋行

The Goulds Manufacturing Co.

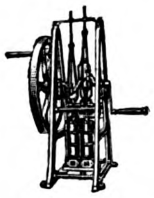


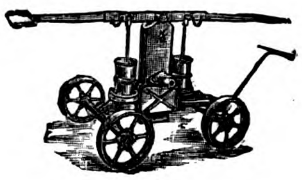
普通汽力抽水機

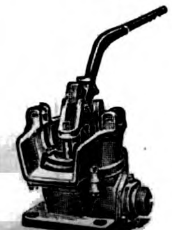




下垂抽水機
煤船煤礦所用







本公司製造各種抽水機專備工商各界採用各式全備不論使用何項動力如人工汽機皮帶風車水電各力之類均能適用如蒙函詢即將東方目錄寄奉　英國華亨頓城

伊凡斯公司謹啟

Joseph Evans & Sons

# 美國轆治鐵工廠廣告

The American Rolling Mill Co.

新舊兩鐵釘之比較方形熟鐵釘可用三十八年鋼鐵釘可用十一年

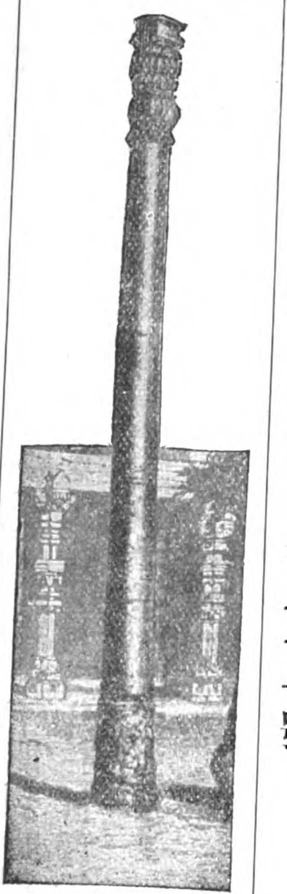
Agents for China
Chinese American Co.
1A Jinkee Road, Shanghai

ARMCO IRON

Agents for Philippine Islands
American Hardware & Plumbing Co.
Manila, P. I.

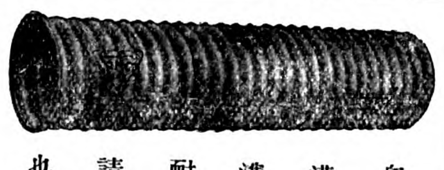
本工廠稟准國家立案爲萬國鐵廠所推許因所鑄之奧姆可鐵潔淨耐用夫鐵之爲物厥用甚大盡人皆知唯提煉不淨銹爛極易蓋異性之金類雜在一處一受空氣之潮濕卽發動電流化合力而銹爛乃起與電瓶同一理也故雜質去淨銹生自緩又製造各鐵條鐵板時若質地不勻及有微孔等弊亦爲生銹之原本公司製煉各種鐵器提煉既極純淨製造又極精美稍有成分不足體質不淨者均摒棄重行提煉総以試驗及格爲度絕無苟且之弊本公司之宗旨專務精美不競競以出貨之多爲勝也圖中所載之鐵柱現在印度台里省係鑄於二千八百年以前考其所以能歷如許之久者亦不過質地純淨而已本公司卽本此意幷經各專門冶金工師悉心研究得完美之製造方法各界賜顧者請認明三角式商標決不致誤

本廠開設美國哇哈哇省
中國上海經理華美公司仁記路一號
得律風一千九百七十一號



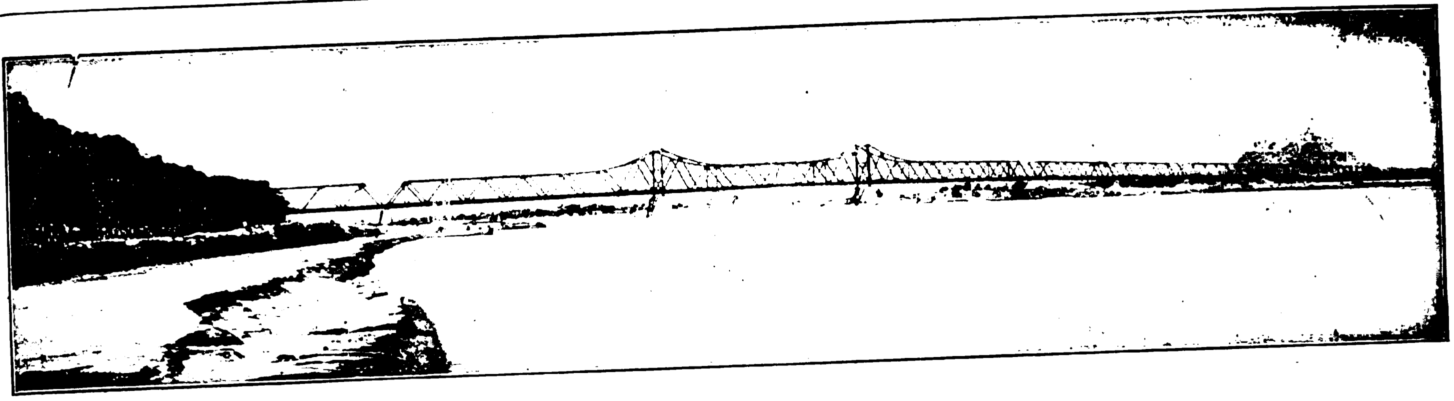
此圖乃印度國特而希之大鐵柱建於紀元前九百年爲純鐵所鑄之柱

屋頂及屋旁引傳電氣之奧姆可縐紋鐵件



奧姆可縐紋鐵溝大道鐵路陰溝最適用貨眞耐用欲知目錄請來信索取可也

# 津浦鐵路



## 津浦鐵路局改訂特別通車時刻廣告

本路特別通車上下開到時刻現經改訂與京奉膠濟滬甯等路客車上下銜接自本年十二月一日實行茲將改訂時刻暨各路銜接時刻開列如左

### 下行車

京奉路由瀋陽來之通車星期六日上午十鐘三十五分到天津東站

本路特別通車星期六日上午十一鐘二十分由天津東站開

京奉路由北京來之快車每日上午十一鐘二十五分到天津總站

本路特別通車星期六日上午十一鐘四十八分由天津總站開

膠濟路由青島來之快車每日下午五鐘五十九分到濟南

本路特別通車星期六日下午八鐘十二分由濟南開星期日下午一鐘十三分到浦口

滬甯路開往上海之快車星期日下午二鐘三十五分由南京開是日下午八鐘二十分到上海

### 上行車

滬甯路快車星期一日上午七鐘十分由上海開十二鐘三十分到南京

本路特別通車星期一日下午一鐘四十五分由浦口開星期二日上午六鐘四十分到濟南

膠濟路開往青島之快車每日上午八鐘由濟南開

本路特別通車星期二日下午二鐘三十三分到天津總站二鐘五十三分到天津東站

京奉路開往北京之快車每日下午三鐘四十五分由天津東站開其開往瀋陽之通車星期三日上午一鐘二十五分由天津東站開

### 特別注意

客商星期六日由京來津換乘本路特別通車南行者務請在總站過車勿到東站以免趕車不及

再客商星期六日上午八鐘三十分由北京起程星期日下午八鐘二十分即到上海其由上海北行者星期一日上午七鐘十分起程星期二日下午六鐘五十五分即到北京每次需時不足三十六鐘洵屬最捷之徑順此附告

Chinese Government Railways—Tientsin-Pukow Line

## 香港黃埔船澳有限公司廣告

本公司承接製造各種機器鐵路火車橋梁河海明暗輪船拖船淺水火船載客運貨大小快捷毛打輪船舉凡一切水陸起重器機爐鑊鎔鑄銅鐵器具電鍍等等工程並常有大單銅鐵螺絲角鐵鋼板鐵板等料躉賣加以本公司置有大石澳六所旱排二座以便大小船艦入澳之用洵鉅製也

諸君光顧凡有船隻裝修無論大小工程莫不應期完備庶不妄費時日又且工精料美價亦相宜如蒙惠顧請問總司理人 R. M. DYER可也

Hongkong & Whampoa Dock Co., Ltd.

茲將各澳地址尺寸開列於後

| 澳名 | 澳底長 | 澳口闊 | 水深 |
|---|---|---|---|
| 九龍第一號澳 | 七百尺 | 面八十六尺 底七十尺 | 三十尺 |
| 九龍第二號澳 | 三百七十一尺 | 七十四尺 | 十八尺六寸 |
| 九龍第三號澳 | 二百六十四尺 | 四十九尺三寸 | 十四尺 |
| 九龍第一號旱排 | 二百四十尺 | 六十尺 | 十四尺 |
| 九龍第二號旱排 | 二百二十尺 | 六十尺 | 十二尺 |
| 深水浦澳 | 四百六十六尺 | 八十五尺六寸 | 二十尺 |
| 香港仔第一號澳 | 四百三十尺 | 八十四尺 | 二十三尺 |
| 香港仔第二號澳 | 三百三十三尺 | 六十四尺 | 十六尺 |

本公司通電處乃用 MANIFESTO HONGKONG

香港寫字樓電話第二十號

本廠寫字樓電話第十三號K

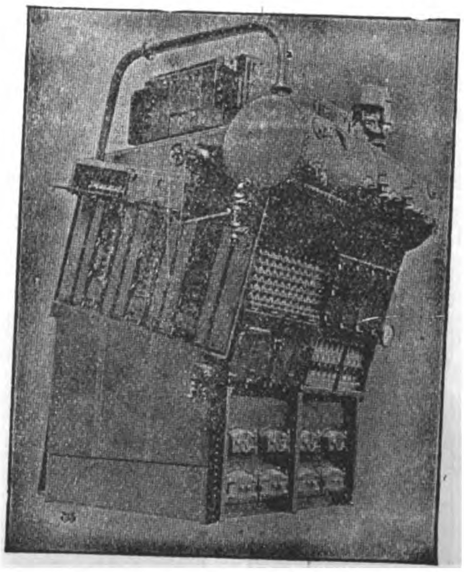
呂宋代理處 FINDLAY & CO., MANILA, P. I.

## 拔柏葛魏閣司有限公司

Babcock & Wilcox, Ltd.

## 製造特別水筒鍋爐

本公司陸地所用之鍋爐與加增熱力機器及最新自行燃煤之帶鍊機器係屬相連用之於電燈紡織麵粉造紙織呢兵工造幣礦務水泥自來水等廠最爲合宜



航海用之汽鍋圖

本公司專造加增熱力機器自行燃煤之帶鍊機器蓄熱機器電力起重機器起卸煤之機器鋼質烟囱及輪船軍艦所用之鍋爐等

公司之中國總辦事處在上海四川路一百零三號

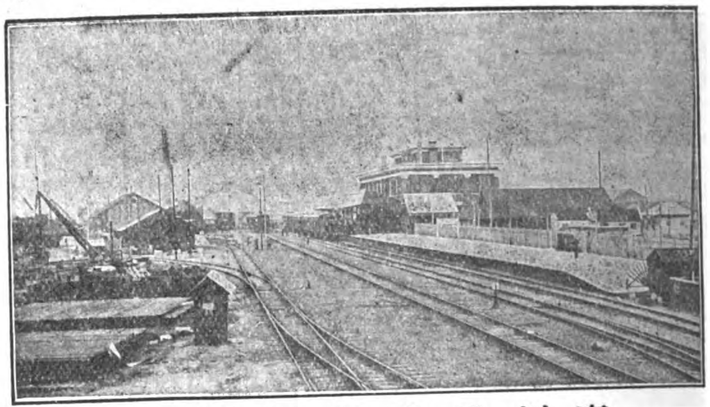
製造廠設在英德法美等國

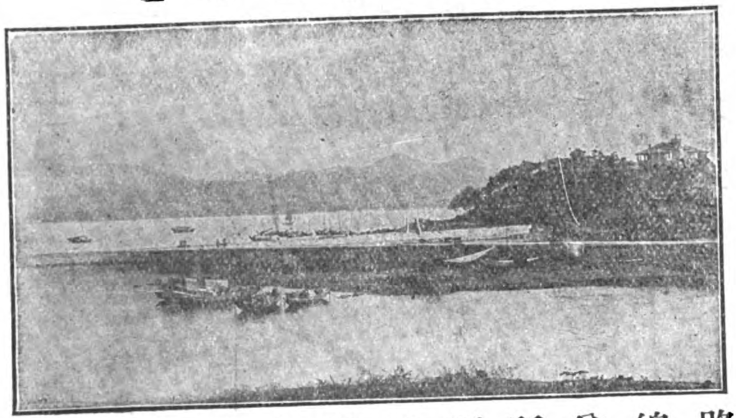
# 廣九鐵路

Canton-Kowloon Railway

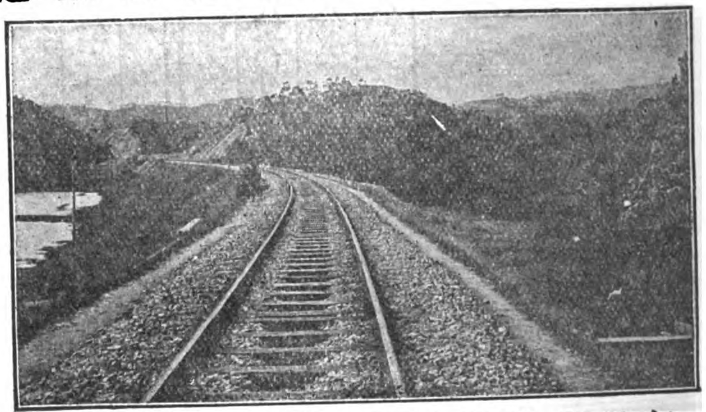
下列乃華段圖景該段八十九英里

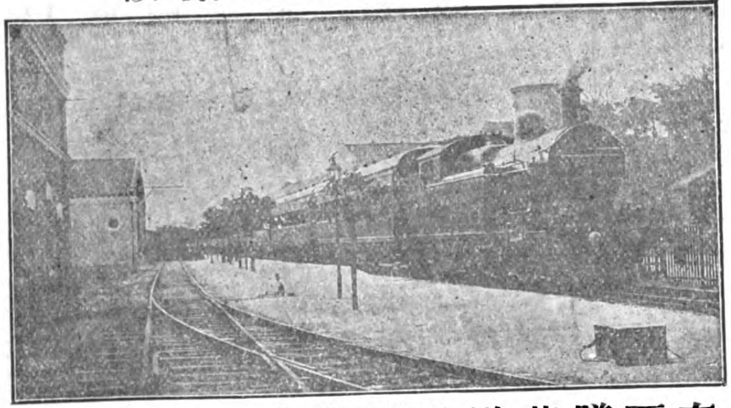
下列乃英段圖景該段二十二英里



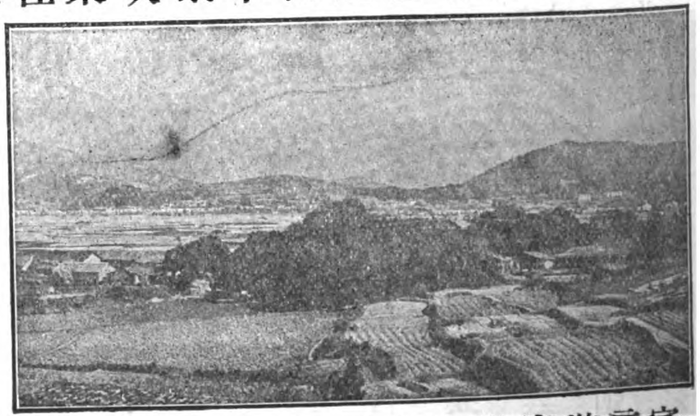


廣州香港間最捷最廉之路線兼所經各處之景緻

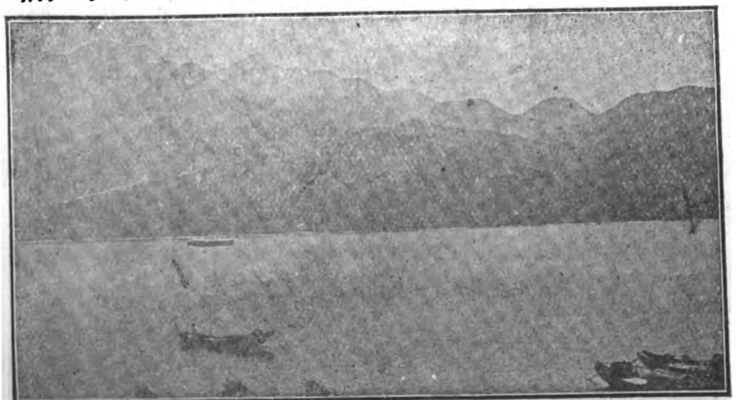




每日省港有直通快車試次來往並有西膳茶點以備搭客不時之需



富商遊客搭快車可即日來回在港在省各有四點餘鐘之久可儘可從容專辦



謹將本年夏天時刻表開列於下

香港開
上午六點三十五分快車
上午十一點十五分
上午十二點五十五分

廣東到
上午十點四十分快車
下午六點十分
上午四點三十分快車

廣東開
下午七點快車
上午八點三十分
上午十二點快車
下午四點二十分快車

香港到
上午十點三十分快車
下午四點十四分
下午三點五十二分快車
下午七點五十二分快車

並備有專車租賃車費從廉如欲知詳細者請看告白或問省城及香港鐵路總局可也

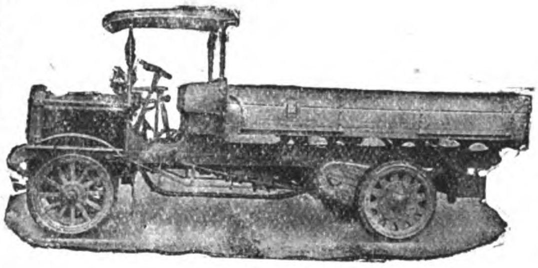
# 英國康模造車公司

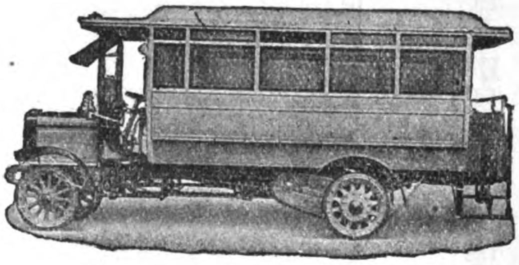
Commercial Cars, Ltd., Luton, England

格言曰觀運輸機關之隆替足覘以國家之盛衰本公司專造工藝界及公家所用車輛工料堅實精良無比取價低廉如貨車灑水車救火車客車等均可

## 康模牌車輛

"COMMER" CAR.
REGd TRADE MARK.





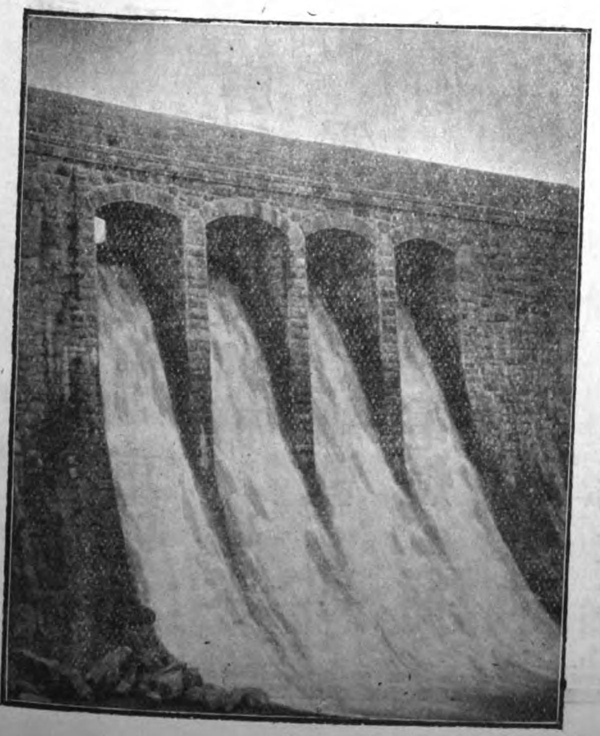
此種車輛裝有汽油機大小分爲十四號載重一噸至七噸載客十位至三十四位機器有二十至一百馬力

按式定造必能合意所裝油機燃燒煤油或汽油在東方應用最爲便適本公司總廠在英國勒頓城內英國康模造車公司謹啟



# 康狄濾水機公司廣告

The Candy Filter Coy. Ltd., Westminster, London.



用康狄濾水機費少而效用大蓋水一經濾過其色即清光耀奪目康狄濾水機不論大小場所城鎮工廠或興業處所無不合用

諸君若欲安置是項濾水機本公司之技師可以爲之打樣不取分文且必適合用度以致

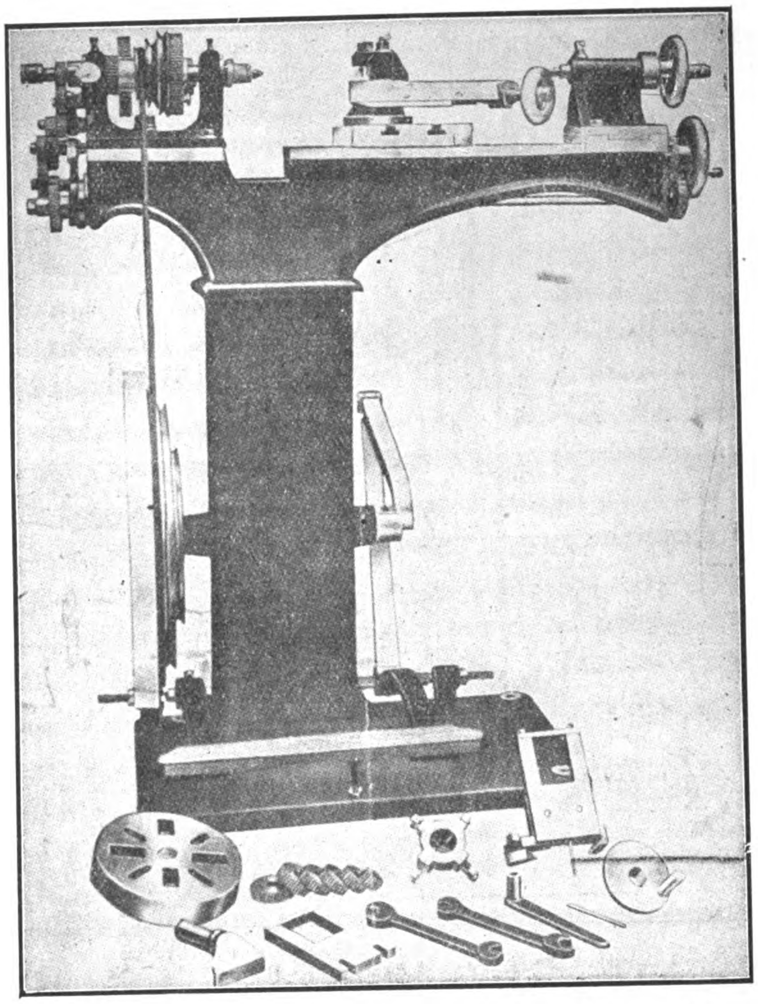
諸君信仰

本公司注册之濾水機并各種方法以及各器俱包使存水處所以及各支流得以清潔勿污

**總行開設英京倫敦思敏思得耳**

**中國經理上海**九江路三號魏廷敦起水機器有限公司

# 怡和洋行機器房廣告



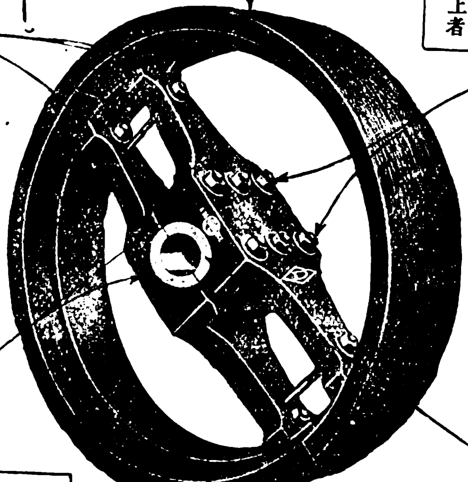
本行分設滬濱數十餘載專辦各種機器如下　鐵軌　車輪　車頭　紡織機　磨麪機　搾油機　碾米機　磚瓦　鋸木牀　造紙機　印書機　鎗礮　製革機　電燈　餅乾　火力引擎　煤氣引擎　火油引擎　鍋爐　發電機　開礦吸水機及馬達引擎等並常備現貨如下　火力引擎　煤氣引擎　立式鍋爐　吸水機　手搖吸水機　大小車床　修機應用各件　淨茶機　紙百　配更　皮帶等其餘一切零件不及詳載倘蒙賜顧無不歡迎定價亦格外克己請至圓明園路本帳房接洽電話一零九六

Jardine, Matheson & Co.

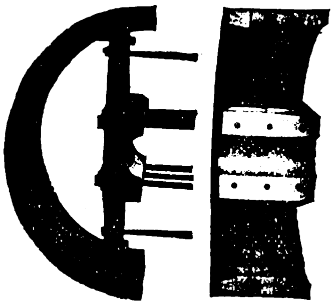
# 道治牌機器公司廣告

## 道治(獨立)木質分縫轆轤有交換軸套爲最省費最有力之滑車

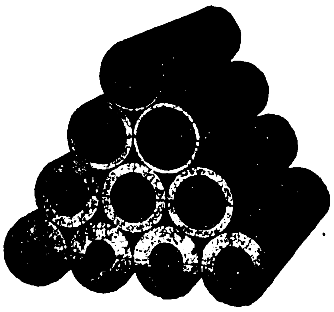
(告貿易者)每貿易者備有滑車因本公司之交換軸套不論何種大小之輪軸均可合用蓋交換軸套付與貿易者其長可隨意截短出售此種滑車爲道治牌機器類中之一爲傳力物之嚆矢故爲各處動力者及貿易者所歡迎索取目錄不取郵費




(告動力者)此項滑車爲精於機器者所製成力大耐用排立得法故爲全球動力家所歡迎道治木質分縫轆轤能傳力自百分之二十五至百分之六十較銅鐵類以皮帶牽拉之轆轤爲有力此項滑車應用者數百萬若欲索取目錄郵費可免



此輪之構造爲精於機械學者所製此兩方相遇若輪心夾入輪軸使之積分力而發生大力輪邊連結如內鎖



此爲木質之交換軸套用特別之車床所製若當用之則知內鑿洞而向外轉若剖之爲二則夾處自必顯明矣

**DODGE**

**Sales and Engineering Company**

GENERAL OFFICES AND WORKS

Mishawaka, Indiana, U. S. A.

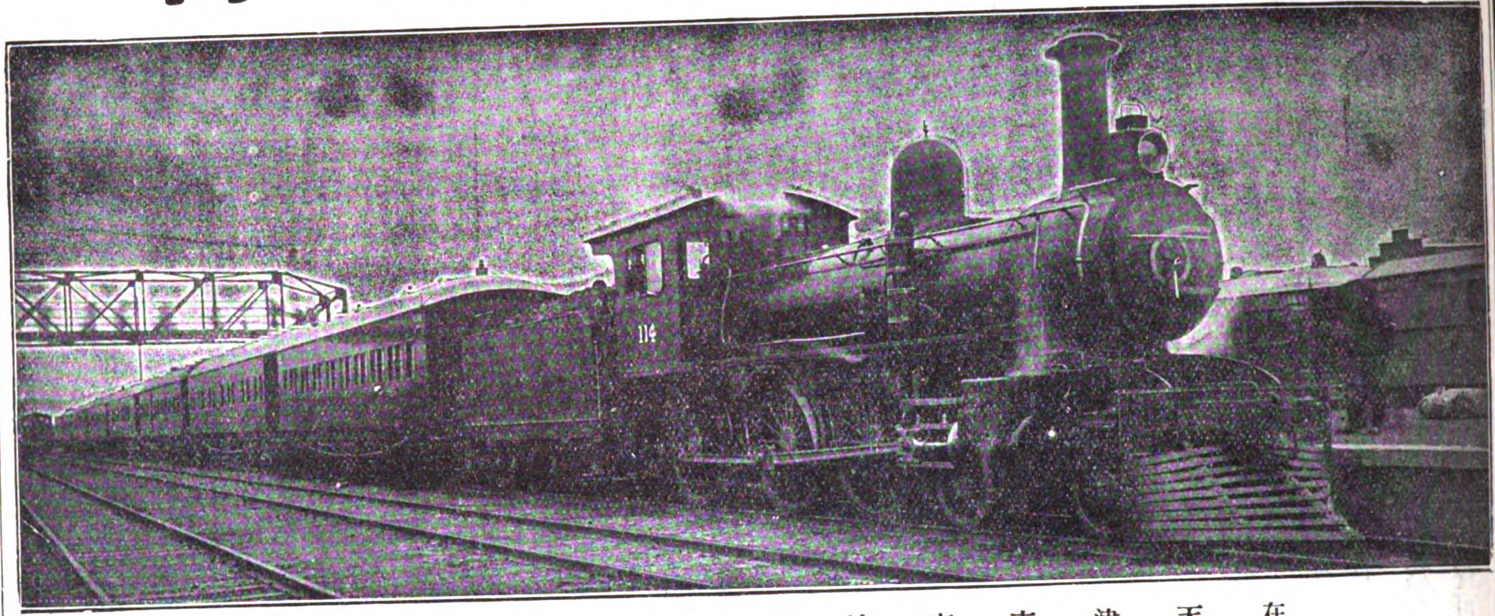
本公司亦造實質及分縫鐵軸自添油之球窠活掛軸機以及他種之軸枕摩擦接盤連結器及各種絞繩索機器幷凡傳力之各種機器

本公司所製造之各種機器均存足於海岸以便一接定單卽行裝運

本公司已有三十載之經驗裝運出口貨物不致破損

總公司及工廠開設美國印第埃拿省

# 京奉鐵路廣告

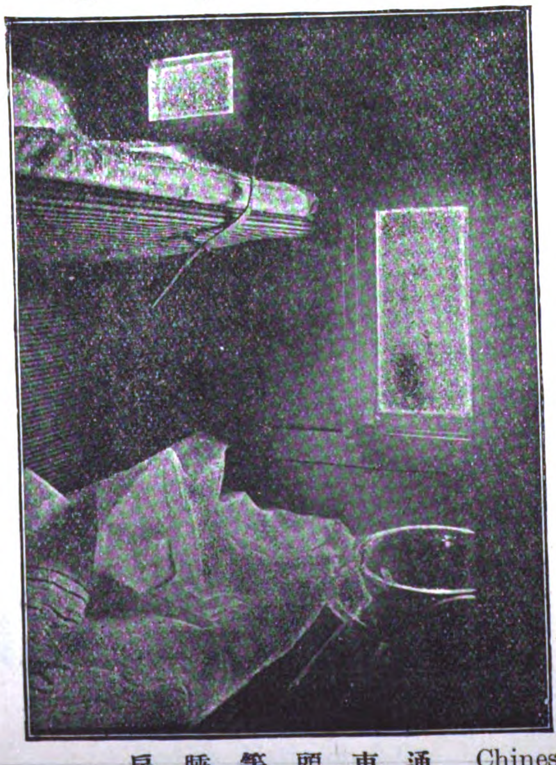


在天津東車站停放之床位通車

啓者本路路綫係與附近各路互相聯絡東則接連南滿路可達歐洲南則接連京漢路可達長江一帶商埠由京漢路中心點幷可達至正太路之太原府道清路之開封府汴洛路之河南府北則與京張路綫相連可達至萬里長城四面貫通無遠弗屆本路綫所經名勝如北京瀋陽之皇陵殿宇天津之北方商務總匯唐山之工廠礦務山海關之萬里長城牛莊之南滿洲商埠俱屬繁盛之區足供遊覽至京瀋直達通車每星期來往一次備有飯車睡房精潔適意以便行旅而廣招徠倘蒙

光顧毋任歡迎之至特此佈告

北京車站



通車頭等睡房

Chinese Government Railways of North China

# 美國紐約克美孚油行廣告

The Standard Oil Company of New York

本行所出之**鎖可聶瀝青油**爲生瀝青油由格致術所製成如欲引長其效用黏合其物質柔固其原料以及天氣溫熱度之容納無不隨心所願

**鎖可聶瀝青油**可用於任何堅硬之物不加他種之油亦合於用下列之各處均可用此**鎖可聶瀝青油**

建築永久之道路　屋頂水路工廠地板拍球園場　水滷管洞

用於鐵路車結處電桿電柱等處　包鋼質建築物及溝管等物

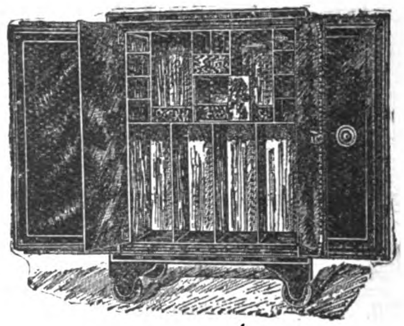
**鎖可聶瀝青油**可用於法倫表熱二百二十一度之融點故於最熱之天氣亦合用適度也**鎖可聶瀝青油**非試用之物乃合衆國多年實用之油功效最著之物品也

欲知詳細請函達上海五馬路十一十二號

美國鈕約克美孚油行光油部可也

## 晉隆洋行廣告

Herring Hall Marvin Safes. Mustard & Co.



赫令好馬文保險箱爲上海所罕見目下陳列於本公司之售賣間若欲知詳細價目請來函索取目錄并價格表爲荷本公司在中國爲單獨經售此項保險箱之公司

公司開設上海圓明園路二十二號

電話第十五號

## 司帝反生公司廣告

W. F. Stevenson & Co., Ltd.

小呂宋　伊羅伊羅　塞步

本公司駐小呂宋單獨經理白弗羅匹次公司之農業機器克老司來弟兄公司之煤汽機及油汽機奧司丁製廠之造路機器威廉滑脫公司之航海機器及水鍋等

合羣愛司倍司督司東方經理處

## 希米脫加熱機關車蒸機公司廣告

The Schmidt Superheater For Locomotives.

The Schmidt Superheating Co., Ltd.

本公司所製之加熱蒸機中有四百九十多條之鐵道用二萬八千五百架機關車之加熱蒸機均爲倫敦及西北鐵路公司所審定若承購買請向上海經理處瑞記洋行定購可也

公司開設英國韋司民司得維多利亞街二十八號

## 馬爾思公司

A. J. Morse & Son Diving Apparatus.

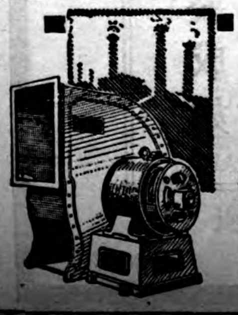
本公司創設於紀元一千八百三十七年專製下水應用之器具若欲定製無不立辦

公司開設美國鮑思敦高街第二百二十一號

經理處小呂宋弗蘭克司決浪克

## 麥秀斯耶次公司廣告

Matthews & Yates Ltd.



本公司所製之旋風風扇不論放於何處能省費加力

旋風風扇在世界各處無不置備因能生風通氣去濕等等利益在中國各處裝置者頗不乏人故聲價日高

諸君欲知詳細請來函索取第二百七十三號之說明書

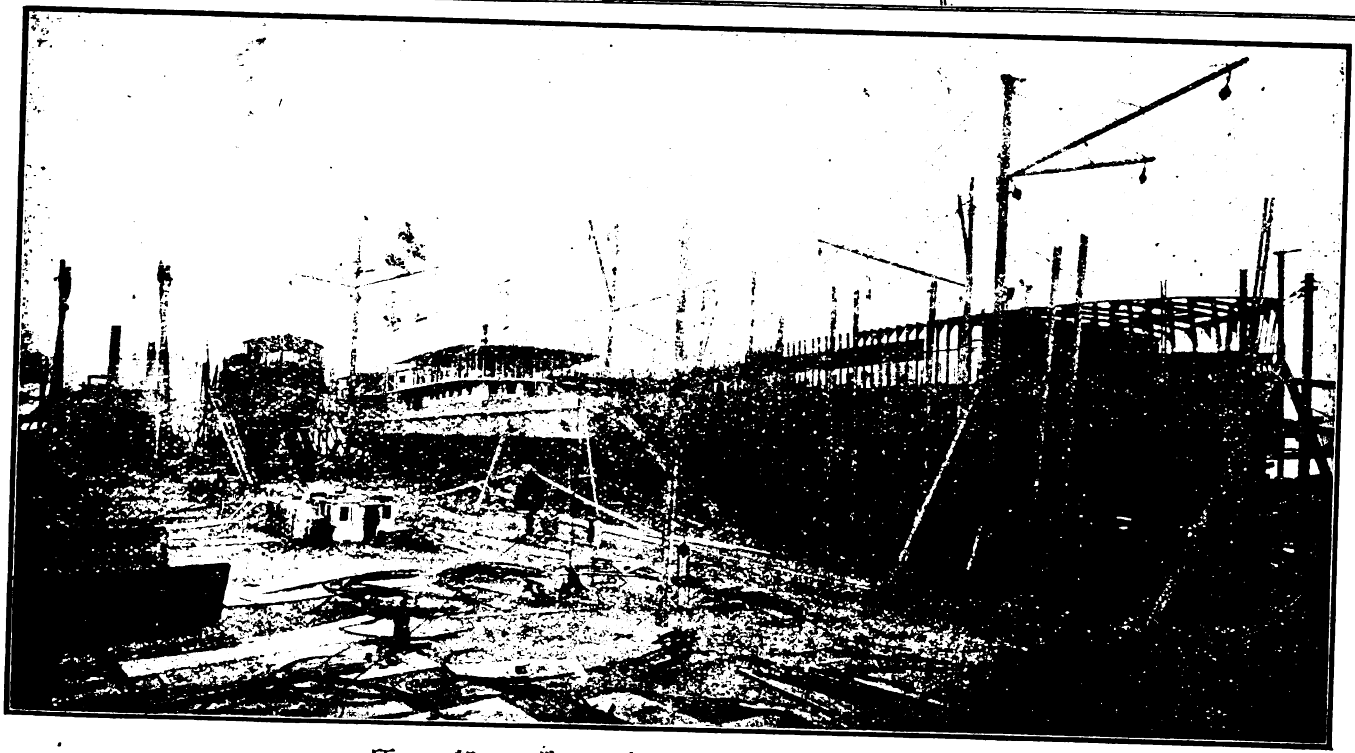
本公司開設英國孟鳩思得

中國經理處上海江西路三十九號凱衛倫洋行

# 上海耶松機器船廠有限公司

The Shanghai Dock & Engineering Co., Ltd.

| 電報行名 Telegraphic Address and Code | 總公司 Address | 電話號碼 Telephone Number |
| --- | --- | --- |
| "FARNHAM"<br>A. B. C. 4th and 5th Editions<br>A.-1 Watkin's, Scott's<br>Western Union<br>and<br>Engineering.<br>密碼本用 | 在百老匯路廿六號<br>德律風第七號 | 大班處 七五七號<br>書記處 一八七號<br>總辦處 六七八號<br>幫辦處 一八八七號<br>總寫字間 七號<br>浦東寫字間 二三號<br>浦東機器間 一二二七號 |



祥生機器廠造船所

The Model exhibited at St. Louis Exposition and awarded the Gold Medal in 1904.

本廠所造輪船模型英一千九百零四年在美國聖魯易賽會得賞金牌

All Kind of Steam Heating Institutions.

熱水汽管即司丁火爐各種樣式俱全

本廠共有船塢五處長自三百五十五尺至五百三十二尺船塢口闊自五十三尺至七十七尺深十六尺至廿四尺　本廠價格可稱東方第一低廉　本廠船塢工場共有基地四百四十八畝佔有水面一英里半之長　碼頭方船均全以便各輪船修理時可以靠傍小輪修理並可拖至岸上各船塢均備有起重吊機可受六十五噸之重物　各造船處及工場均裝用電燈並有活動吊機可吊六十噸重之物並有最新式機器應用物件機器間及工場均裝輕便鐵道　本廠備有水鬼多名撈船器具及吊機浮船一遇招呼隨時應命無論海船江輪明輪暗輪拖駁小輪機器駁船挖泥船吊機浮船以及碼頭方船等如蒙詢問價目無不從速答覆　各種修理及拆舊換新等本廠均可承接並能迅速從事　本廠並有船上岸上所用機器爐子開礦機抽水機以及各種機件電氣自來火火油司丁各種機器俱全如蒙賜顧請即駕臨或函件接洽均當歡迎也

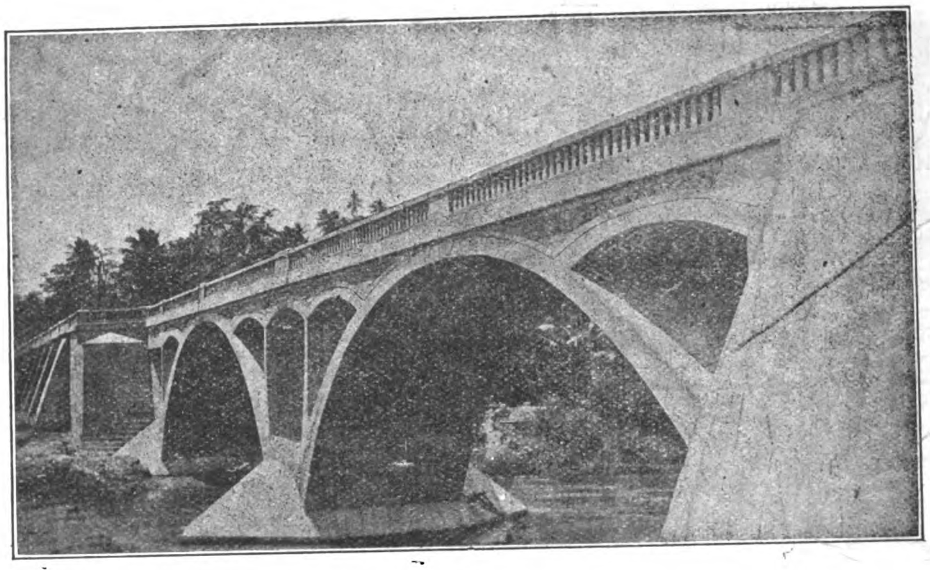
# 青洲英泥

Green Island Cement Company, Ltd.

燒青泥磚

大小明暗瓦溝

水斗等器



花階磚

大階磚

火爐磚及泥

亞路卑扒拉波歷握橋用二千五百桶青洲英泥而建成

**代理分銷處**

架剌吉打 端拿摩利臣公司

新加坡 士滔片民

長口及漢口壹帶渣甸洋行

仰光 希活

孟米 士片拿公司

庇能 列公司

中國海岸及臺灣渣甸洋行

**本行在別埠代理處**

上海支行

日本支行

天津支行

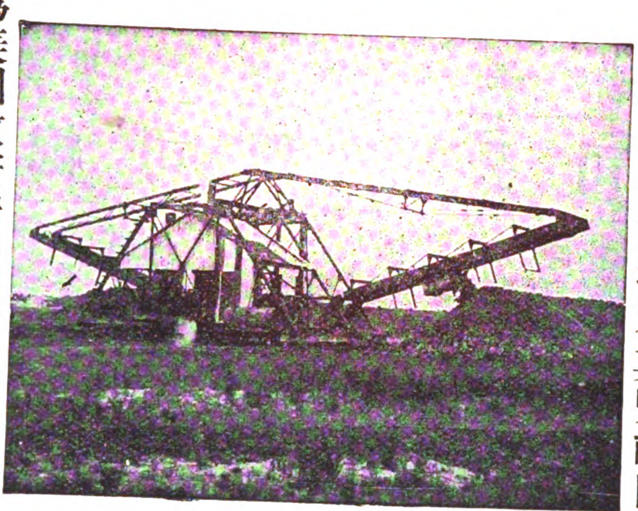
非律賓羣島全權代辦人小呂宋威廉晏打臣公司

# 奧司丁挖渠機器公司露佈

F. C. Austin Drainage Excavator Co.

本公司製造各種機器如溉田機器鑿溝機器且一經購定卽可速卽裝運出口今本公司特登廣告以告諸包工家營造師以及政府中官吏因本公司已將各機器早經裝就定單一到卽可運往印度緬甸錫蘭暹羅海峽殖民地埃及中國日本及遠東諸各處水脚保險均可包理

奧司丁鑿溝機器樣式及大小種類極多且各種地土均可挖鑿其兜能自傾外出其機器之料作均鋼所鑄奧司丁掘土機器能自由運動地之深淺闊狹斜側均適宜合用其兜能自傾外出圖中之奧司丁連結挖掘機器



為美國政府所用以開巴拿馬運河之用每一連機每點鐘可挖掘六十八立方碼奧司丁公司所出之機器通行於美國英國坎拿大奧司達利亞南亞非利加日本俄羅斯意大利巴西及埃其丁民主國且均由各該政府定購

若欲知詳細章程者可函達上海遠東報主筆先生可也

本公司開設美國芝加哥省

# 克立討耳公司廣告

CRITTALL

本公司包造各種房屋遐邇馳名工廠開設英國日本經理東京麴町區有樂町十一町目

A VIEW IN THE SHIBAURA ENGINEERING WORKS TOKIO

日本東京芝浦製作所之窗圖

中國經理上海漢口天津上海南京路十三號盈生洋行

此圖為本公司在日本東京之機器工廠

# 新旗昌洋行

本行佈設英京神戶廣州香港上海天津紐約等處專辦出入口貨代理船務及抽佣經理人

香港書信箱號數第壹百三十一號卑字
上海郵政局信箱第八十四號
各枝行掛號電報碼用旗昌二字

## 本行總司理各公司列下

● 非律賓輪船有限公司
● 維新織造有限公司
● 廣州省城置地有限公司
● 永安人壽保險有限公司
● 中呂輪船有限公司
● 勢力電燈有限公司
● 青洲英坭有限公司
● 香港麻纜織造有限公司
● 均益按揭有限公司

## 代理各公司列下

● 厘拉仁士洋面保險有限公司
● 大洋海面保險有限公司
● 泅水海及火燭保險有限公司
● 英北及商務保險公司
● 羅天仁保險有限公司
● 煜舍燕梳有限公司
● 北美燕梳公司
● 上洋歎菓及紙料有限公司
● 美亞輪船公司
● 美滿航務公司
● 祁連航務有限公司
● 香港電車有限公司
● 楊子燕梳有限公司
● 地球洋面保險有限公司
● 大洋意外保險有限公司

## 上海英商新旗昌洋行機器處廣告

本行樓子房現設江西路六號電話三四八七號

本行經理各種機器如紡織碾米榨油磨麵造紙開礦墾荒抽水挖坭大小火輪全副引擎鍋爐及火車頭客車貨車鐵路材料並自來水一切物件其餘鋸木車鑽刨床各式大小引擎鍋爐及磨電機發動機煤氣引擎發煤氣機以及得律風電燈電氣應用一切另件等具色色俱全均係外洋著名廠家特別精造新式玲瓏堅固但各項名目繁多未便盡載倘承賜顧或蒙函詢當即竭誠詳細奉答價亦格外克己以廣招徠倘祈惠臨方知言之不虛也

## 在中國全權代表各公司列下

淢隨路城火車工廠
澳地士依里威滔公司
波路深孖汽喉公司
抛亞瓦斯合股有限公司
抛亞不厘有限公司
李孖普鐵廠
倫深末禪及制花利有限公司
盧爹士麼滔有限公司
船主琴實使順有限公司
所利雲機器公司
爲拉列地有限公司
華臣製造公司
和蛙連毛滔工廠

裝鐵路燈工廠
壓活公司
占士科士打有限公司
占士提邊士公司
立可父子公司
可夫文製造公司
贊鶴建臣父子有限公司
耳昔則臣父子有限公司
精建兄弟有限公司
奇布尼及則給士製造公司
廉孖車頭及機器公司
文寧麥士謂及摩公司
妙千斤麼不歷其滔公司

美國布魯亞公司
美國鋼線公司
大英靴路士比電線纜有限公司
班尼士製造公司
比厘路公司
表花盧不歷鞭公司
表花盧士派士厘公司
布律端父子公司
插父子鎖鑰與銀箱有限公司
地吐律滔路公司
的有限公司
贊的建臣公司
胡路扶公司

Shewan, Tomes & Company

# 瑞生洋行

## 設分行在漢口天津北京等處

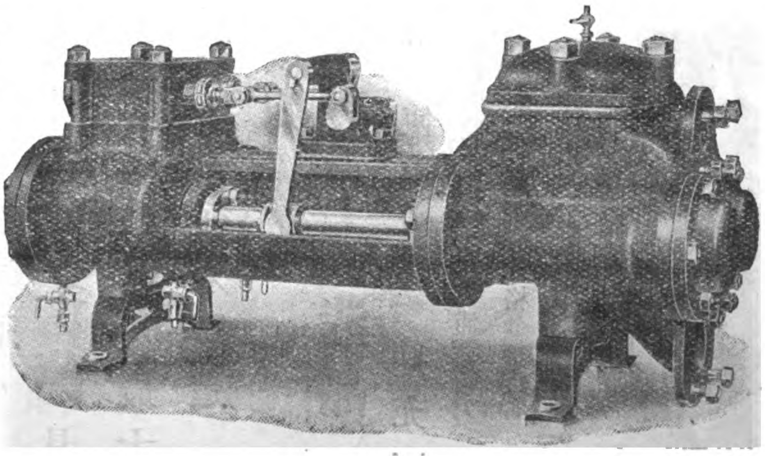
本行開設在華歷有年所承
蒙 官商訂購各種機器或
全廠或零售無不價廉物美
屢承 嘉許遐邇皆知凡
官商諸公購辦機器務祈惠
臨 敝行 估開價目繪呈圖說
格外克己上海漢口兩處另
設機器陳列所陳列各種最
新式樣機器及五金器具鋼
地軸皮帶輪掛脚等以備
諸公駕臨觀覽特此佈告
上海瑞生洋行謹白

Shanghai Machine Company

# 魏廷敦起水機器有限公司

Worthington Pump Company, Limited.

本公司起水機器亦在各國著名
賽會得有金牌
本公司亦有製造廠在以下之國
英國 法國 美國 澳國
德國 印度國



本公司亦有辦事處在以下載明
之各國
比利時 南亞斐利加 坎拿大
澳大利亞 中國 葡萄牙
墨西哥 巴西 俄羅斯
阿珍甸 西班牙 義大利

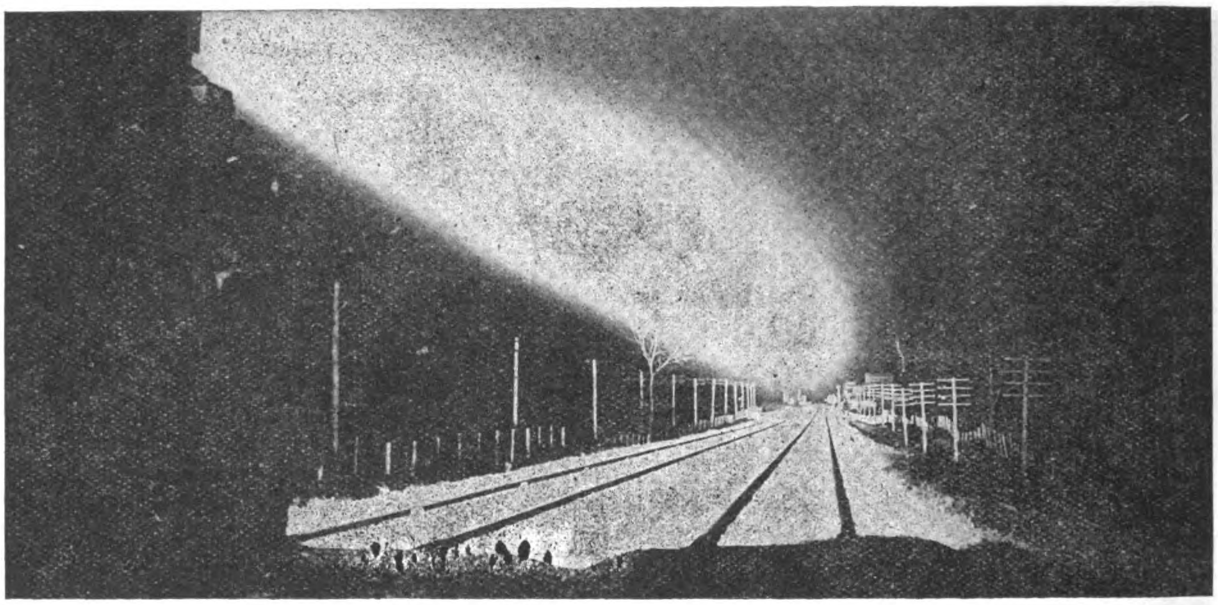
中國總辦事處在上海九江路第三號

# 美國派愛而車頭電燈公司告白

Pyle-National Co.

## 下圖表明用二萬二千支光派愛而車頭電燈之功用

此圖的係攝自美國鐵路車站其攝影之地點相去



車頭有半英里之遙足徵派愛而燈之功用非小

派愛而燈能發有力明亮之光可使車頭司機者之視線能達半里之外且使其能瞭視一切可避危機派愛而燈之功用上已略言之矣總之人咸樂用此種燈因知其無美不臻也

# 西方電氣公司廣告

The Western Electric Co., Inc., Shanghai.

公式電池用牆機

三十八載以來本公司已供給全地球市場電話機**一千萬**具及**多數**之電纜電料以及最大之總機爲世界各國從未製造

快快改用

**西方電氣公司製造品**

機件最精　使用最易　擴充尤易

本行開設上海廣東路黃浦灘轉角
小呂宋經理處愛令加格令加洋行
日本經理東京日本電氣株式會社

公式電池用桌機

# 正太鐵路客車時刻表

The Cheng-Tai Railway

## 上行各車

| 站名 | 頭等價目 元 | 頭等價目 角 | 二等價目 元 | 二等價目 角 | 三等價目 元 | 三等價目 角 | 慢車開 點 | 慢車開 分 | 客貨車開 點 | 客貨車開 分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 石家莊 | | | | | | | 七 | 〇三 | 七 | 三十 |
| 大郭村 | | 五 | | 三 | | 二 | 七 | 十六 | 七 | 四五 |
| 獲鹿縣 | | 九 | | 五 | | 三 | 七 | 三二 | 八 | 〇三 |
| 頭泉 | 一 | 二 | | 七 | | 四 | 七 | 五一 | 八 | 二三 |
| 白王莊 | 一 | 五 | | 八 | | 五 | 八 | 十一 | 八 | 四六 |
| 五里舖 | 一 | 七 | 一 | | | 六 | 八 | 二一 | 八 | 五八 |
| 微水 | 二 | 一 | 一 | 一 | | 七 | 八 | 三六 | 九 | 十五 |
| 南橫口 | 二 | 三 | 一 | 三 | | 八 | 八 | 四九 | 九 | 二九 |
| 南張村 | 二 | 五 | 一 | 四 | | 九 | 九 | 〇二 | 九 | 四三 |
| 井陘縣 | 二 | 八 | 一 | 五 | 一 | | 九 | 二五 | 十 | 十五 |
| 北峪 | 三 | 一 | 一 | 七 | 一 | 一 | 九 | 三六 | 十 | 四一 |
| 南峪 | 三 | 三 | 一 | 八 | 一 | 一 | 九 | 四七 | 十 | 五一 |
| 娘子關 | 三 | 六 | 二 | | 一 | 二 | 十 | 十八 | 十一 | 十七 |
| 程家隴底 | 四 | | 二 | 二 | 一 | 四 | 十 | 三四 | 十一 | 三四 |
| 下盤石 | 四 | 五 | 二 | 四 | 一 | 五 | 十 | 五十 | 十一 | 五二 |
| 巖會 | 四 | 八 | 二 | 六 | 一 | 六 | 十一 | 〇四 | 十二 | 十四 |
| 亂流 | 五 | 三 | 二 | 九 | 一 | 八 | 十一 | 二四 | 十二 | 三六 |
| 白羊墅 | 五 | 六 | 三 | 一 | 一 | 九 | 十一 | 三八 | 十二 | 五二 |
| 陽泉 | 五 | 八 | 三 | 二 | 二 | | 十二 | 三七 | 十三 | 二十 |
| 賽魚 | 六 | 二 | 三 | 四 | 二 | 一 | 十二 | 五三 | 十三 | 三七 |
| 坡頭 | 六 | 五 | 三 | 六 | 二 | 二 | 十三 | 〇九 | 十三 | 五四 |
| 測石驛 | 六 | 八 | 三 | 七 | 二 | 三 | 十三 | 三二 | 十四 | 十六 |
| 芹泉 | 七 | 三 | 四 | | 二 | 五 | 十三 | 五六 | 十四 | 四十 |
| 壽陽縣 | 七 | 八 | 四 | 二 | 二 | 六 | 十四 | 十九 | 十五 | 十三 |
| 郭村 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 三二 | 十五 | 二九 |
| 上湖 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 四七 | 十五 | 四六 |
| 盧家莊 | 九 | | 四 | 九 | 三 | | 十五 | 〇三 | 十六 | 十 |
| 段廷 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 十八 | 十六 | 二七 |
| 東趙村 | 九 | 八 | 五 | 三 | 三 | 三 | 十五 | 三四 | 十六 | 四六 |
| 北合流 | 十 | 二 | 五 | 五 | 三 | 四 | 十五 | 四七 | 十七 | 〇三 |
| 榆次縣 | 十 | 五 | 五 | 七 | 三 | 五 | 十六 | 〇九 | 十七 | 三三 |
| 鳴李 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二一 | 十七 | 四七 |
| 北營 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 三三 | 十八 | 〇一 |
| 太原府 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 四五 | 到十八 | 十五 |

## 下行各車

| 站名 | 頭等價目 元 | 頭等價目 角 | 二等價目 元 | 二等價目 角 | 三等價目 元 | 三等價目 角 | 慢車開 點 | 慢車開 分 | 客貨車開 點 | 客貨車開 分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 太原府 | | | | | | | 七 | 五三 | 八 | 〇六 |
| 北營 | | 五 | | 三 | | 二 | 八 | 〇七 | 八 | 二一 |
| 鳴李 | | 八 | | 五 | | 三 | 八 | 十九 | 八 | 三四 |
| 榆次縣 | 一 | 二 | | 七 | | 四 | 八 | 四五 | 八 | 五九 |
| 北合流 | 一 | 六 | | 九 | | 六 | 八 | 五九 | 九 | 十四 |
| 東趙村 | 二 | | 一 | 一 | | 七 | 九 | 十三 | 九 | 二九 |
| 段廷 | 二 | 四 | 一 | 三 | | 八 | 九 | 二九 | 九 | 四七 |
| 盧家莊 | 二 | 八 | 一 | 五 | 一 | | 九 | 四五 | 十 | 〇七 |
| 上湖 | 三 | 二 | 一 | 八 | 一 | 一 | 十 | 〇三 | 十 | 二六 |
| 郭村 | 三 | 六 | 二 | | 一 | 二 | 十 | 十九 | 十 | 四三 |
| 壽陽縣 | 四 | | 二 | 二 | 一 | 四 | 十 | 三七 | 十一 | 〇七 |
| 芹泉 | 四 | 四 | 二 | 四 | 一 | 五 | 十 | 五三 | 十一 | 二四 |
| 測石驛 | 四 | 九 | 二 | 七 | 一 | 七 | 十一 | 十三 | 十一 | 四七 |
| 坡頭 | 五 | 二 | 二 | 八 | 一 | 八 | 十一 | 二五 | 十二 | 〇一 |
| 賽魚 | 五 | 六 | 三 | | 一 | 九 | 十一 | 三八 | 十二 | 十九 |
| 陽泉 | 五 | 九 | 三 | 二 | 二 | | 十二 | 三九 | 十三 | 三五 |
| 白羊墅 | 六 | 一 | 三 | 三 | 二 | 一 | 十二 | 五〇 | 十三 | 五一 |
| 亂流 | 六 | 四 | 三 | 五 | 二 | 二 | 十三 | 〇四 | 十四 | 〇八 |
| 巖會 | 七 | | 三 | 八 | 二 | 四 | 十三 | 二四 | 十四 | 三七 |
| 下盤石 | 七 | 三 | 四 | | 二 | 五 | 十三 | 四十 | 十四 | 五三 |
| 程家隴底 | 七 | 七 | 四 | 二 | 二 | 六 | 十三 | 五七 | 十五 | 十二 |
| 娘子關 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 十七 | 十五 | 四五 |
| 南峪 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 三三 | 十六 | 〇一 |
| 北峪 | 八 | 七 | 四 | 七 | 二 | 九 | 十四 | 四二 | 十六 | 十二 |
| 井陘縣 | 九 | | 四 | 九 | 三 | | 十四 | 五八 | 十六 | 五五 |
| 南張村 | 九 | 二 | 五 | | 三 | 一 | 十五 | 十 | 十七 | 〇九 |
| 南橫口 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 二一 | 十七 | 二一 |
| 微水 | 九 | 七 | 五 | 三 | 三 | 二 | 十五 | 三三 | 十七 | 三五 |
| 五里舖 | 十 | | 五 | 四 | 三 | 四 | 十五 | 四九 | 十七 | 五五 |
| 白王莊 | 十 | 二 | 五 | 六 | 三 | 四 | 十五 | 五八 | 十八 | 〇六 |
| 頭泉 | 十 | 六 | 五 | 七 | 三 | 六 | 十六 | 十三 | 十八 | 二三 |
| 獲鹿縣 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二八 | 十八 | 五七 |
| 大郭村 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 四十 | 十八 | 五七 |
| 石家莊 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 五一 | 到十九 | 〇十 |


# 美國鋼鐵出產公司廣告

本公司所出鍍鋅彈簧鐵釘久為光顧諸君所歡迎蓋以之釘屋頂實較勝於螺釘螺蓋螺圈也且價格又廉此四面之釘圖即本公司之出品長二吋四分之一諸君若購用之則屋頂不滲漏貨物不致損壞且省修理費若欲購者請向上海江西路愛字二十四號門牌可也

THE UNITED STATES STEEL PRODUCTS COMPANY.

# 白老頓製銅公司廣告

The Broughton Copper Co., Ltd.

本公司冶銅製造紫銅黃銅青銅管子溶冶合度堅固異常特供航海及機關車并種種用具叉製造銅塊銅條銅片及銅版并製電銅版及夾銅等物

公司開設英國曼區司得

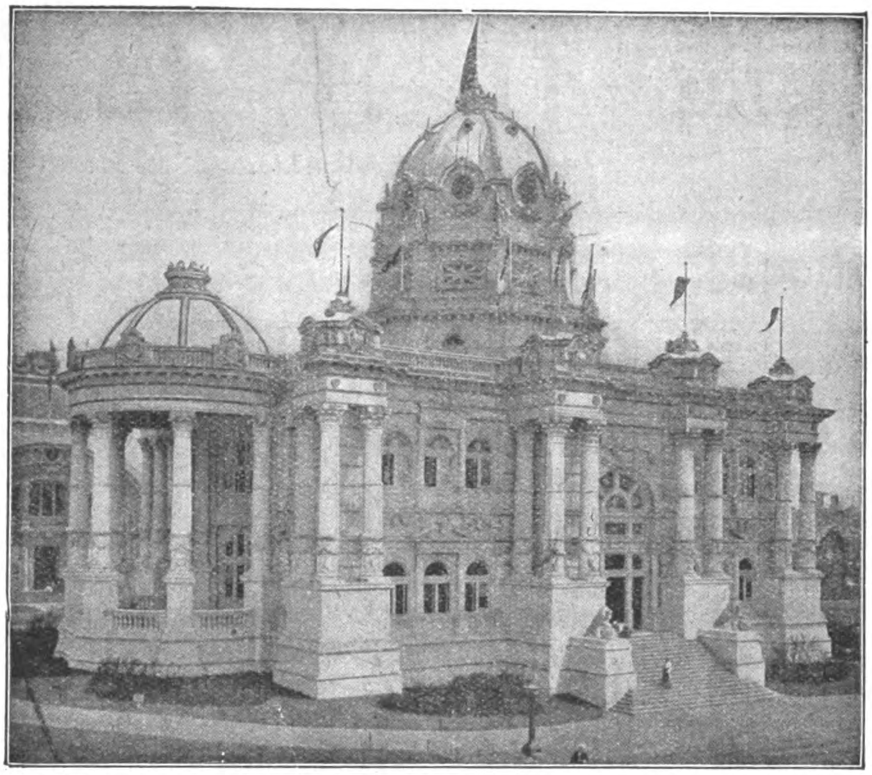


# 安德生公司廣告

Wm. H. Anderson, & Co. Manila, P. I.

本公司專做出口進口貨物并代客買賣且爲以下所列各公司駐小呂宋之經理革林島水門汀泥公司　香港纜索製造公司　立培麥克聶立培公司　司活夫公司　勃老司活克白耳克考蘭特公司　婑磨督公司　大愛地特保險箱光滑油溝渠管火磚火泥及羅勃老特避火之瓦若承各界光顧祈通函定購可也

本公司開設小呂宋小打克羅橋



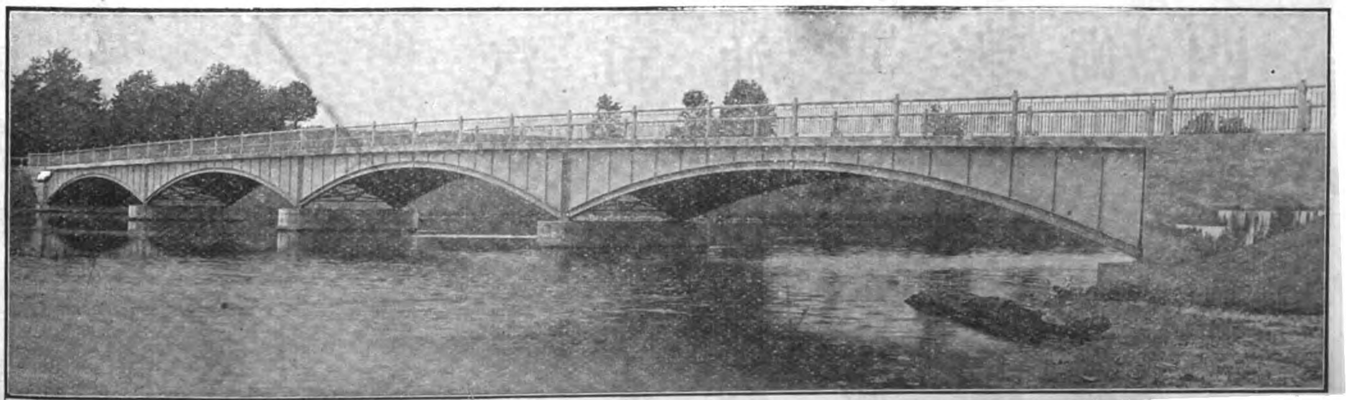
此爲巴蘭夢羅和平宮其工程之堅固久爲世界所稱譽然建築時需用鋼鐵至四百餘噸之鉅皆本公司所供給特攝之以供賞鑒

# 美國鋼鐵公司

電碼 "Steelyard." Shanghai

經理處 上海黃浦灘第四號

**本公司專辦各種建築鋼鐵品並包造鐵橋鐵房自來水煤氣塔及各種鐵管等物無不全備**



此爲美國牛查西省克那基湖哈爾門橋橋共四彎每距九百二十四寸約重二十七萬一千餘噸計用鋼鐵甚夥均屬本公司之出品

United States Steel Products Company

# 慎昌洋行廣告

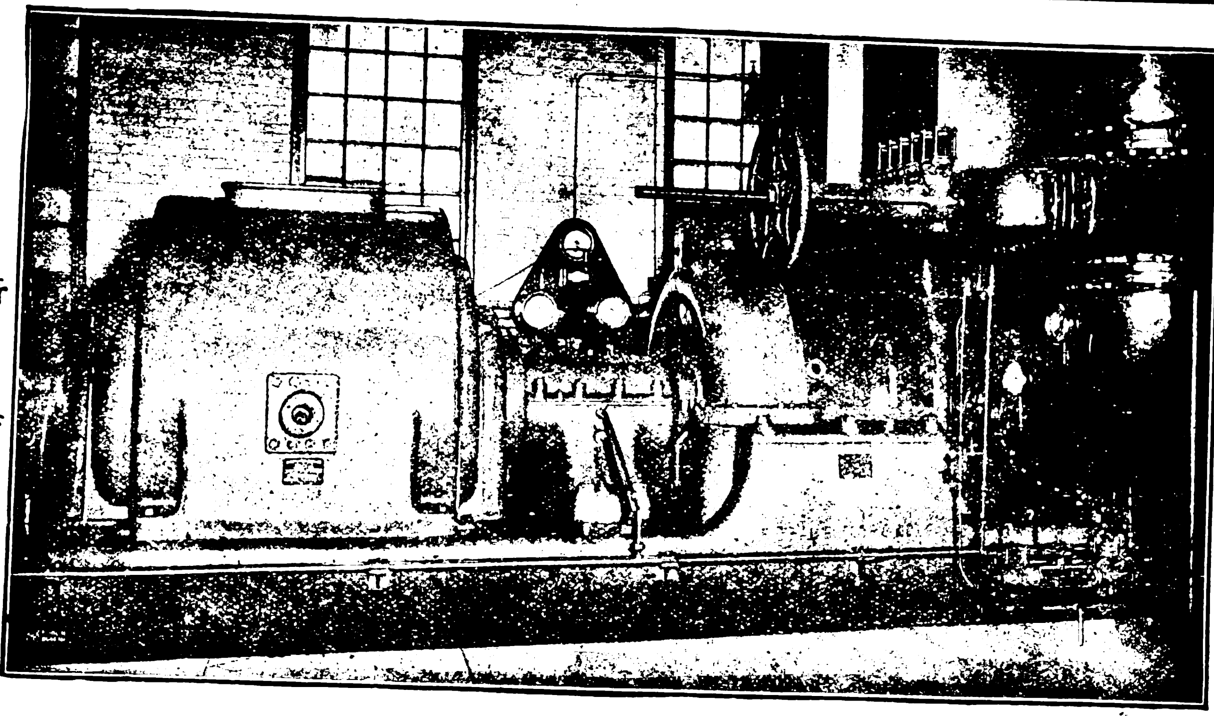
Andersen, Meyer & Co., Ltd.

本行設立已久遐邇馳名專辦歐美各國名廠各種機器所有電燈全廠機器及各項電機電話火車鐵路鋼軸鋼鐵各軌各式車牀刨床測量繪圖儀器並各種汽油機器等件無不俱全所有本行經理之

美國愛特生電汽總公司　英國湯浦電機公司　浦特製造火車公司　漢司火車燈公司　施端林電話公司　范落汽油行船機器廠　右孚亞士工程儀器廠　鄧特摩阿車刨機器廠　馬士維爾石棉廠等均係環球著名各大廠中外馳名

凡賜顧者均知各名廠機器之完善美備也　諸君欲知詳細請移玉至上海圓明園路四號

中國經售處上海慎昌洋行



奇異商標

美國紐約**普通**又名**奇異電汽總公司**爲環球獨步世界第一之電汽製造廠與英國著名**湯輔公司**係屬聯號性質近年新發明一種**透頻汽機**係與磨電機直接相連而用便利異常且自七啓羅滑脫推至二萬啓羅滑脫其汽機之工料無不堅固精良而用煤亦省使用極靈即裝置機件亦能省佔地位誠現今電廠**惟一無二之電機也**此機發明後各國爭相購用僉謂較舊式之電機其使用之利鈍相去殆不可以道里計**又新造一種光明省電之曼士達拉絲燈泡**此燈泡乃本廠獨家創造係以數十年之電學經驗參照美國國家頒定規程研究製造而成故質地既極精良燃點尤能經久發行以後風行全球因其能省電力而光線之足備反出各種新式電燈之上因之銷路日廣愈推愈遠洵爲**電燈泡中之魁首又奇異商標各種電氣風扇**省電多風用久無炙手諸患可免一切危險**又電話機器**式樣玲瓏裝置簡便內地躉購且可代爲裝置餘如各種電燈全廠電機家常裝用之電汽器具並礦機鑽石機升降起重各機轉滾提鍊電機傳電器電汽船大小各廠應用之電機幫浦潔淨機貯水所發電機避電測電等機泉水發光機以及各種海陸軍用電光照遠燈電扇轉動等機凡屬於電汽各項大小機件及各樣附屬之件無不完全齊備　賜顧諸君欲知詳細請　駕臨**上海圓明園路**四號本行寫字間接洽無任歡迎此佈

**中國經理處上海慎昌洋行**

General Electric Company

# 麥康韋討萊公司廣告

The McConway & Torley Co. Janney—Penn. Coupler.

邇來新發明之愛姆西皮近耐形連結俱爲本公司所輸入及研究所得者此連結俱卽近耐形之化身而變成目下最通用之對鎖鎖具及肘節開具爲美國愛姆西皮會所推許玆將各所製造者一一說明於後

對鎖者卽既爲輪制所鎖住則鎖條決不向上活動因下端凸出干連結之空處免致脫節也

鎖具者卽以鎖砧置於連頭之內端俟不連結之端向上轉動時卽按節而合若欲解脫此鎖具當於連結時拔去之

肘節開具卽由最相結連之處或略分開之處開放至最大開放處其運行處自由且肘節開放完備

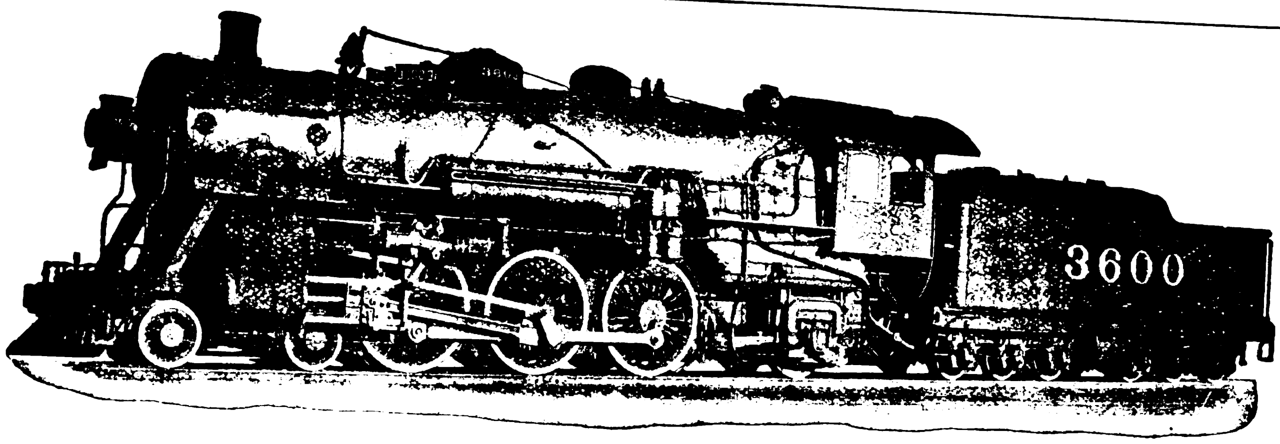
其鎖面形極大約五方吋故能使肘節附合且鎖砧大小適合於連結端之下此連結俱備有各種之附屬品且易於修理此項連結俱爲本公司所專製

總公司開設美國本色萬尼亞省匹此勃

中國經理上海愼昌洋行天津協隆洋行

# 巴爾威機器車頭廠

The Baldwin Locomotive Works




愛克生討庇格散打非各鐵路之太平式車頭

美國搭客之快車中其大半皆有本廠之太平式(四六一二)機器車頭所拖帶此項車頭機器能載重力拖帶重車因機器內包函之力足使速率按時增高也

汽筩長二十六吋闊二十六吋　主動輪直徑七十三吋

汽機壓力二百磅　火爐佔地六十六另十分之七方呎

熱水面積四千四百四十三方呎　加重熱水面積九百八十方呎

主動輪重十七萬二千五百五十磅　機器共重二十八萬八千七百磅　拖力四千一百磅

太平式之機器車頭爲愛克生討庇格散打非鐵路所有爲近世最新式之機器見上圖

此條鐵路爲乘客最多故車行之次數亦多辦法亦妥善

此車頭用油爐特意擴充其極大之力每邊之主動輪之重限五萬八千磅

此項機器已爲本廠帶往巴拿馬萬國賽會場之物件中之一

中國經理 上海 北京 張家口 天津 香港 漢口 愼昌洋行

日本經理東京舍爾法辣薩有限公司

# 美國鋼鐵公司

上海黃浦灘第四號

電碼 'Steelyard' Shanghai

## 專運美國鐵管公司各種物品

並製各式鋼鐵自來水自來火蒸汽等氣管

大小自八分之一至三十寸

隨意配合無不適用

## 汽鍋上應用之鋼管

質料或剛或柔式樣或大或小尺寸或長或短

各式井內所用管子

## 無縫煤氣管或煤油鐵管

其重量能抵三千七百磅壓力

用於各種大壓力煤氣空氣亞馬尼亞及炭氣等物最爲合宜

## 空心鐵柱

用以建築電車軌道電桿德律風桿及各種電氣柱枝

其外尚有各項工程應用之鋼鐵管子

及自來火自來水龍頭等件一應俱全

United States Steel Products Company

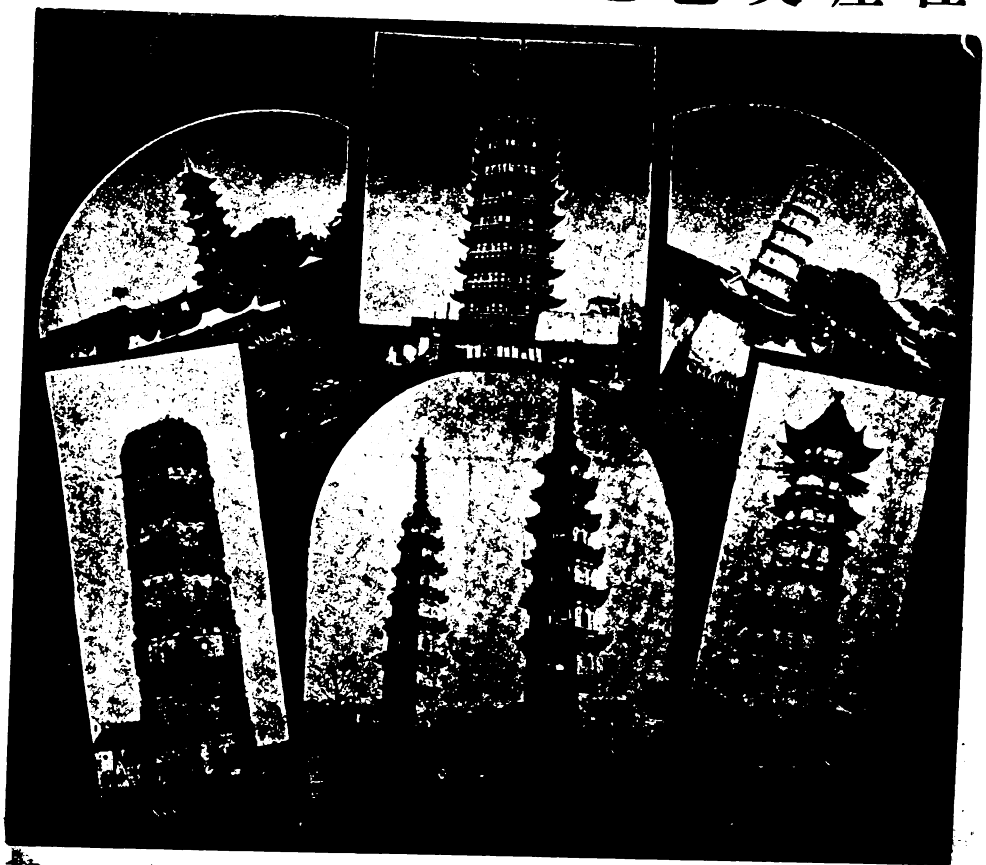
# 滬寧鐵路廣告

Shanghai-Nanking Railway

啓者本路工程均照歐西頭等鐵路最新款式建築軌道堅固車行穩捷往來時刻必依規定各站之候車客房停車月臺不但地方寬敞布置亦極周密往來搭客無擁擠窒塞之虞各等客車座位舒暢氣候咸宜頭二等之車尤爲美麗無匹電燈電鈴電扇厠所盥室色色完備並有餐車隨行以備搭客不時之需西膳茶點酒水俱全價廉物潔衛生合宜每晚加走夜車以便行人睡臥車上設有床位備客休息至淞滬一段之設施亦與幹路無異各站及車上之員司夫役招待搭客處處周到運貨亦甚穩凡速於交通上有益者無不日事改良以臻完備久蒙各界所贊譽倘承

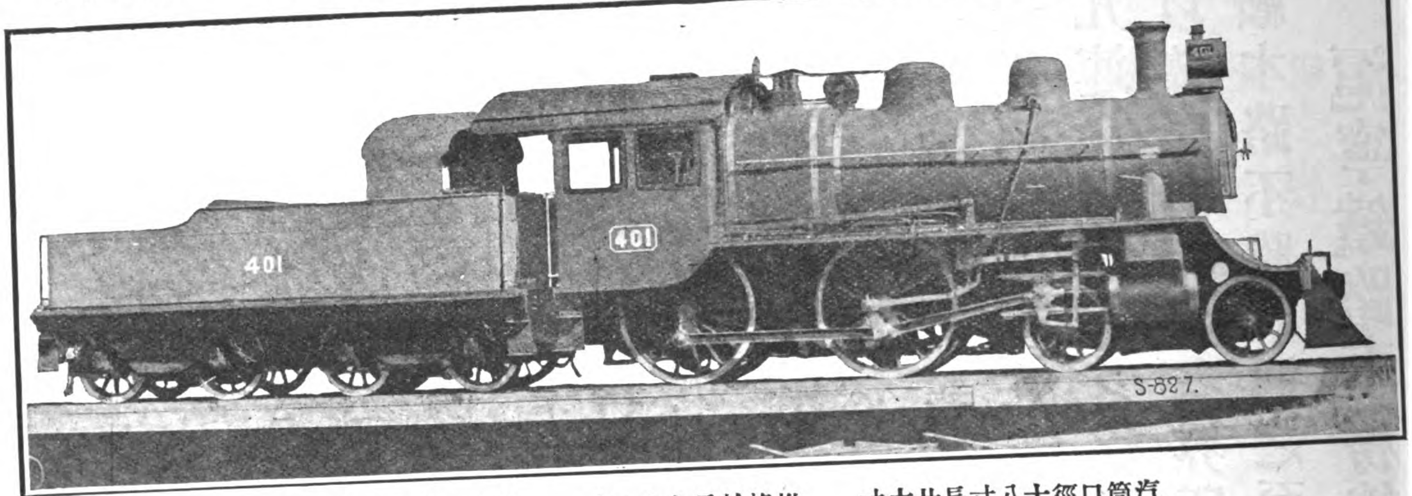
光顧本路不勝歡迎之至

滬寧鐵路車務總管敬啟



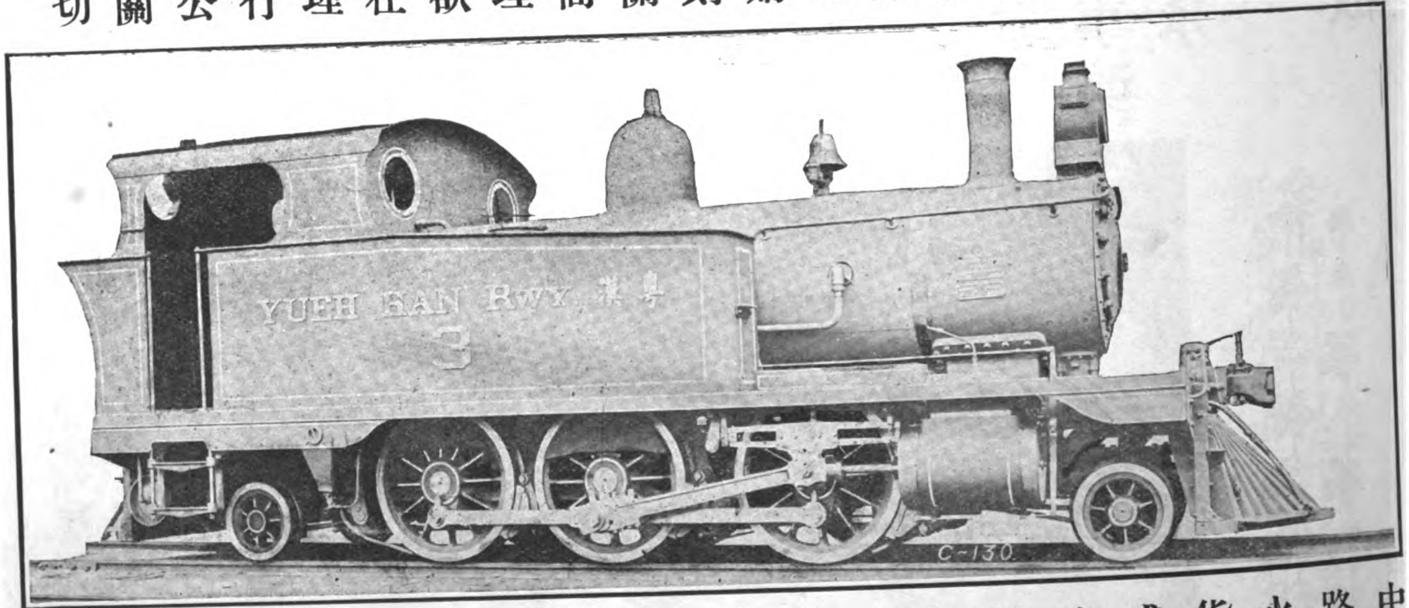
# 美國製造火車公司之火車極合用於中國鐵道

美國所製造之八輪火車頭即近時朝鮮鐵道所用之八輪火車頭甚為合用已著明效拖客車至六輛或八輛其速力計一點鐘可駛二十至四十五英哩之遙按此種機關車式樣用於中國鐵道尤為適宜




汽筒口徑十八寸長廿六寸　推挽輪長七十二寸　拖力一萬七千九百磅

火車頭之製造也在購辦者無不以最新式最適用為貴而製造家亦必以最新式最適用者求合於購辦者之心為能達其目的夫果欲合購辦者之心則必須經機關師之幾番商榷始可辦理如　貴客欲與本公司在中國之經理處三井洋行面商則本公司當派機關師就商一切概不需費




中國粵漢鐵路之六輪雙水櫃車拖帶貨車或客車或貨車客車連帶之列車其速力與上圖記八輪車頭快慢有異者因此車速力較小拖帶列車之數遂少但前後有兩小輪可無旋轉機而能進退自如故駛行之時便捷多矣其特別出色之處即在此兩小輪也

在中國經理處三井洋行上海天津廣東漢口香港廈門盛京

本公司在美京紐約禮拜堂街三十號　電碼

Locomotive New York
Annual Capacity; 3500 Locomotive.

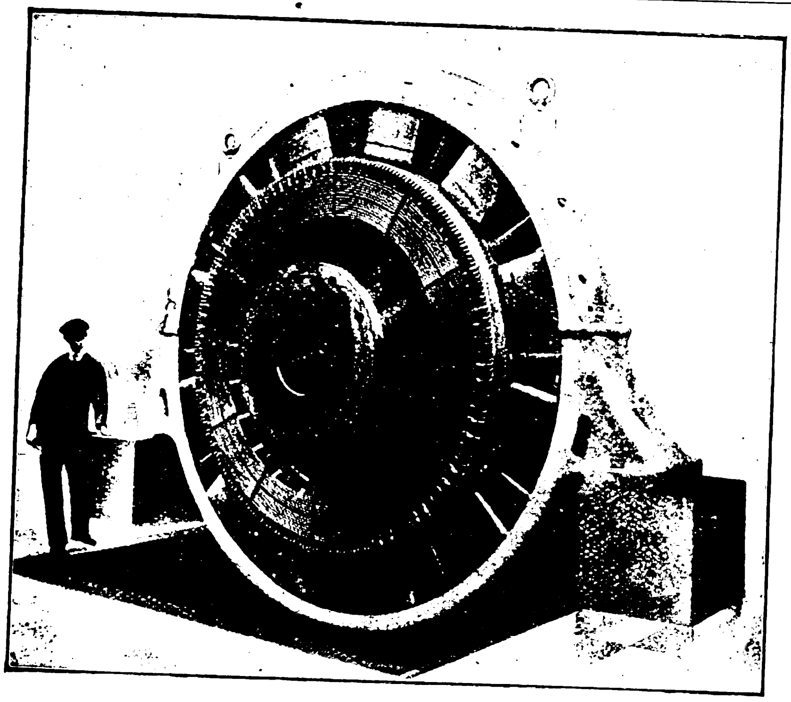
American Locomotive Company

# 佛克耳司有限公司廣告

Vickers Limited

本公司專造各式電機
直接車鈎汽機發電機
旋轉變壓器
脫羅交流發電機
馬達發電機
馬達及轉轍發動機

總公司開設英國京城百勞匯路
工廠在英國昔非特及柏名罕



此圖爲車鈎汽機發電機克羅瓦德一千五百電流自五百至五百三十每分鐘旋轉一百八十次



# 麥加利銀行廣告

Chartered Bank of India, Australia and China

本銀行爲皇家所特許立案之銀行開設於英國倫敦監督門第三十八號
資本英金一百二十萬鎊
公積英金一百八十萬鎊
專做匯兌以及銀行各種營業事務今將經理及分行開列於后

經理處及分行列后

愛立灼 曼谷（暹羅）巴塔菲亞（爪哇）孟買（印度）加爾各答（印度）廣東 西部 可倫坡（印度）特利（印度）福州 海洪 漢口 香港 伊羅伊羅（小呂宋）依巴 卡拉基 克蘭神戶（日本）克拉蘭博 馬特拉司（印度）馬來半島（小呂宋）鈕約 北京 檳榔嶼 卜克 仰光 西貢 式拉卡 上海 新加坡 蘇拉排耶 台浜 天津 橫浜

定期存款可來行面議利息每半年一付每年六月三十號及十二月三十一號爲付息之期

活期存款若在二百鎊以上則按月結算尾款常年利息二厘

本銀行之往來銀行列后

英吉利銀行 倫敦城及米蘭銀行 倫敦府及韋司朋司銀行 英吉利國立地方銀行 蘇革蘭國立銀行

組合司理 活脫海 傅蘭塞
副司理 柏來司登 同啓

# 福祿氏磨機廠

The Fuller-Lehigh Pulverizer Mill.

陳立所中所陳立之機器不下四千架而福祿氏磨機實首屈一指且價廉而又能磨不易磨之各物品 如白煤 石綿石 瀝青砧 硫酸重土 炮克石脫 烟煤 骨煤 炭精 水門汀石 水門汀磚 粉墨炭 金苗 黃泥 煤炭 焦炭 銅苗 白雲石 肉色之石 燒過之黃泥 粉泥石 鑄鐵板面 福祿氏土 玻璃 金石英 黑鉛 石膏 海持來石灰 鐵苗 磁土 鎔巖 石灰 石灰石 砂石 磁鐵石 大理石 赭石 礦苗 螺蛔 漆 燐石 膏 巴得蘭水門汀 拍特立耳礦滓 石英 壳 硅酸 礦滓 石板 雲母石 屈破立 大小砂石 赭鐵礦 皓金 淨白粉

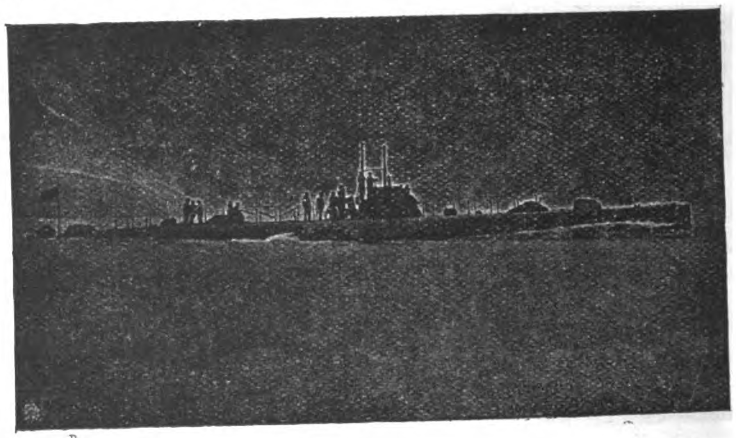
諸君若欲以磨成之煤生爐請查本廠所積之粉煤 用本廠所製展轆壓之用本廠之火轉乾機乾燥之用本廠之磨而粉磨之若承各界光顧請來函索說明書為禱

本廠所出福祿氏牌機器如絞縺 輓輪 齒輪 磨管 砌襯 壓機 磨機

工廠修理以及特式之鑄品均可代辦請閱第五十號目錄可來信索取

萊哈車子車輪車軸工廠白

# 飛愛山喬其哇有限公司出售海軍戰利品廣告



頭等淹沒魚雷艇

水雷坑道

炸藥隧道 消滅敵人水雷之用

形如浮桶之水面炸擊器

海底防範各種之軍械

各種電力發動之快行汽艇

Fiat-San Giorgio, Ltd., Spezia (Italy)

# 日本 長崎 三菱造船廠

**主要製作品**

郵客旅貨便
物石油槽汽
船達頻汽船
快遊船各種
兵船各種汽
機汽鑵及電
氣機械

**特許製作品**

巴遜斯式達
頻同式發電
機斯董式滿
嘎黃銅公杜
拉普羅冷汽
機威耶式抽
水抽氣各機
暨爾特抽氣
機

**海難救助船**

大浦丸(七百拾六噸)

**船渠及船架**

乾船渠叁基
船架壹基而
第叁乾船渠
係蘇士以東
最大者

**工場地基及職工數**

拾叁萬玖千坪
壹萬餘名

Mitsu Bishi Dockyard & Eng. Works

# 美國尼馬司公司廣告

E. I. du Pont de Nemours & Company.

本公司為全球最大之製造炸藥公司專製炸藥轟炸膠及開煤礦用之安全火藥轟炸火藥響墩電氣響以電氣轟炸各種機器已有百年之久素為全球所公認推為本公司所製者為首屈一指

且所製之火藥均包裹妥貼以便運往各國不致有虞

本公司所出安全火藥專用於開煤礦業經由美政府之礦務部試驗審定

本公司有工廠三十所沿太平洋大西洋岸亦有工廠以便運輸

本公司設在美國達耳華省韋銘頓城

若承賜顧請通函為禱

# 大愛門車鏈製造公司廣告

Diamond Chain & Mfg. Co.

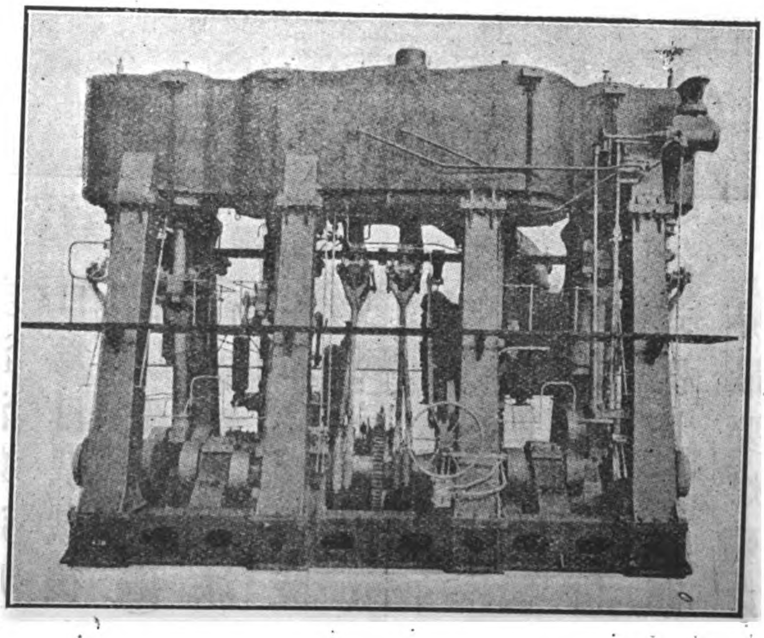
本公司專造各式車鏈如脚踏車氣車自動車馬達貨車以及傳力之各種車鏈均為鋼質造成且為頭等貨物業已二十五寒暑公認大愛門(譯金鋼鑽鏈)鏈為各鏈之泰斗本公司所出之貨物質地堅實應用耐久且製造合度若接定單後即可運輸不論用何種國文字通信均可若欲索樣本目錄或價目表者請來函詢問可也

本公司開設美國印第安省印第安波利斯城

# 英國東北輪船機器公司廣告

North Eastern Marine Engineering Co., Ltd.

本公司專造三次或四次自漲力汽之合抵力汽機及平置水輪以及各種船隻



此圖為四次自漲力汽之合抵力汽機計馬力四千八百匹

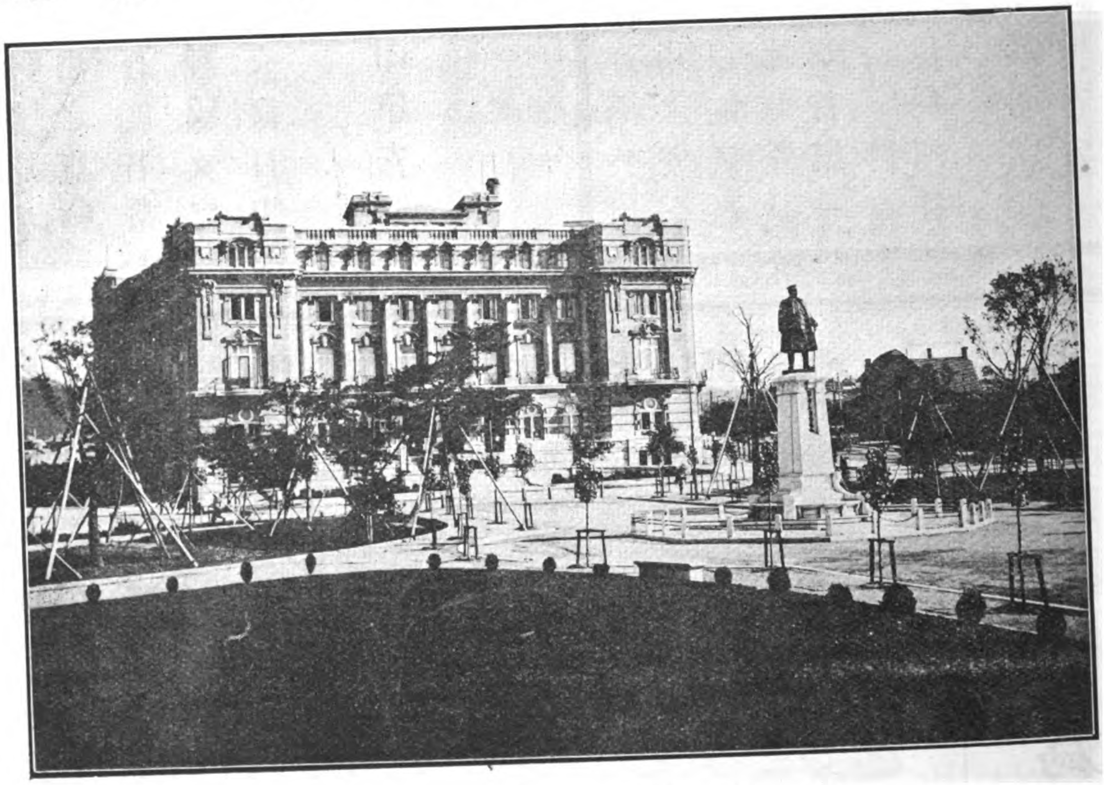
# 南滿鐵路公司廣告

South Manchuria Railway Company, Dairen

諸君何不乘今年假期之時往南滿一遊乎蓋該處地土高燥景緻秀美且爲歷史所載之戰地并有最寬大最佳美之大旅館爲旅行最愉快之地遊擊漁魚打球海水沐浴以及種種遊戲無不可行且更有特異點綴爲近時所改革者

諸君除此外尙有他需乎若一遊於該地待返家後則必神清氣爽爲從來所未有

## 欲知假期消遣之法



大連夏賣多旅館

## 可詢問旅行事務所

除輪軌可達外在大連(爲特異之城)及海口使人興趣)星ケ浦(爲中國北方之最佳美浜海躲避所)旅順口(爲日俄戰後留有毀壞砲臺之處)奉天(爲滿洲之京城有美麗之皇宮皇陵可以參觀)長春(爲東三省之咽喉且有三國鐵路之通系)均設有新式之旅館均仿歐洲式樣且在撫順(爲世界最要煤礦之一)設有總會

諸君若欲知詳細請來信索取有美麗圖畫之指南書不索分文

斐律濱全島銀行即原日之西班牙斐律濱人銀行改名創設在西歷壹千八百五拾壹年　準備資本壹千萬元已收資本銀四百五拾萬元經斐島政府承認有附貯公欵所有銀行營業事宜買賣滙單各埠處如　英國倫敦滙票　法吧黎　西班牙馬德里　吧詩倫那　德國伯林　咸北　澳洲西德尼　舊金山　芝加哥　香港與及一切總滙商市各區由電滙兌及附貯日息長期或逐日收支其利息悉照市面行情酌議另設支行在斐島屬之衣路埠其餘各埠皆設有代理人

倫敦 National Bank of Scotland, Ltd.　巴黎 Comptoir National d'Escompte

馬德里 Banco Hispano Americano　吧斯倫那 Crédit Lyonnais

伯林 Deutsche Bank　西德尼 Bank of New South Wales

紐約 Kountze Brothers　芝加哥 Continental & Commercial Nat'l. Bank

舊金山 Wells Fargo Nevada National Bank　香港 Banque de L'Indo-Chine

上海 International Banking Corporation　斐島詩務 International Banking Corporation.

本銀行寫字樓在嗎尼拉市些灣帝大街門牌第拾號

總理人　樊挨示拂

協理人　馬山洛

The Bank of the Philippine Islands



# 德華銀行

總行在上海分設香港廣東北京天津漢口青島濟南橫濱神戶新加坡加耳各搭柏林漢堡等處資本七百五十萬兩創始於一千八百八十九年利息活存者二釐存款有定期者可向本行詢問兼做各處滙兌總經理苐葛君

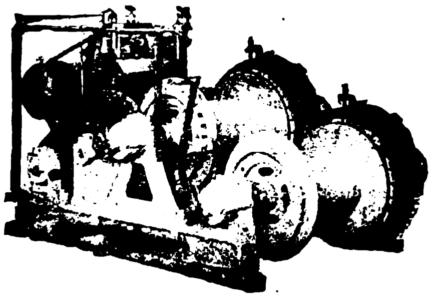
Deutsch-Asiatische Bank



## 立奇華製造公司廣告

Lidgerwood Mfg. Co.

本公司製造扯升機綁司合油或蒸氣或電汽於各處均適用所定造之機器及電升機已不下三萬六千具欲知詳細請來函示知



公司開設於美國紐約省自由街九十六號

歐洲經理處在英國倫敦京城



## 森茂司製造公司廣告

The Simmons Mfg. Simmons Bedsteads.

本公司專造床架爲全球最著名之鐵床廠之冠已有五十年之閱歷且所配料作均精美無匹質地堅實且合於各地之天時水土而款式及模樣爲各國所宜

若欲知詳細式樣請直接來函本公司索取或由經理人間接亦可

開設美國威司根辛省開諾息

# 匯豐銀行

△資本金 一千五百萬元
△英金公積 一千五百萬元
△銀公積 一千六百七十五萬元
△貯備股東應付金 一千五百萬元

定期存款利息額如蒙函詢當即通知需用銀者如以相當之物作抵均可議辦其餘各種銀行交易皆應有盡有匯票則可匯至歐洲印度新金山美洲中國及日本各大商埠

Hongkong & Shanghai Banking Corporation

# 花旗銀行廣告

本行招集資本及歷年贏餘共計美金六百五十萬元總行設在美國紐約城全球通商大埠無不設經理以廣招徠商界遊歷界保信買賣匯票及電匯等事無不辦理妥善以副各界信任茲將已設分行各埠分列於左

孟買 巴拿馬帶 北京
加爾各答(印度) 漢口 舊金山
廣東 香港 上海
色盤 神戶 新嘉坡
哥倫 小呂宋 横濱
墨西哥城 巴拿馬 倫敦

總董侯白登 總理格林

International Banking Corporation

山資本金
一千五百萬元

# The Bank of the Philippine Islands

## FORMERLY BANCO ESPANOL=FILIPINO

(ESTABLISHED 1851)

| | |
|---|---|
| Authorized Capital | P10,000,000.00 |
| Capital fully paid up | 4,500,000.00 |
| Reserve funds | 1,375,000.00 |

**Official Government Depository**

General Banking Business

Buys and sells drafts on London, Paris, Madrid, Barcelona, Berlin, Hamburg, Sydney, New York, San Francisco, Chicago, Hongkong, Yokohama, Kobe, Nagasaki and all other principal cities.

Telegraphic Transfers

Interest allowed on fixed deposits and current accounts at rates which may be had on application.

BRANCHES: ILOILO, ZAMBOANGA

AGENTS:

LONDON: National Bank of Scotland, Ltd.
PARIS: Comptoir National d'Escompte
MADRID: / BARCELONA: Banco Hispano-Americano / Crédit Lyonnais
BERLIN: / HAMBURG: Deutsche Bank
NEW YORK: National City Bank
SAN FRANCISCO: Wells Fargo Nevada National Bank
SEATTLE: Seattle National Bank

CHICAGO: Continental & Commercial Nat'l. Bank
AUSTRALIA: Bank of New South Wales, Sydney.
HONGKONG: Banque de L'Indo-Chine
SHANGHAI: Bank of Territorial Development of China, Ltd. / International Banking Corporation
CEBU: International Banking Corporation
YOKOHAMA: / KOBE: Yokohama Specie Bank, Ltd.
FORMOSA: Bank of Taiwan, Ltd.

PRESIDENT
JNO. S. HORD,

VICE-PRESIDENT
E. SENDRES,

NO. 10 PLAZA DE CERVANTES, MANILA.

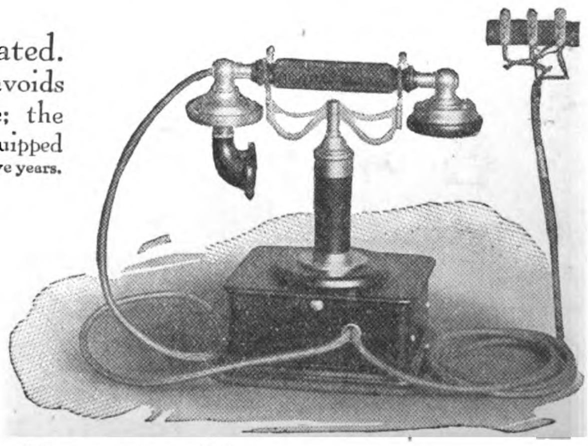
花旗銀行廣告

# KELLOGG SYSTEM—*the Standard Telephone and Switchboard Equipment*

FOR all telephonic purposes—portable telephone service, intercommunication systems, local lines, small magneto exchanges, universal exchange, common battery system—KELLOGG SYSTEM is the most efficient service in the world. The largest or smallest telephone unit supplied.

¶ A popular type of Kellogg Telephone is illustrated. It is a compact and reliable model, and assures a service that avoids trouble and repair expense. The parts are easily accessible; the most convenient type of telephone to use for all conditions and purposes. Equipped with our standard ringer, induction coil and Kellogg transmitter which is guaranteed for five years.

¶ The set can be furnished for magneto or common battery service or with separate bell box and stand, if desired, for wall or table use. Highest quality material used throughout with careful assembling and testing. The price is reasonable and we ship promptly and properly. Built in our own extensive factory. *KELLOG SYSTEM is in Universal use. "USE is the TEST."*



**Write for the KELLOGG BULLETINS, "A fund of information as to the technical working of the telephone apparatus."** ***Sent free on request.***

## Kellogg Switchboard and Supply Company

MANILA
Frank L. Strong Machinery Co.

CHICAGO, U. S. A.

Shanghai, Tientsin, Peking, Kalgan, Hankow, Hongkong, Changsha and Harbin
Andersen, Meyer and Co., Ltd.

THE

# KAILAN MINING ADMINISTRATION

# KAIPING COAL

AND

# COKE

# FIREBRICKS

***For all information, apply to:—***

| | TELEGRAPHIC ADDRESS: |
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| Head Offices, Tientsin | MAISHAN |
| Agent, 1 Jinkee Road, Shanghai | KAIPING |
| Dodwell & Co. Ltd., Hongkong | MAISHAN |
| C. Monbaron, Hankow | MONBARON |
| E. G. Clarke, Peking | AMALGAMATE |
| Paterson Simons & Co., Singapore | PATERSON |

上海英界仁記路第五號

# THE FAR EASTERN REVIEW

遠東時報

SHANGHAI ✣ PEKING ✣ MANILA

Vol. XIII., No. 4

September, 1916

GENERAL TUAN CHI-JUI
CHINA'S PREMIER AND MINISTER OF WAR

SHALLOW DRAUGHT LAUNCH—YARROW SYSTEM,
*built by*

# YARROW & CO., L^TD., Glasgow,

*(formerly of Poplar, London).*

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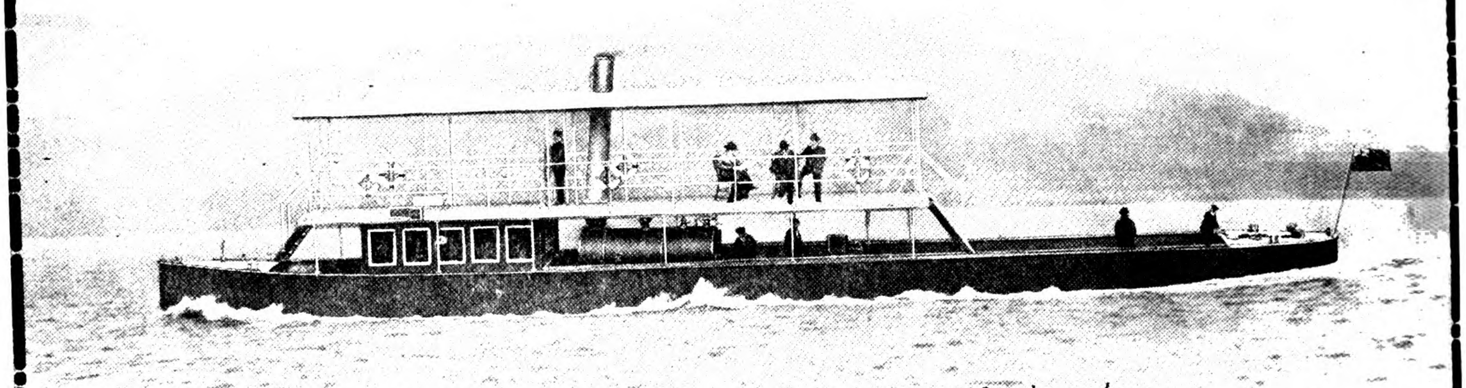

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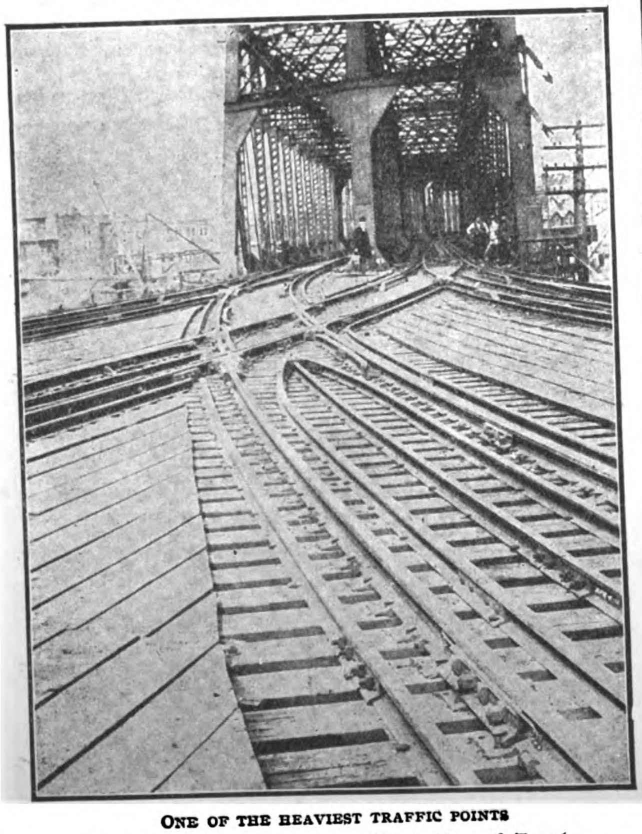

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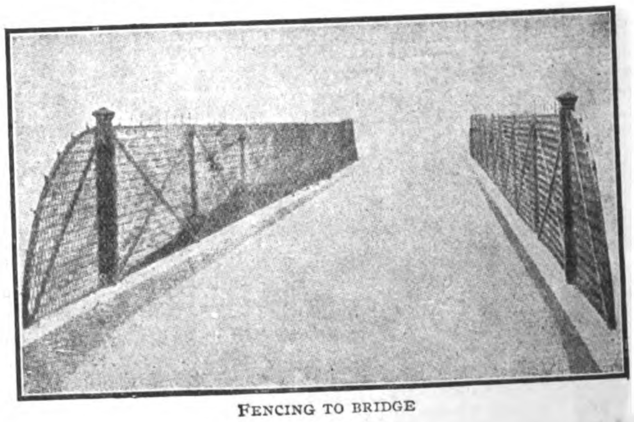

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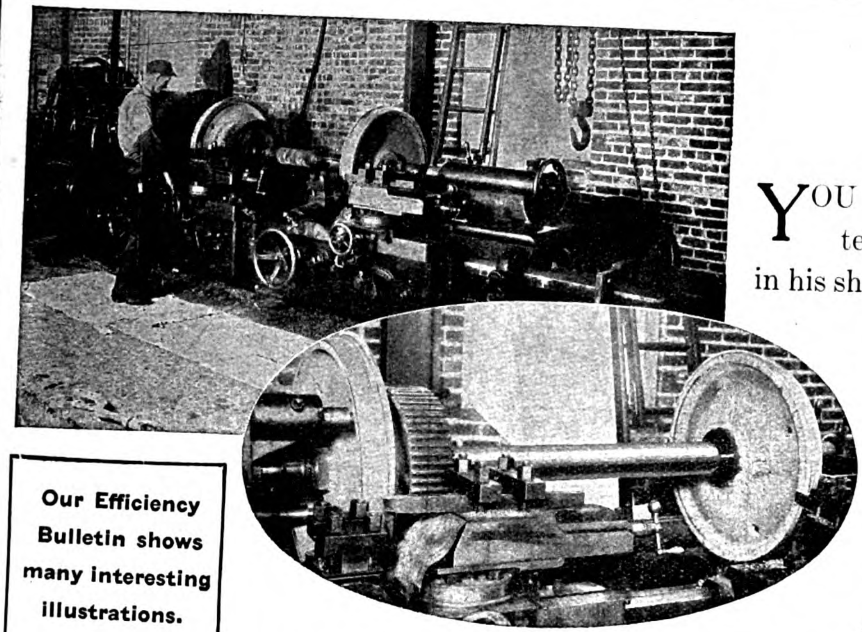

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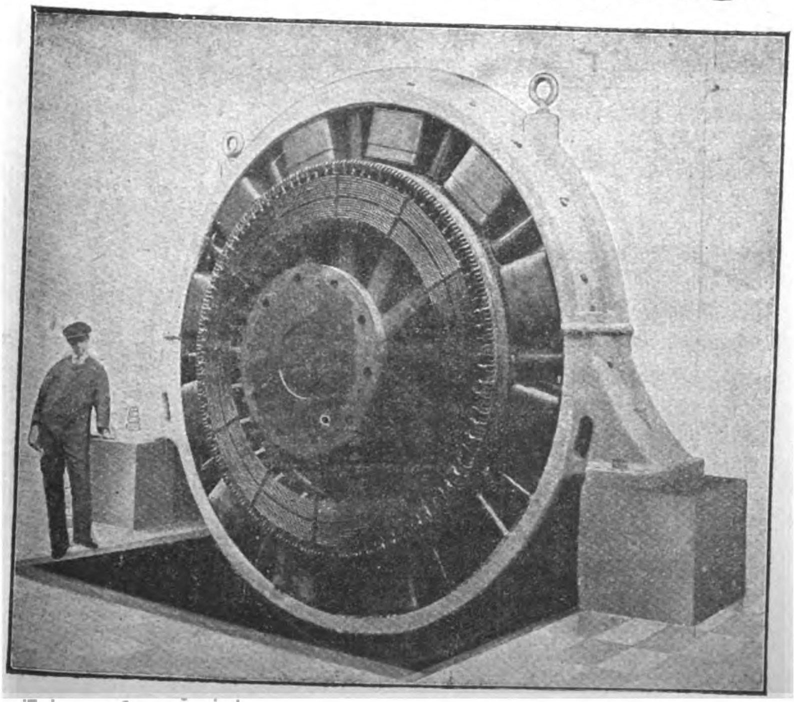

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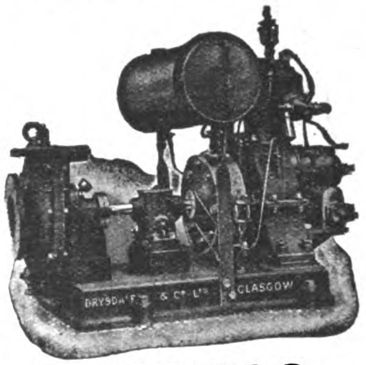

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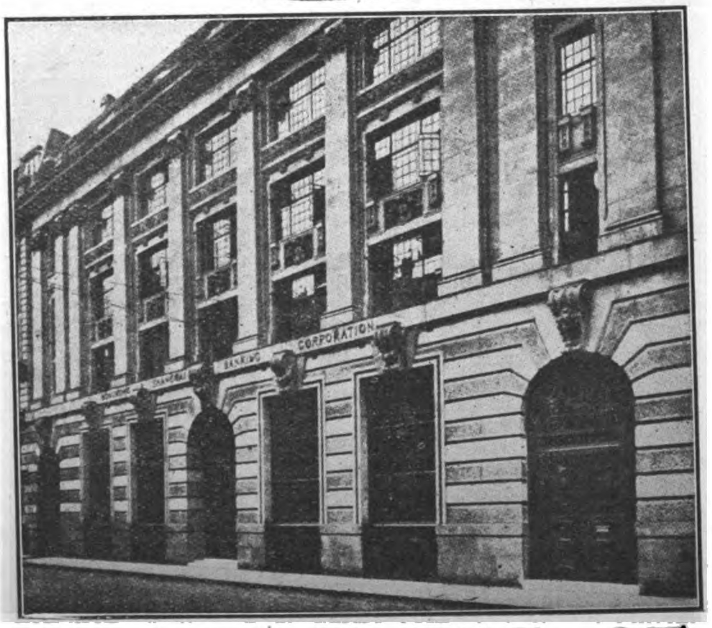

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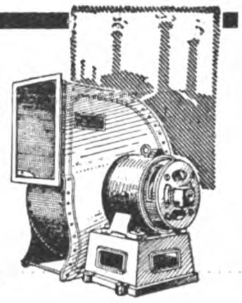

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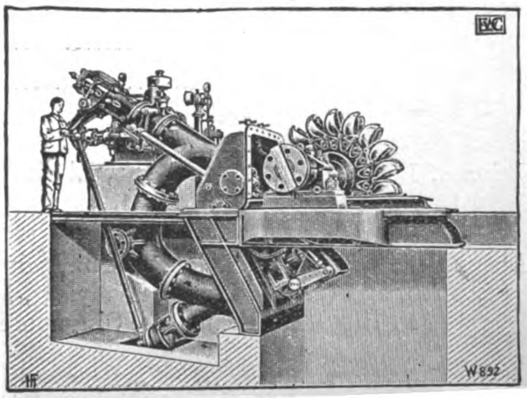

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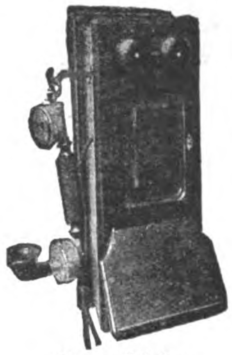

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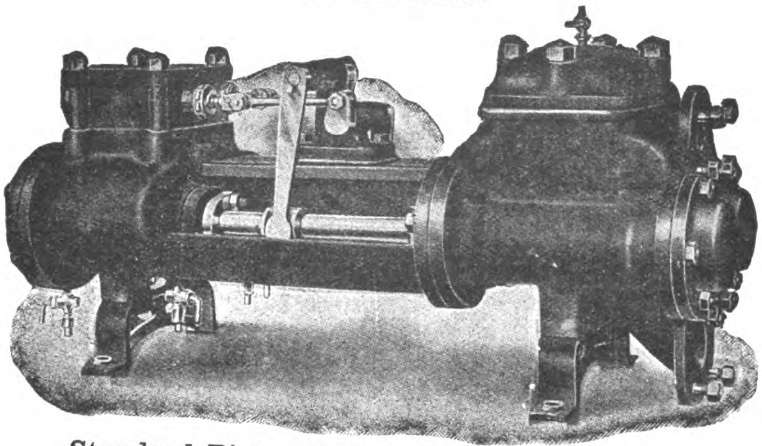

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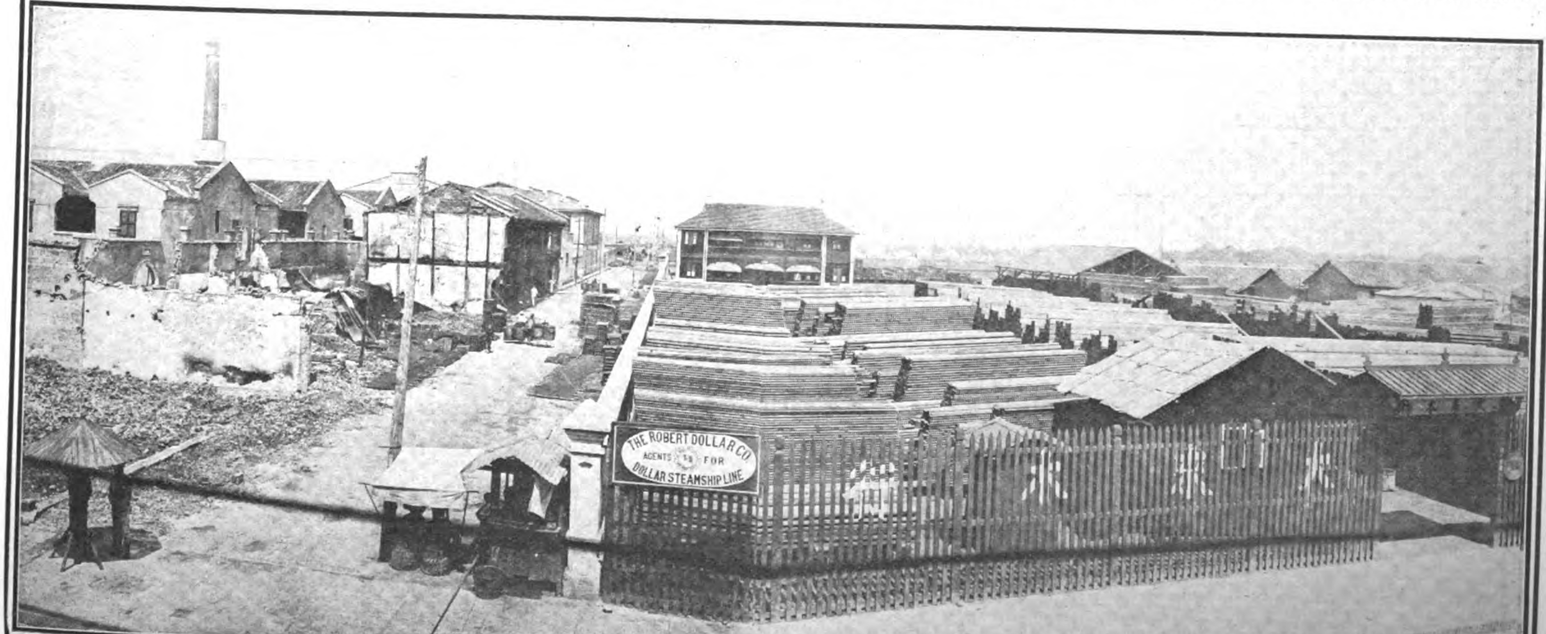


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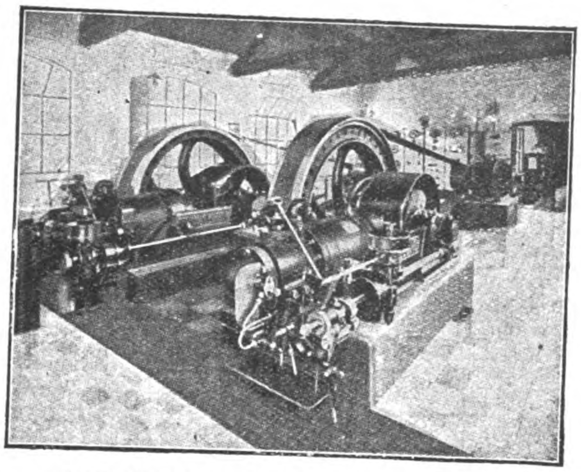

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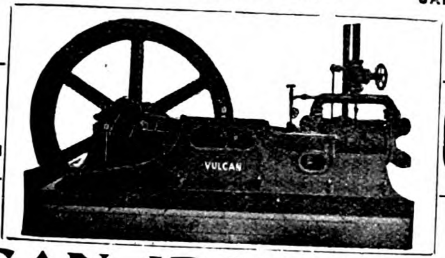
VUL  CAN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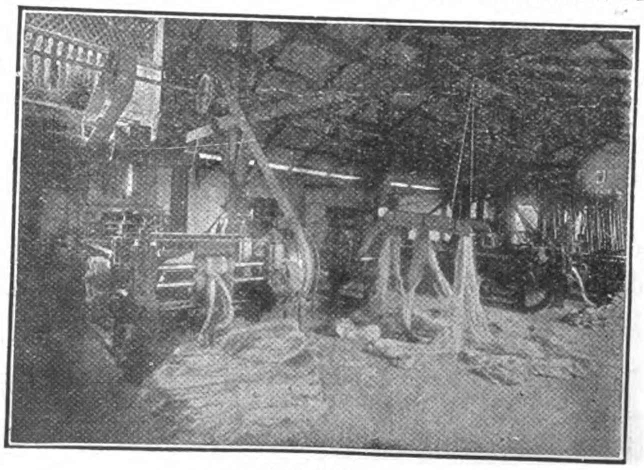

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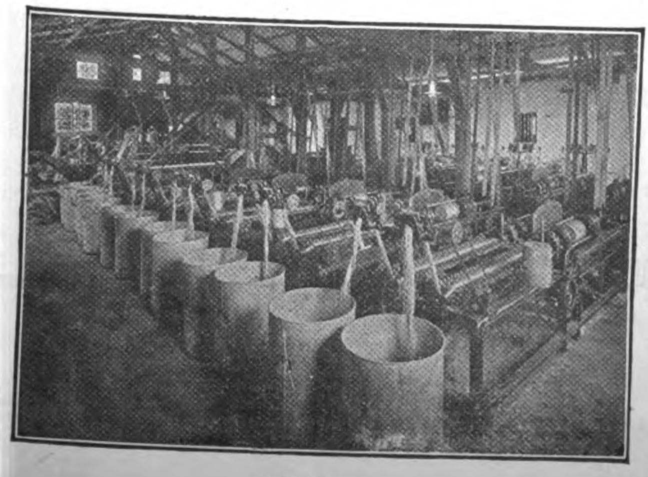

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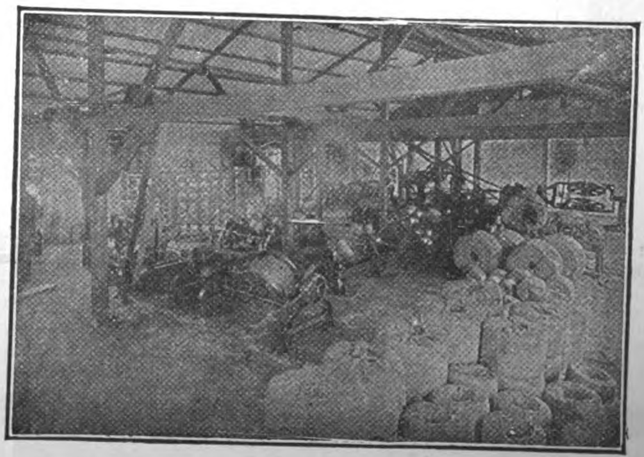

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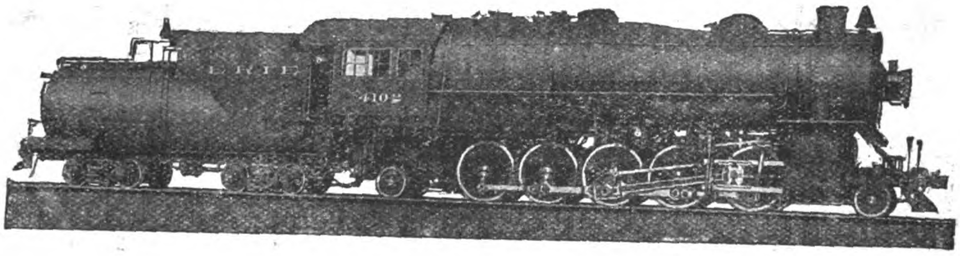
# LONG WHEEL BASE ON SHARP CURVES



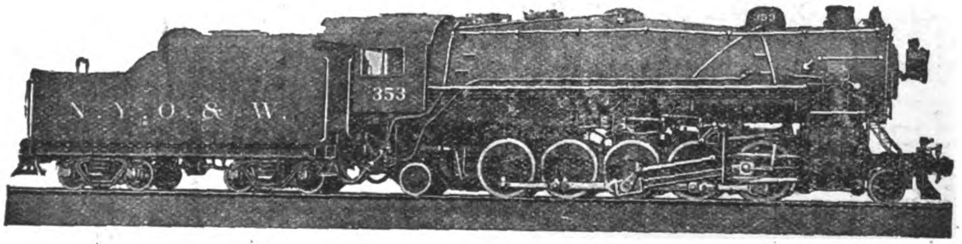
ERIE RAILROAD
Total Weight of Engine, 401,000 pounds; Weight on Drivers, 335,500 pounds; Diameter of Drivers, 63 inches; Tube Length, 17 feet; Boiler Pressure, 200 pounds; Cylinders, 31x32 inches; Maximum Tractive Power, 83,000 pounds

The objection to a long rigid wheel base has been removed in the design of the two 2-10-2 type locomotives illustrated, by the application of a lateral motion driving axle and boxes, which reduce the rigid wheel base of the 2-10-2 type to that which is in common use on locomotives of smaller capacity.

The lateral motion driving box provides enough initial resistance so that for any ordinary road service on tangent track or road curves the first driver will remain in normal position and deflect only when passing through turnouts and yard curves.

When the locomotive passes through sharp turnouts or is operating around yards, the lateral motion driver will deflect, and prevent the cramping of the driving wheel base in the curve and excess pressure upon the driving wheel flanges.

The operation of the device in service has clearly demonstrated the correctness of the design in this particular.



NEW YORK, ONTARIO & WESTERN RA LWAY
Total Weight of Engine, 352,500 pounds; Weight on Drivers, 293,000 pounds; Diameter of Drivers, 57 inches; Tube Length, 17 feet; Boiler Pressure, 190 pounds; Cylinders, 28 x 32 inches; Maximum Tractive Power, 71,200 pounds

## AMERICAN LOCOMOTIVE SALES CORPORATION

30 CHURCH STREET, NEW YORK, U.S.A. Cable Address:—LOCOMOTIVE NEW YORK

## MITSUI BUSSAN KAISHA, LIMITED

(Mitsui and Company)

Sole Agents for China, Japan, Korea, Manchuria and Siam.

THE YELLOW RIVER BRIDGE ON THE PEKING-HANKOW LINE

CHINESE GOVERNMENT RAILWAYS

# PEKING-HANKOW LINE

"THE ROAD THROUGH THE HEART OF CHINA"

## Avoid the Cold and Rough Weather in the Sea Trip between Shanghai and the North by the more comfortable Route up the Yangtsze to Hankow, and from there via the Ching-Han Railway to Peking, where through connections for Europe are made with the Trains de Luxe of the Government Railways of North China.

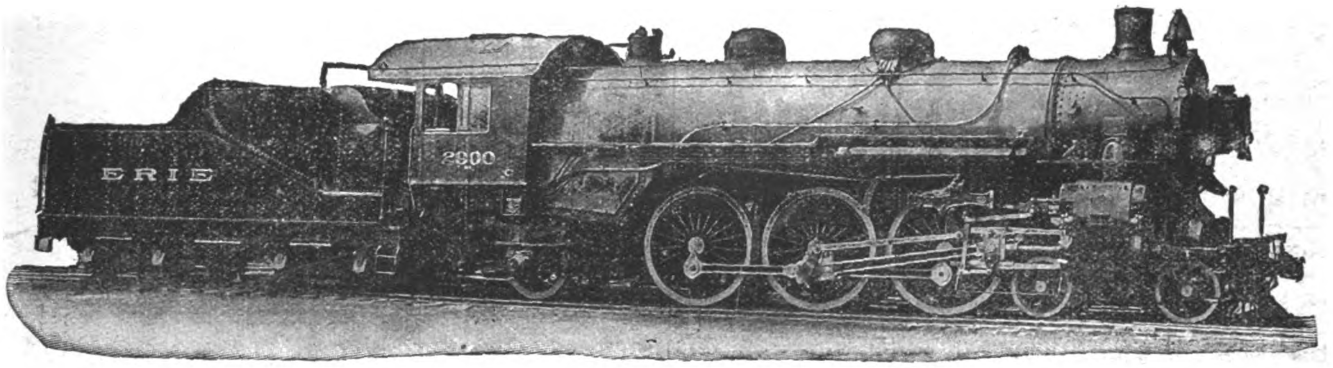
This line passes through the Heart of the Country and enables the traveller to and from Europe to catch a glimpse of Old China. Ancient walled cities, temples and pagodas are seen from the comfortable seats of the weekly trains de luxe operated by this line. From Peking, the great capital of the oldest civilization in the world, the train departs from the famous Chien-Men and carries the traveller through the historical and legendary portions of the Country, to the modern industrial center at Hankow—the Chicago of China. Connections are made with the Cheng-Tai Railway at Chengtingfu, with the Tao-Ching Line at Sin Siang-sien, and at Chengchowfu with the Pienlo Line.

A weekly express train de luxe leaves Peking every Tuesday, and Hankow every Friday, making the trip of over 700 miles in less than thirty hours.

**For information apply to any office of the International Sleeping Car Co. or Thos. Cook and Sons.**

# Lima Locomotive Corporation

**Builders of all Classes of Motive Power. Capacity 720 to 1,000 per year**




**Heavy Pacific Type Built for Erie Railroad**

## LIMA HEAVY PACIFIC TYPE

This locomotive combines the latest improvements and developments in design, materials and economic devices for saving fuel, etc.

Built for the **ERIE RAILROAD** for heavy fast passenger service where maximum capacity was desired.

GENERAL DIMENSIONS AS FOLLOWS:

| | |
|---|---|
| Cylinders, 27 × 28 inches | Weight on drivers, 176,000 lbs. |
| Driving wheel base, 14 ft. | Total Weight, 287,000 lbs. |
| Total Wheel base, 36 ft. 2 inches | Tractive Power, 40,700 lbs. |
| Drivers, diameter 79 inches | Factor Adhesion, 4.24 |
| Boiler, straight locomotive type | Superheater, Schmidt |
| Boiler diameter 79 inches | Valve motion, Baker |

Our **PLANT** is equipped with the latest and most improved machinery, which enables us to build any type or size locomotive required.

Write our Agents for any information you desire and a copy of our catalogue.

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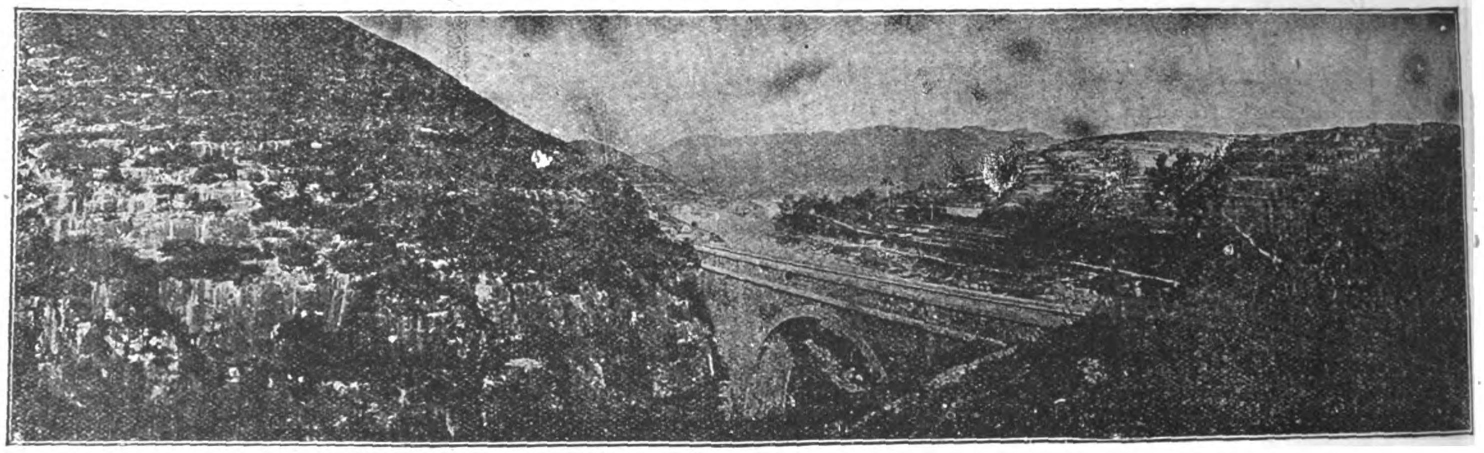
AGENTS
SAMUEL, SAMUEL & CO.,
YOKOHAMA, TOKYO, KOBE, SHIMONOSEKI, JAPAN; TAIPEH, FORMOSA

# Chinese Government Railways

## *The Cheng-Tai Railway*

*(CHINESE GOVERNMENT SHANSI LINE—CHENGTINGFU TO TAIYUANFU)*

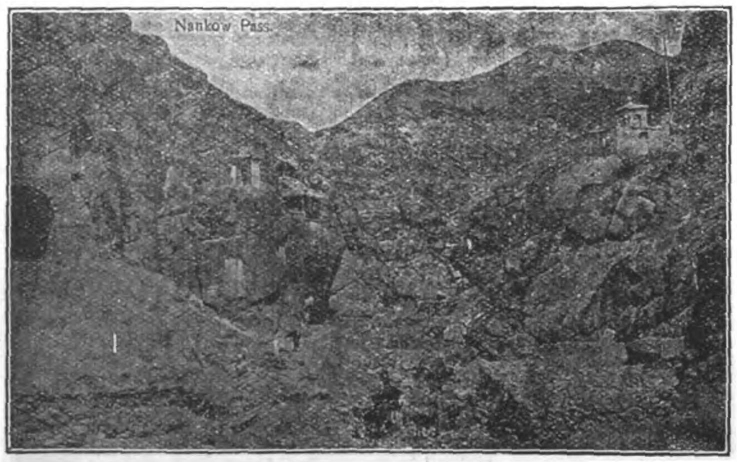


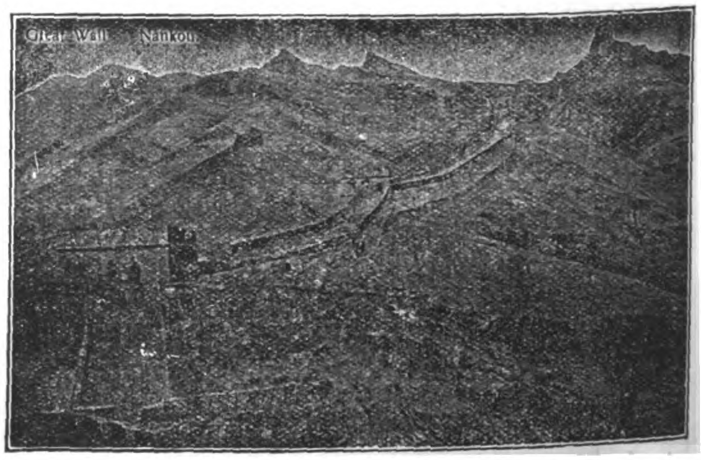
VIEWS ALONG ROUTE OF CHENG-TAI RAILWAY

The trains of this line connect with the through service of the Peking-Hankow Railway, affording Travellers the opportunity of seeing the most picturesque part of China. The line passes through a mountainous section of country, rich in Mineral Resources to the Provincial Capital of Shansi at Taiyuanfu. This interesting city is a great educational center, and famous for the fine quality of its artistic embroideries.

## *The Peking-Kalgan Line*

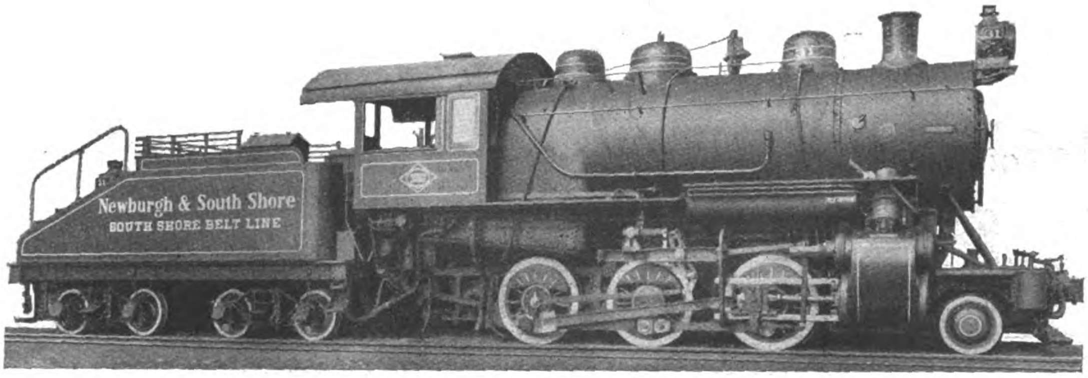
*"THE ROAD TO THE GREAT WALL"*



This line follows the ancient caravan route and military highway from Mongolia into China by the way of the historic Nankow Pass. This pass is the Key to Peking, and Kalgan is the gate of the Country. From here the great camel caravans set out on their long journeys across Mongolia to Siberia and Central Asia. This old frontier mart, retaining its time-honored characteristics, one of the most interesting sights of the Old World, is made accessible by the new railway. The line also carries the passenger in two hours from Peking to Nankow, when the Great Wall of China and the Ming Tombs may be seen. A foreign hotel is operated by the railway authorities at Nankow, where chairs and guides may be secured for the Tombs.

# MOGUL TYPE LOCOMOTIVES




MOGUL TYPE LOCOMOTIVE, NEWBURGH & SOUTH SHORE RY. CO.

Cylinders, 23×26"
Driving-wheels, diameter, 52"
Steam pressure, 180 lbs.
Grate area, 50 sq. ft.
Water heating surface, 2256 sq. ft.
Superheating surface, 494 sq. ft.
Weight on driving-wheels, 163,800 lbs.
Weight, total engine, 185,500 lbs.
Tractive force, 40,500 lbs.

Locomotives of the Mogul (2-6-0) type are comparatively seldom used for main line service in the United States. The Mogul, however, is an excellent type for industrial freight service, as it is simple in construction and carries a high proportion of its total weight on driving-wheels.

The locomotive illustrated is used in heavy industrial work about steel mills, on grades of 60 feet per mile and curves of 230 feet radius. As the track is laid with rails weighing 90 pounds per yard, heavy wheel loads can be safely carried. The locomotive is designed to develop the highest tractive force consistent with the weight on driving-wheels, and the hauling capacity is large for an engine of this type. Features of the boiler design include a wide firebox, superheater, and brick-arch. The throttle-valve is fitted with an auxiliary drifting valve, which is opened by a slight movement of the throttle lever. When the engine is running with main throttle closed, a small amount of steam can be admitted through the drifting-valve, thus breaking the vacuum in the cylinders and aiding in their lubrication.

A large number of Baldwin locomotives of the Mogul type, are in service on railways in the Far East.

## THE BALDWIN LOCOMOTIVE WORKS

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**Agents for China:—ANDERSEN, MEYER & Co., Ltd., SHANGHAI, TIENTSIN, PEKING, KALGAN, HONGKONG, HANKOW, CHANGSHA, and HARBIN**

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# Why not Spend This Year's Holiday in South Manchuria?

Magnificent Climate, Beautiful Scenery, Historic Battlefields,
Hotel Accommodation of the Best, Comfortable Travelling.
Good Shooting, Capital Fishing, Fine Golfing, and Sea Bathing ad lib.,
Combined with the Distinctive Quaintness of the Country undergoing the most
Striking Evolution of Modern Times.

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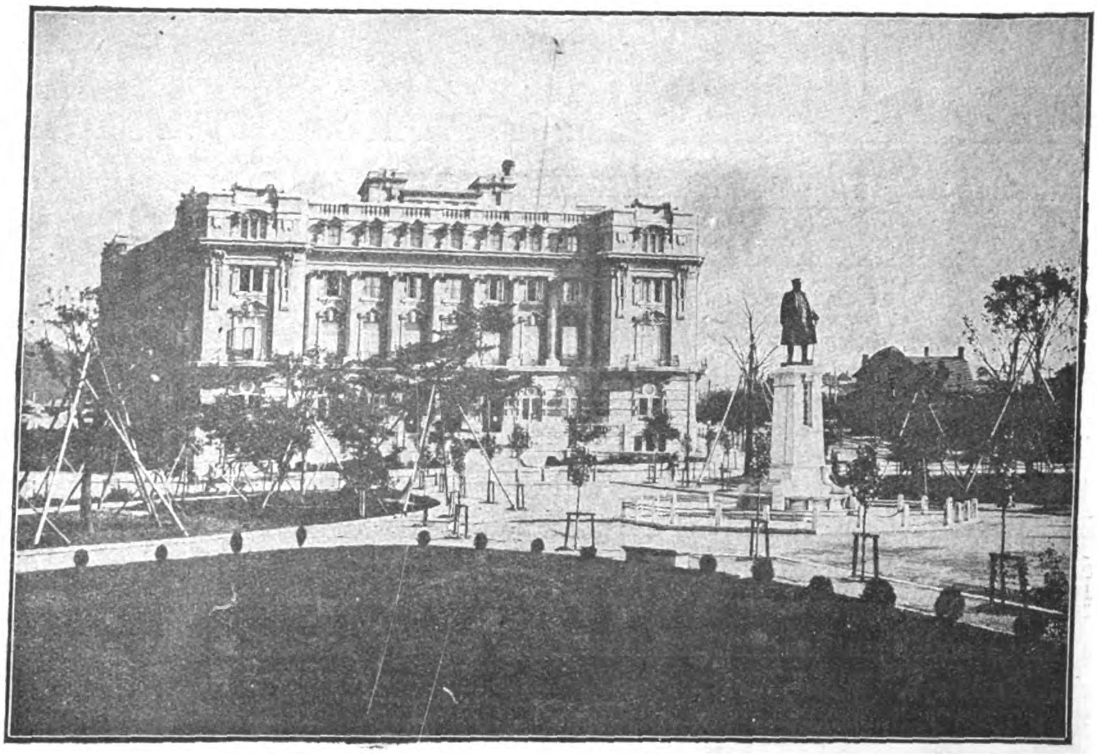
All this and much more can be obtained in South Manchuria at moderate outlay,
and you will return from the trip charmed, revived, and
invigorated as never before.

**Ask the Travel Offices what they think**



**Of this Holiday Scheme.**

YAMATO HOTEL, DAIREN

In addition to its Train and Steamer Services, the South Manchuria Railway Company provides Modern Hotels on European lines at Dairen (whose phenomenal rise as a City and Port affords interesting study), Hoshigaura (the finest seaside resort in North China), Port Arthur (where the ruined forts are maintained just as they were left at the close of the Russo-Japanese War), Mukden (the Manchu Capital where the picturesque Imperial Palaces and Tombs may be inspected), Changchun (the key of Manchuria and the junction for three Railways), and gives equivalent to European Hotel accommodation at its Club at Fushun (one of the most important Collieries in the World).

Information on any subject and a beautifully Illustrated Guide Book supplied gratis by the

## South Manchuria Railway Company,

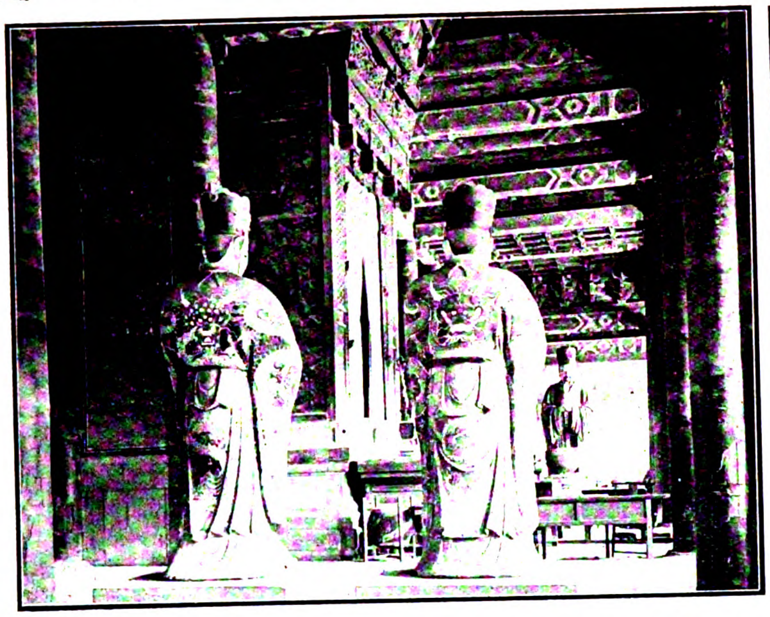
**DAIREN.**

Telegraphic Address:
**Mantetsu.**

Codes: A.B.C. 5th Edition,
A. 1., & Lieber's.

# CHINESE GOVERNMENT RAILWAYS

# TIENTSIN-PUKOW LINE



**Mukden-Peking-Kalgan-TIENTSIN-TSINANFU-HSUCHOWFU-PUKOW-Nanking-Shanghai.**

**all by rail only.**

Being the **quickest, surest and most convenient** connection between Shanghai on the one and Tientsin, Peking, Kalgan, Mukden and the **Siberian route on the other side,** this railway represents **a saving of many hours, of many troubles,** worries and inconveniences for the busy merchant, the home tripper on short furlough.

The tourist, the globe trotter travelling with more leisure and bent on seeing things, it takes right away from the stereotyped banality of the great ports, takes him through many provinces of the vast republic and shows him **something of the "real" China,** of its people, its history and its beauty.

Express trains equipped with sleeping and buffet cars run once a week each way between Pukow (Nanking) and Tientsin connecting with the through service of the South-Manchuria and Trans-Siberian Railways.

Through mail trains equipped with **buffet cars run daily each way** between the before mentioned termini.

The crossing over the Yangtsekiang between Nanking and Pukow is effected by means of a modern 100-tons twin-screw ferry boat.

Special facilities and **liberal allowances** for passengers' baggage.

Best of **meals and wines supplied** on the trains.

Sanitation under the personal supervision of a **qualified medical officer.**

For further particulars apply to THE TRAFFIC MANAGER, Head Office, TIENTSIN or to the Agencies of Messrs. Thomas Cook & Sons, The International Sleeping Car & Express Trains Co. or the Nordisk Resebureau.

Telegraphic Address: TSINPURY—Tientsin (Tsinanfu, Nanking, Shanghai).

Codes: A B C 5th Edition; Broomhalls' (with Suppl. No. 1).

**Tientsin, May 1st, 1915.** **The Tientsin-Pukow Railway Administration.**

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OUTPUT { 150,000 FREIGHT CARS
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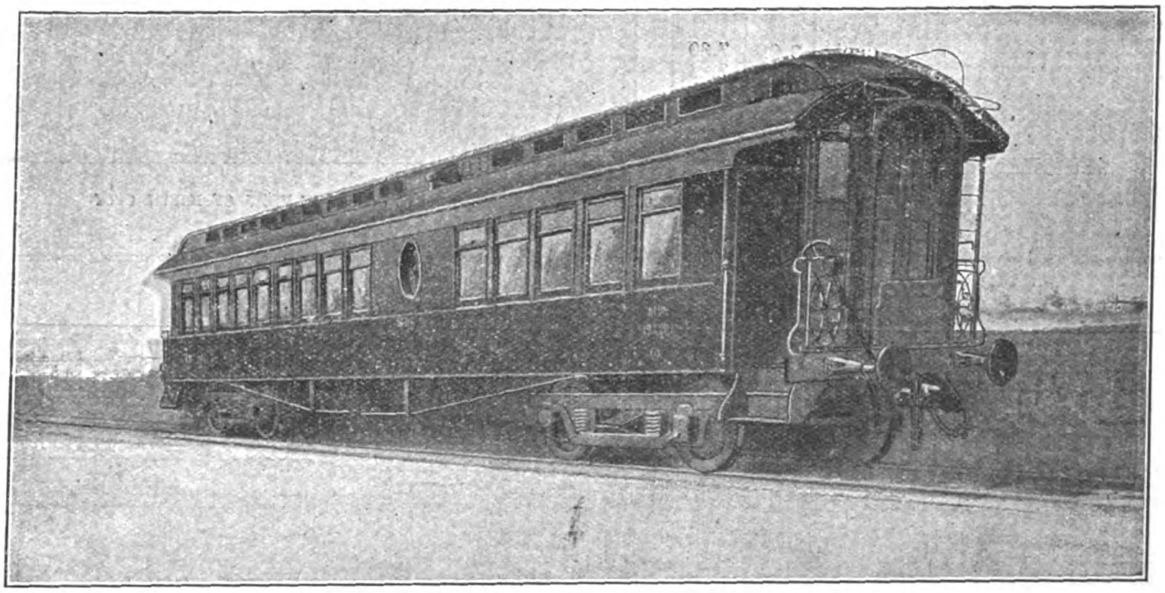
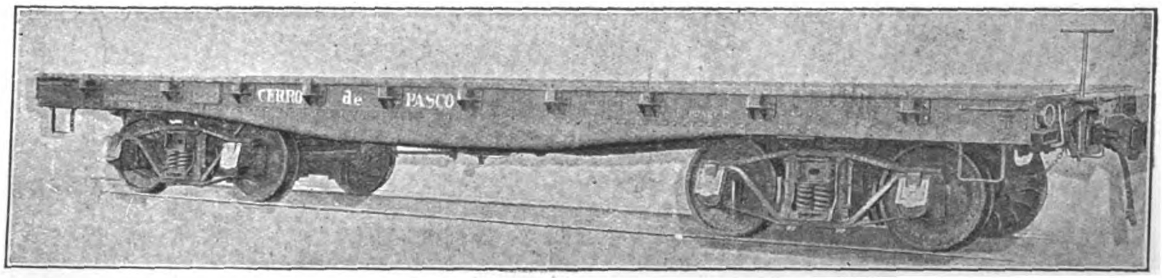


FIRST CLASS CARRIAGE FOR ITALIAN STATE RAILWAYS
Gauge 4′-9″ (1.447 M.). Length 51′5″ (15.670 M.). Places 56. Weight 63,550 lbs. (28,900 Kilos.)
For Intercirculation in Italy, Switzerland and France.




FOR USE IN PERU
Gauge 4′-8½″ (1,435 M.). Length 34′-5½″ (10,500 M.). Capacity 80,000 lbs. (36,400 K.). Net Weight 30,500 lbs. (13,800 K.)

Export Representative

## American Car and Foundry Export Company

165 BROADWAY NEW YORK

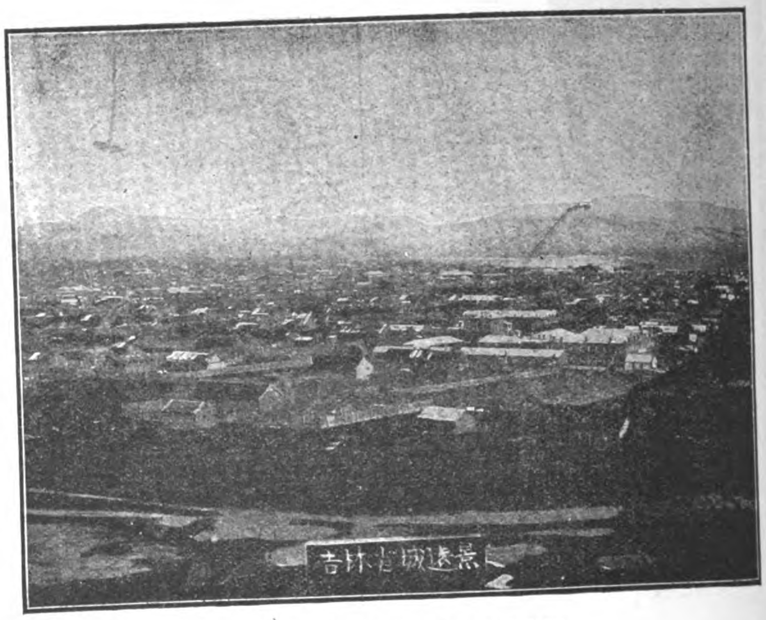
# 中華民國政府吉長鐵路行車時刻表

# CHINESE GOVERNMENT RAILWAYS KIRIN-CHANGCHUN LINE.

## TIME TABLE.

| DOWN TRAINS Daily Mixed | DOWN TRAINS Daily Mail | | STATIONS. | | UP TRAINS Daily Mail | UP TRAINS Daily Mixed |
|---|---|---|---|---|---|---|
| P.M. | A.M. | | | | P.M. | A.M. |
| 2.50 | 7.30 | dept. | TOUTAOKOU | arr. | 6.10 | 10.47 |
| 2.58 | 7.38 | arr. | CHANGCHUN | dept. | 6.00 | 10.37 |
| 3.05 | 7.41 | dept. | | arr. | 5.55 | 10.31 |
| 3.39 | 8.12 | arr. | KALUN | dept. | 5.24 | 9.57 |
| 3.43 | 8.14 | dept. | | arr. | 5.22 | 9.55 |
| 4.15 | 8.46 | arr. | YINMAHO | dept. | 4.50 | 9.22 |
| 4.18 | 8.48 | dept. | | arr. | 4.48 | 9.20 |
| 4.33 | 9.02 | arr. | HSIACHIUTAI | dept. | 4.34 | 9.05 |
| 4.38 | 9.04 | dept. | | arr. | 4.32 | 9.03 |
| 4.50 | 9.16 | arr. | YINGCHENGTZE | dept. | 4.20 | 8.50 |
| 4.53 | 9.18 | dept. | | arr. | 4.18 | 8.48 |
| 5.18 | 9.40 | arr. | TUMENLING | dept. | 3.56 | 8.24 |
| 5.26 | 9.50 | dept. | | arr. | 3.50 | 8.18 |
| | | arr. | CHAOCHIATIEN | dept. | 3.31 | 7.58 |
| 5.45 | 10.10 | dept. | | arr. | | |
| 6.09 | 10.31 | arr. | HUAPICHANG | dept. | 3.09 | 7.30 |
| 6.14 | 10.33 | dept. | | arr. | 3.07 | 7.23 |
| 6.30 | 10.46 | arr. | KUTIENTZE | dept. | 2.54 | 7.05 |
| 6.32 | 10.47 | dept. | | arr. | 2.53 | 7.03 |
| 6.49 | 11.03 | arr. | KIUCHAN | dept. | 2.37 | 6.48 |
| 6.53 | 11.05 | dept. | | arr. | 2.35 | 6.43 |
| 7.15 | 11.25 | arr. | KIRIN | dept. | 2.15 | 6.20 |

NOTICE:—"dept."=Departure. "arr."=Arrival.
1st July, 1916, and until further notice.

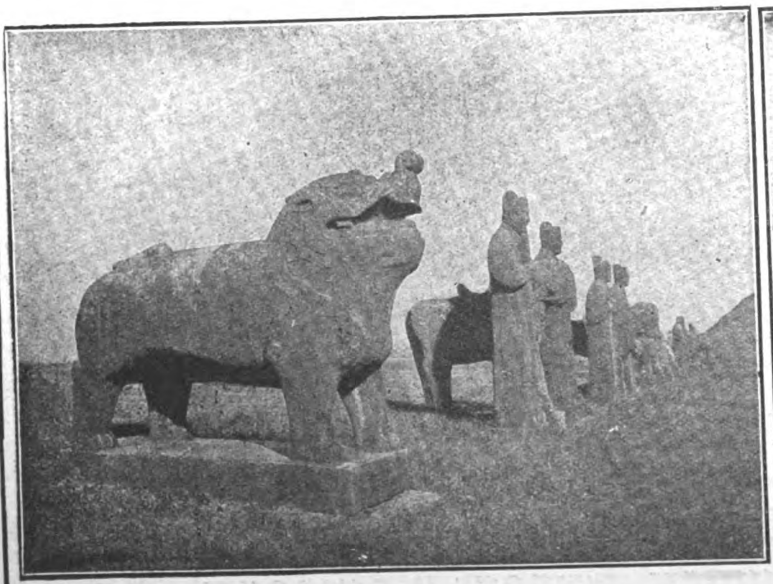


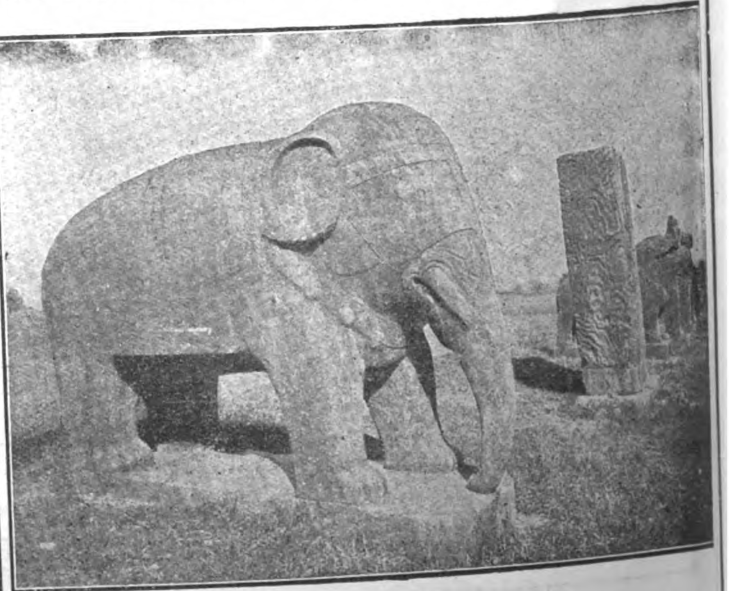
BIRD'S EYE VIEW OF KIRIN CITY

# THE PIENLO RAILWAY

## (KAIFENG-FU TO HONANFU)

## "THE FIRST SECTION OF THE PROJECTED CENTRAL TRUNKLINE"





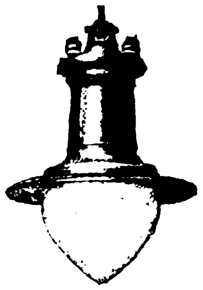
THE SUNG TOMBS NEAR KAIFENG-FU ON THE PIENLO RAILWAY.

The line connects with the through service of the Peking-Hankow Railway at Tcheng Tchéou, enabling the traveller to visit Kaifengfu, the provincial capital of Honan, and the old capital of the Empire at Honanfu.

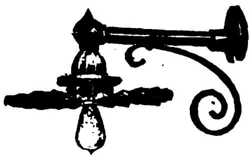
# General Electric Company

## Schenectady, N. Y., U. S. A.

### G-E Series Incandescent Street Lighting



Novalux Pendant Unit



Series Incandescent Bracket

The economical and effective lighting of streets is most satisfactorily accomplished by the G-E Series Incandescent system.

A complete line of lighting fixtures equipped with scientific light directing devices is manufactured for business and residential streets and outlying districts.

For the control of the circuits constant current transformers are made for both station and pole mounting.

Embodied in the design of this material is the broad experience of a company which makes everything from generator to lamp. You may, therefore, be assured that a G-E Series Incandescent system is thoroughly reliable and will operate at the greatest efficiency and economy.

5708

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- Air Brakes
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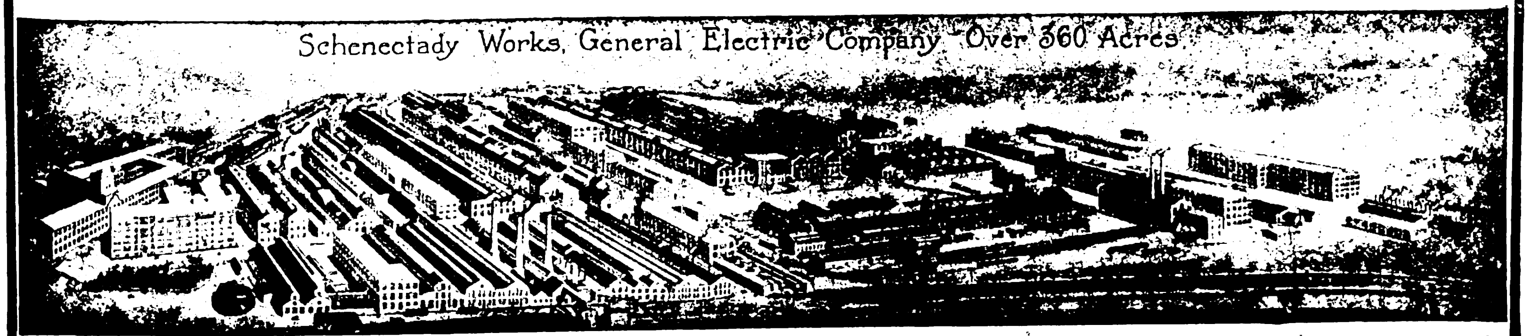
- Generating Sets
- Heating Devices
- Hoists, Electric
- Instruments
- Lamps, Arc
- Lamps, Incandescent
- Lightning Arresters
- Line Material
- Locomotives, Mine, Railway and Industrial

### Products

- Meters
- Motors
- Motor-Generators
- Panel Boards and Cabinets
- Projectors, Searchlight
- Pumps, Electrically Driven
- Railway Equipment
- Rectifiers, Mercury Arc
- Regulators
- Rheostats
- Supplies, General
- Switchboards
- Switches
- Transformers
- Turbine Generators
- Watthour Meters
- Wire and Cables
- Wiring Devices



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Cable address LANDSTRONG

MANILA, P. I.

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GARLOCK PACKING COMPANY

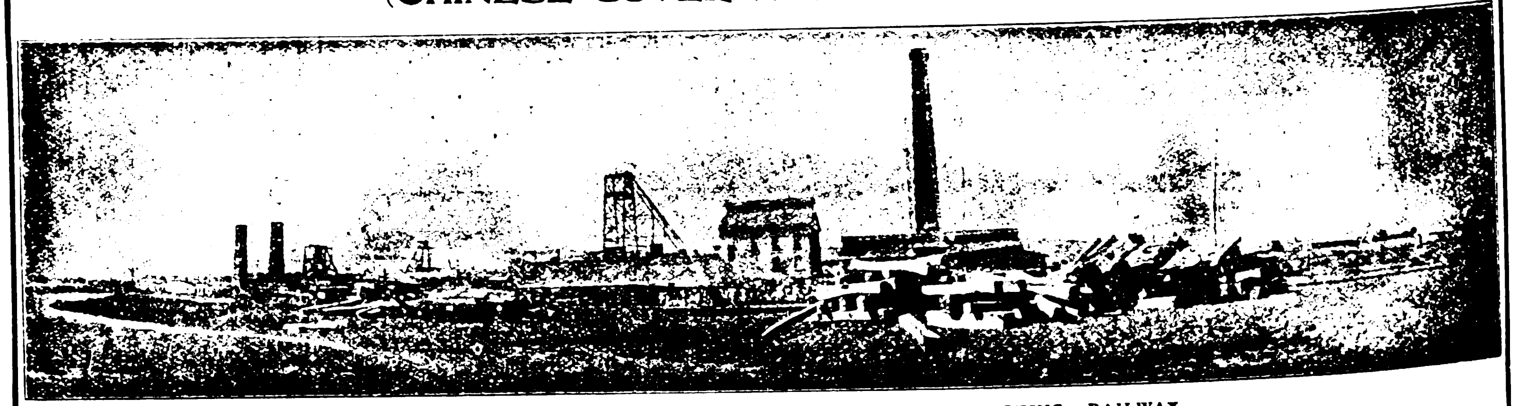


# CHINESE GOVERNMENT RAILWAYS

## THE TAO-CHING RAILWAY

### TAOKOU TO CHINGHUA

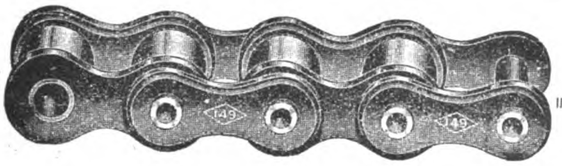
(CHINESE GOVERNMENT HONAN LINE)



GENERAL VIEW OF COAL MINES ON THE LINE OF THE TAO-CHING RAILWAY

## "China's Road of Anthracite"

THE TRAINS OF THIS LINE CONNECT AT SIN-SIANG-SIEN WITH THE THROUGH SERVICE OF THE PEKING-HANKOW RAILWAY. IT TAPS THE GREAT ANTHRACITE COAL DEPOSITS OF SHANSI, AND CONVEYS THE PRODUCTS OF THE MINES TO THE NEAREST NAVIGABLE RIVER.



# 'DIAMOND' CHAINS
for
## Motor-cycles

THE No. 149 "Diamond" is an accurate, strong, durable chain, suited for the most severe motor-cycle service. Nickel steel is used exclusively for the rivets, all wearing parts are scientifically heat treated, the rollers are of special alloy steel and positively DO NOT BREAK under anything like normal service conditions.

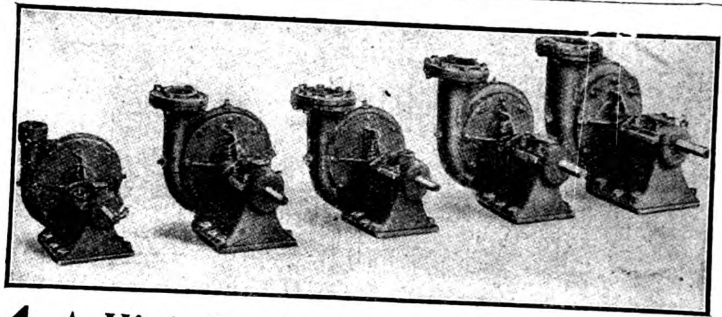
Diamond motor-cycle chains are absolutely dependable—furnished standard 5/8 in. Pitch and with rollers 1/4 in. or 3/8 in. wide. We are also prepared to serve the trade promptly with chains for Cycles, Automobiles, Motor Trucks and Power Transmission.

**Special care given to Export Shipments.**
**Correspondence solicited in any language.**
**Catalogue, samples and prices on application.**

**Diamond Chain & Mfg. Company**
**Indianapolis, Indiana**
**U. S. A.**

**Cable Code: A. B. C. 4th & 5th Editions**
**Cable Address: "Chain" Indianapolis**





# A High Grade Centrifugal Pump
**For Direct Connection to Electric Motors**
## Goulds Fig. 3025

This Centrifugal Pump which is a Horizontal, Single Stage, Single Suction, Enclosed Impeller Type, is a high efficiency, moderately priced pump designed especially for direct connection to electric motors. The casing is of the volute type, supported on the bed plate so that it can be swivelled in any one of eight different positions.

This pump is made in five sizes with capacities ranging from 80 to 1000 gallons per minute for heads up to 1000 feet.

This pump is also furnished with pulley for belt drive and is then known as Fig. 3026.

Descriptive Bulletins sent on Request.

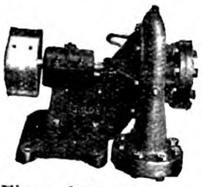


Fig. 3026 No. 4 Vertical Downward discharge

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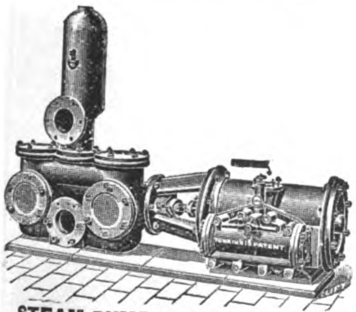

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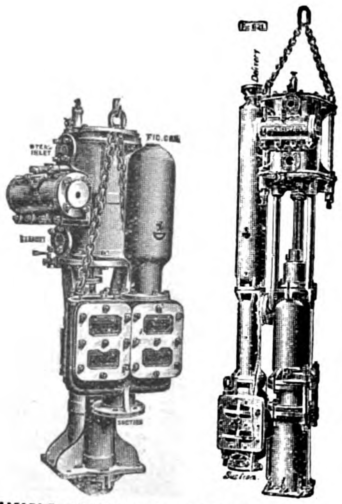

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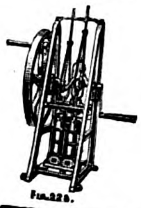
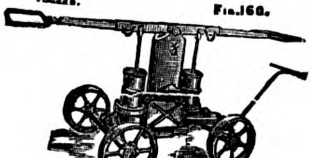


Fig. 228.

Fig. 160.



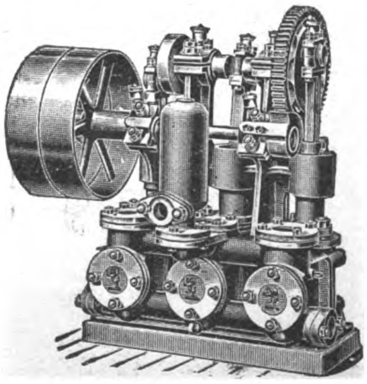


Fig. 191.

*Write for "Eastern" List.*

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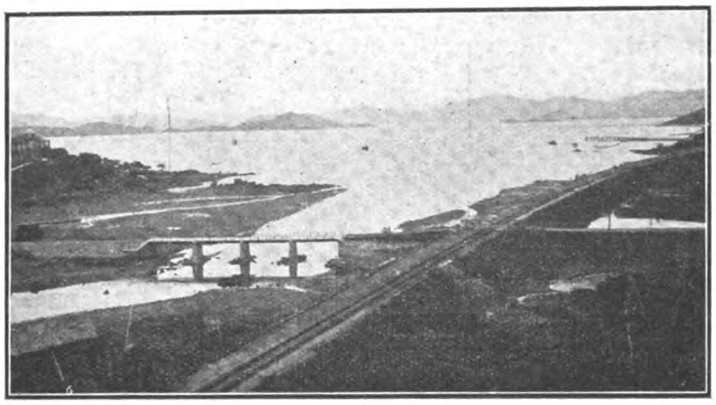
CULWELL WORKS,
**WOLVERHAMPTON, ENGLAND.**

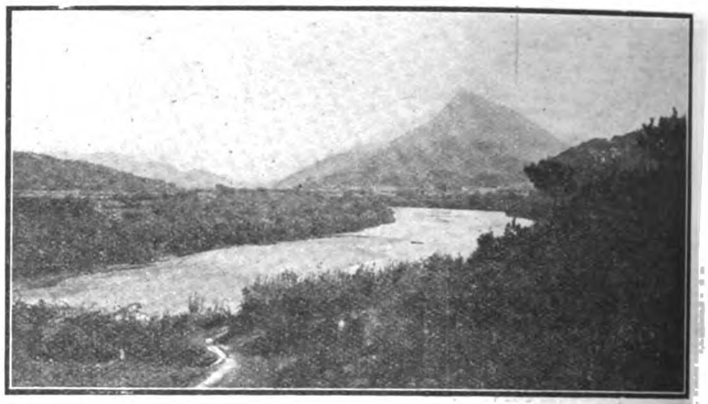
Fig. 188.

# CANTON-KOWLOON RAILWAY

**VIEWS ON THE BRITISH SECTION (22 MILES)** **VIEWS ON THE CHINESE SECTION, 89 MILES. (Chinese Government Railways)**



CANTON-KOWLOON RAILWAY—APPROACH TO KOWLOON



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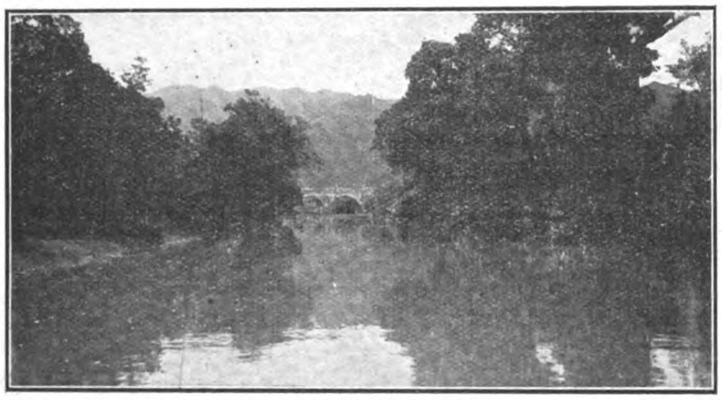
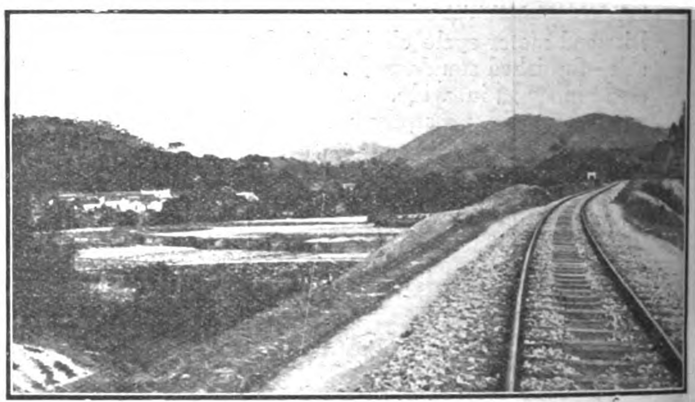


CANTON-KOWLOON RAILWAY—SCENE ALONG ROUTE



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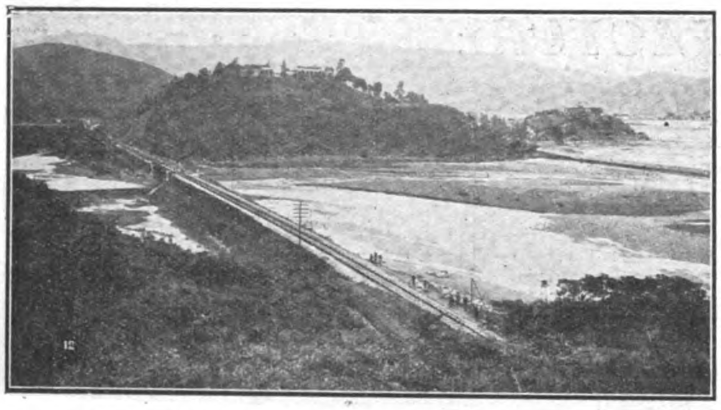
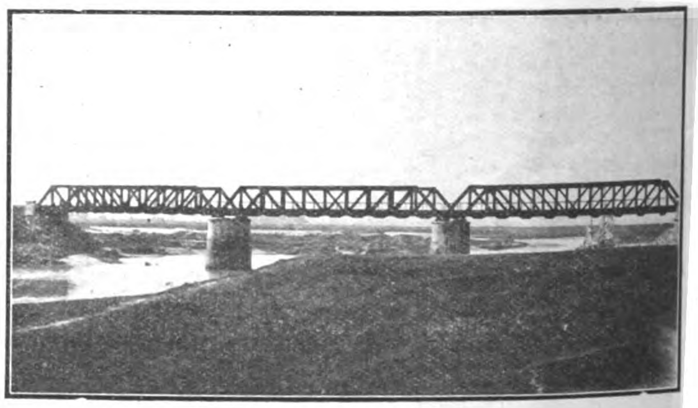


CANTON-KOWLOON RAILWAY—CROSSING TIDE FLATS



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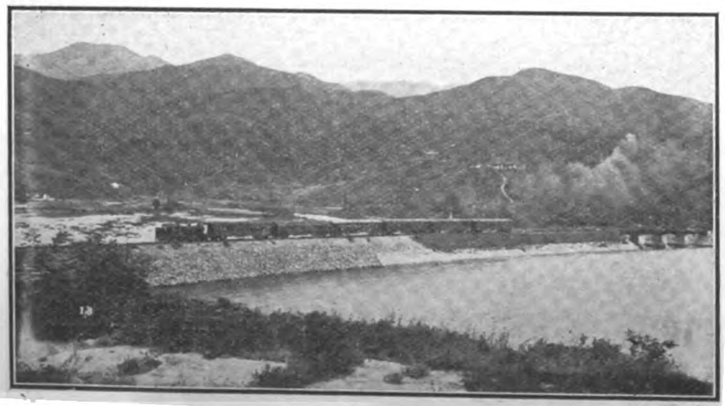
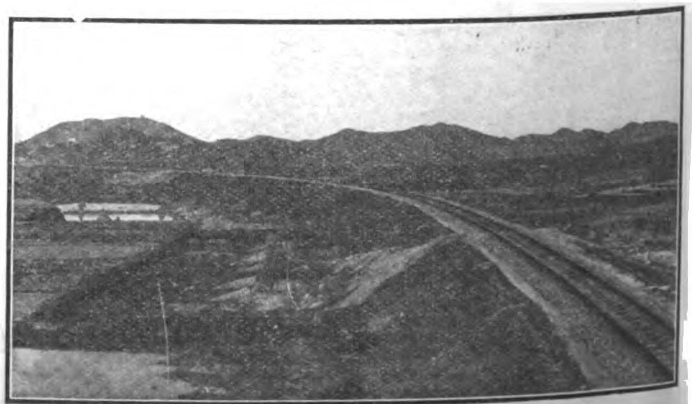


CANTON-KOWLOON RAILWAY—EMBANKMENT APPROACH TO BRIDGE



GRAND CURVE NEAR SHEUNG PING

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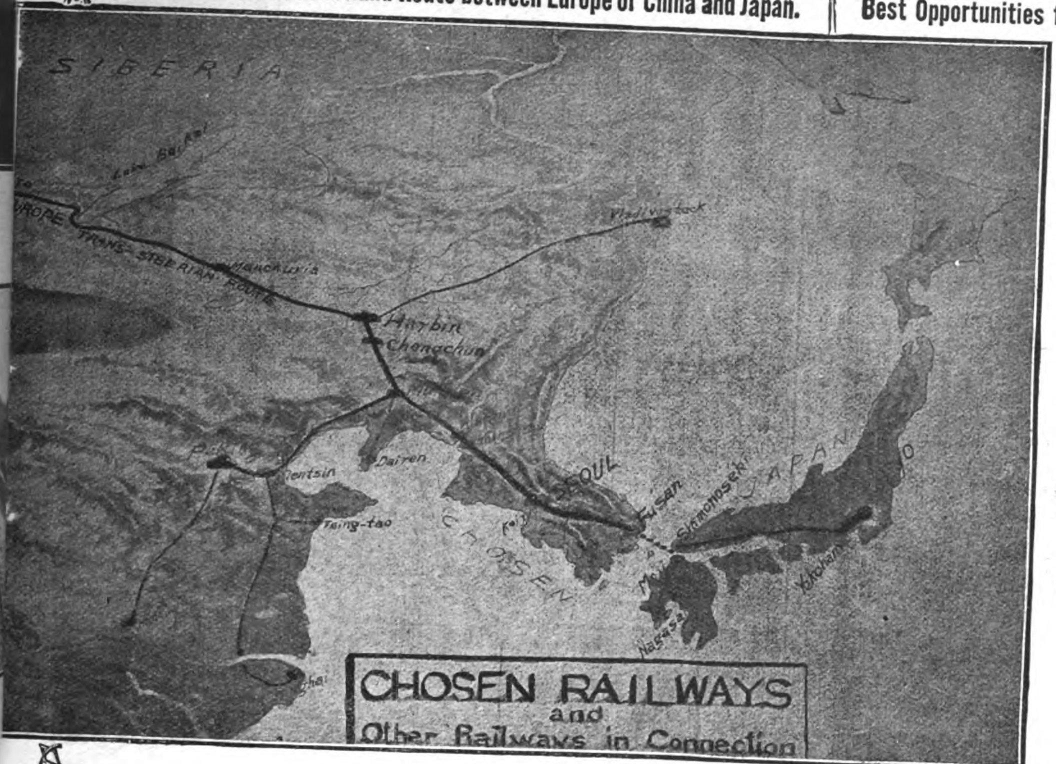


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**Chosen Railways.**—
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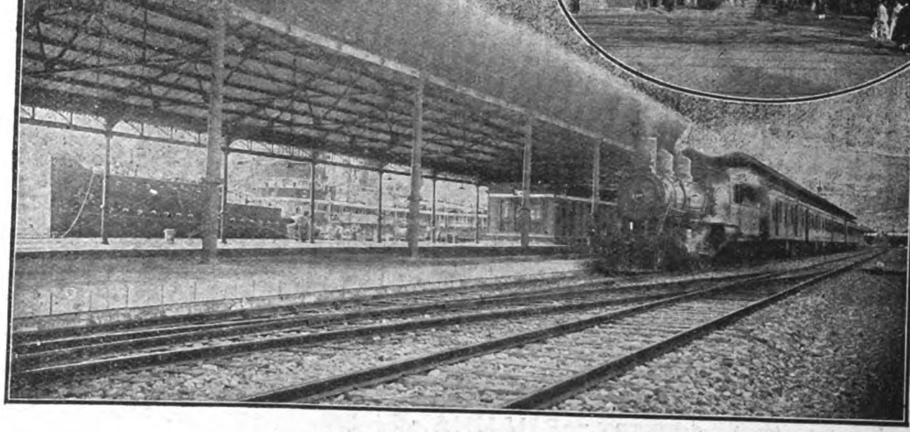

Fusan Pier

A scene in Keijyo (Seoul)

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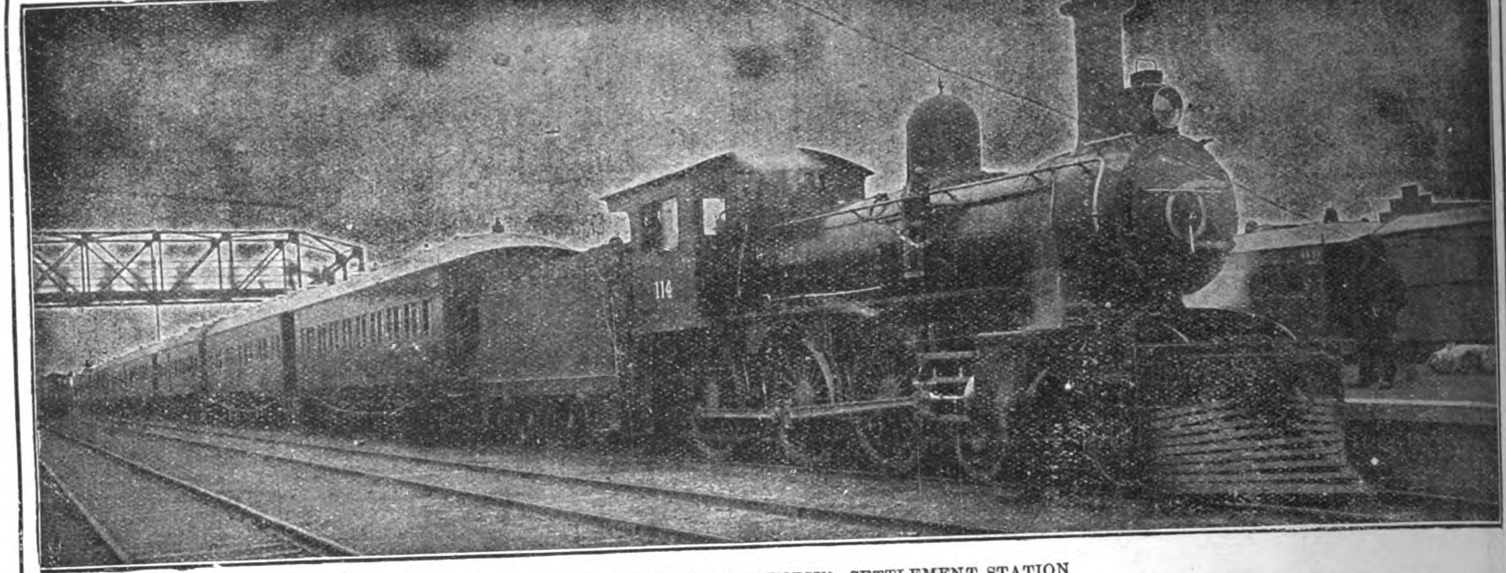

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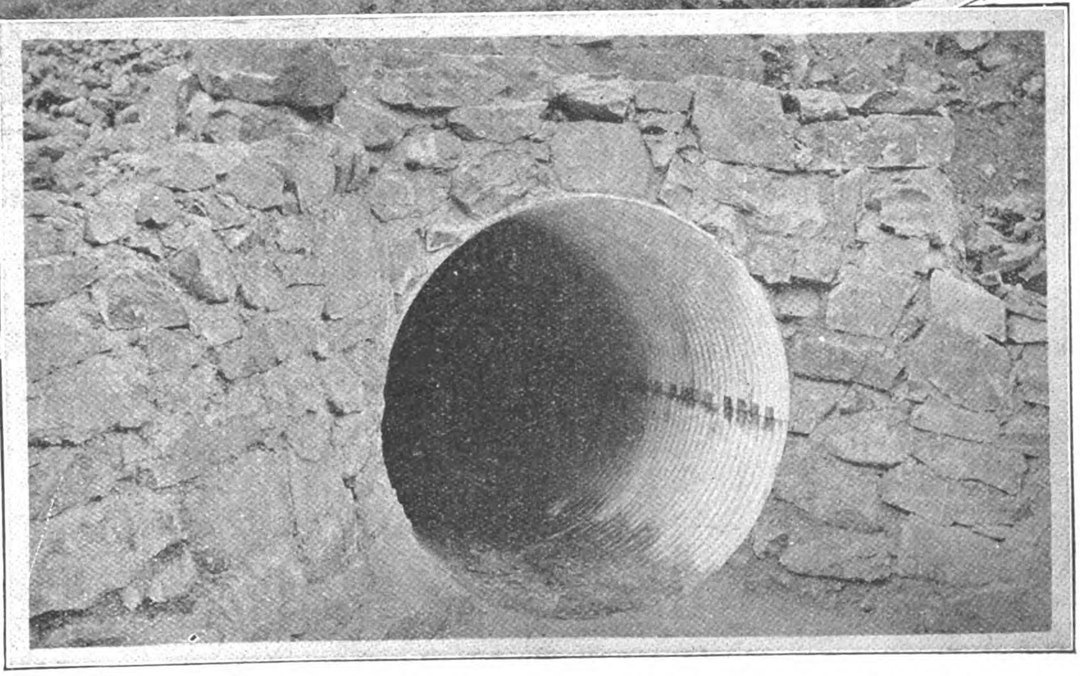

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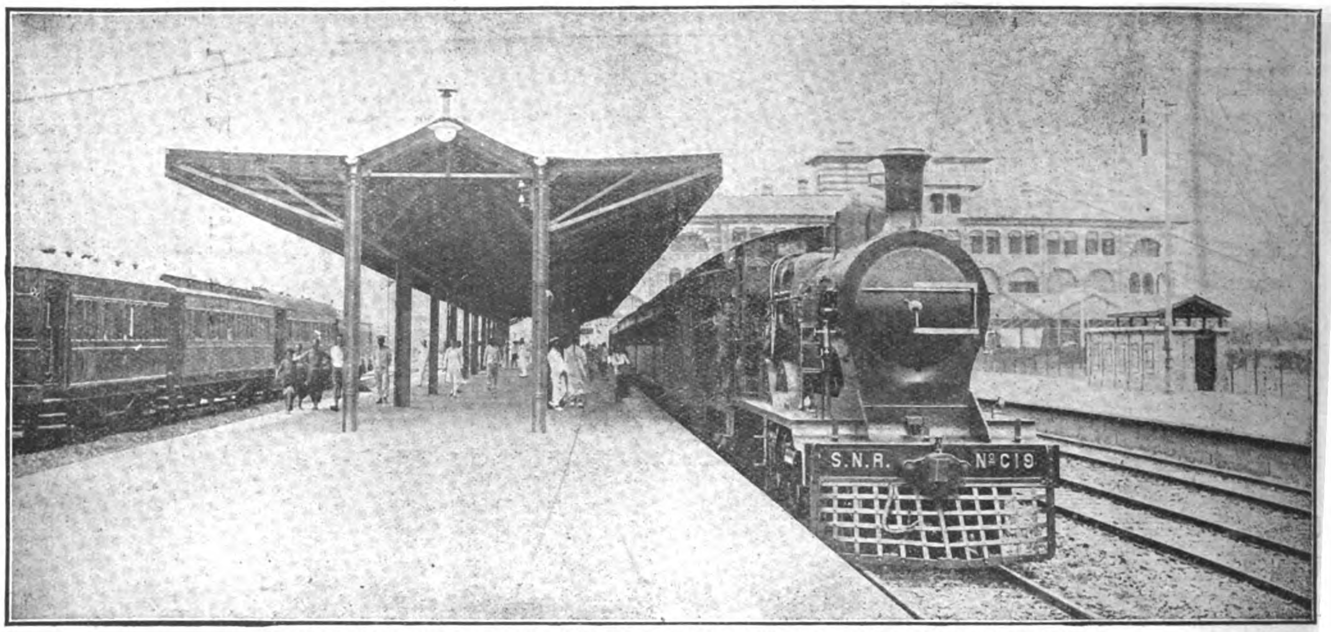


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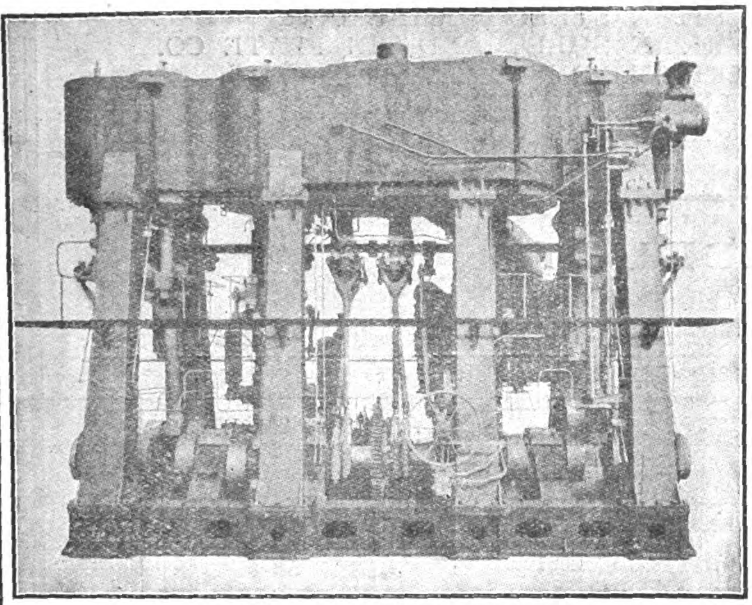


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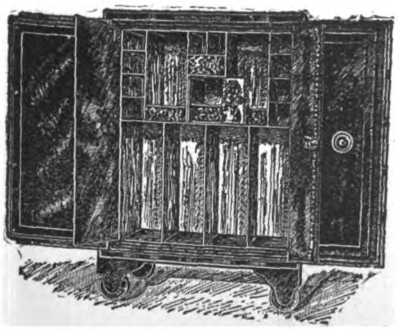


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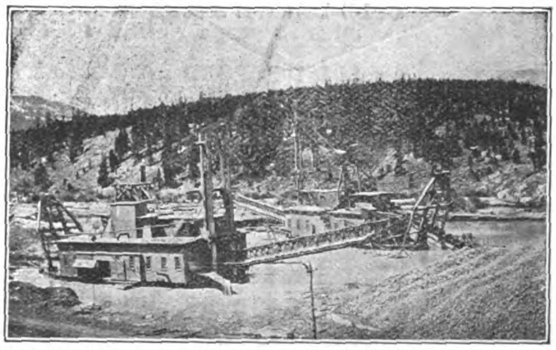


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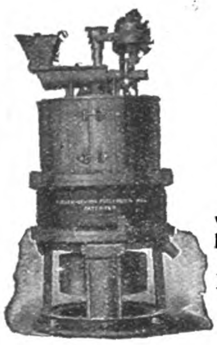

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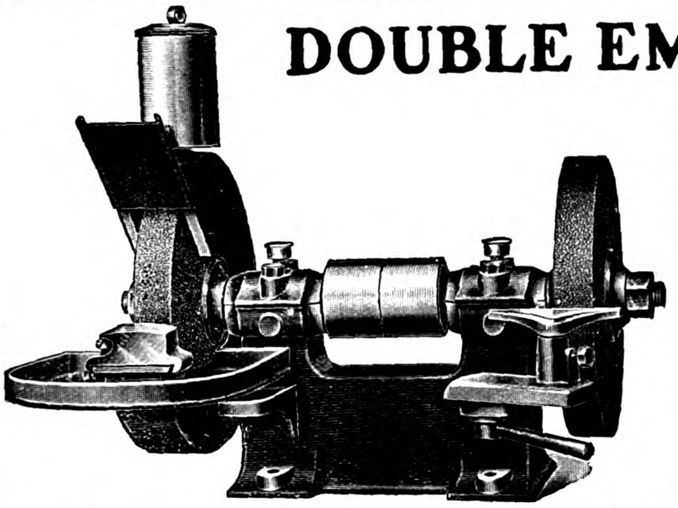

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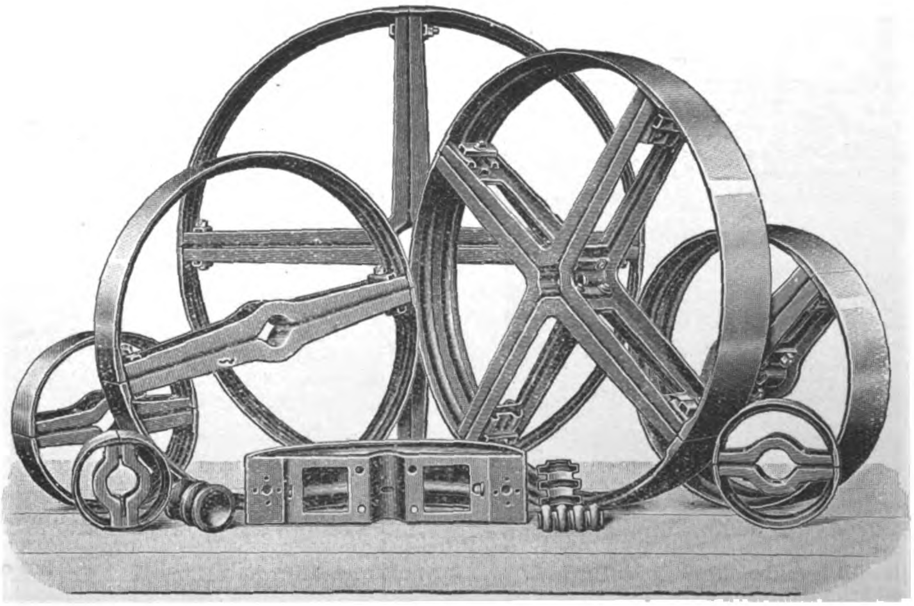

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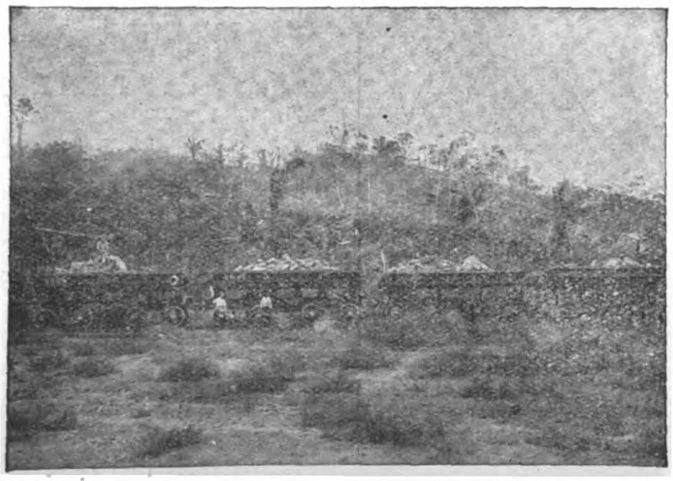

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# THE FAR EASTERN REVIEW

COMMERCE :-: ENGINEERING :-: FINANCE

VOL. XIII. SHANGHAI, SEPTEMBER, 1916 No. 4

# THE RULE THAT WORKS BOTH WAYS

STANDING IN CONSTANT AWE OF THE DREAD GEN-YOSHA SOCIETY, THE JAPANESE GOVERNMENT IS POWERLESS TO ENFORCE LAW AND ORDER AT HOME, OR CONTROL THE PERNICIOUS ACTIVITIES OF ITS ADVENTUROUS SUBJECTS IN CHINA.—EXTRA-TERRITORIALITY LAWS PROHIBIT CHINA FROM PUNISHING THESE OUTLAWS WHEN CAPTURED—JAPAN DARES NOT IMPOSE SENTENCE, BECAUSE THEY ARE ANIMATED BY PATRIOTISM, WORKING FOR THE GLORY OF GREATER NIPPON.—YET CHINA'S SOVEREIGNTY IS TO BE AGAIN IMPAIRED BECAUSE OF HER INABILITY TO COPE WITH A SITUATION LARGELY CREATED THROUGH THE LAWLESS ACTIVITIES OF JAPANESE SUBJECTS.

EDITORIAL FOREWORD :—If a jingoistic, political organization existed in the United States for the purpose of imposing its fanatical will on the Federal authorities in questions involving the national honor and prestige, and, contemptuously ignoring all ethics of international law and justice, insisted on the occupation and annexation of weaker neighboring states ;

If a silent, unscrupulous and unseen leader, directing the operations of this society, resorted to assassination and Black-Hand methods in order to intimidate Government officials and bend them to his will ;

If the members of this wide-spread organization, acting under the belief that they were performing a divine and patriotic mission, incited and carried out revolts in Canada or Mexico, with the avowed purpose of creating a situation that would eventually compel the American government to intervene and annex these countries because of their inability to maintain law and order ;

If the Canadian or Mexican authorities, handicapped by extra-territoriality laws, could not punish these filibusters and trouble-breeders, and were compelled to hand them over to the American authorities for trial, and the latter, intimidated by the terrifying methods of the political Mafia, dared not impose sentence upon them ;

If the leader of this organization carried out his threats, and from time to time, prominent officials of the American Government were assassinated by irresponsible fanatics who immediately committed suicide, and pacifist members of the Cabinet and Congress were bombed ;

If the masses of the American people looked up to this mysterious leader as the Hero of the Nation, and threatened to sweep out of power any administration that dared to prosecute him;

What would be the status of the Government of the United States?

If, because of the vacillating policy of the United States Government in Mexico and elsewhere, this Greater-American Society threatened to kill Secretary Lansing and other members of the Cabinet;

If a bomb had actually been hurled at the Secretary of State and he was not blown to atoms because of a slight imperfection in the fuse;

If the people of the United States were furnished the evidence that this organization had deliberately fomented the existing troubles in Mexico, reducing that country to a state of anarchy and desolation; that the members of the society were fighting in the ranks of the rebels, that the President of Mexico had been assassinated by its orders because of his refusal to come under American influence and sell out his country;

If the people of the United States can grasp such an unheard of situation, they will then begin to understand something of actual conditions in China, brought about by the machinations of a powerful political Mafia organization in Japan, which fears neither Man, God or the Devil.

The Chinese authorities are powerless to cope with the situation. They dare not arrest these trouble breeders, for whenever they have captured these men red-handed in the act, they have had to apologize for the insult to Japan, and pay indemnities for the lives of dead outlaws and furnish pensions for the wounded. The Japanese Government officials in turn, dare not punish these offenders, for fear of the vengeance of the society.

The appointment of Baron Hayashi as Minister to China was heralded as the commencement of a new era in the relations between the two nations. Baron Hayashi never took pains to disguise his condemnation of Japan's former policy towards China. The intentions of Japan may have been honorable in appointing this trained diplomat to the Peking post, but the significant fact remains, that on the very day he arrived in Peking, the deplorable incident at Changchiatun occurred. He never had a chance to place his policy in operation. Japanese troops were stationed where they had no legal right to be. Was it a coincidence, or was the situation manufactured by those who are determined at all costs to force the hand of the Japanese Government in China?

Mr. Zumoto, the veteran Japanese journalist, now editing the *Herald of Asia*, referring to the inability of the present Cabinet to prosecute an honorable course towards China, says:

"The trouble is, that their lack of courage makes them subservient to the wishes and ambitions of not only the military faction but even of a coterie of irresponsible political buccaneers who miss no opportunity in fishing in the troubled waters of diplomatic complications with China."

In another editorial in a subsequent issue of the *Herald of Asia,* Mr. Zumoto referring to the above statement, adds:

"This is not the time to write a detailed history of the present Government's mismanagement of the Empire's relations with China. When that time comes, the revelations that are sure to be made will stagger even those now most enthusiastic in upholding those in power."

The truth is gradually being revealed. The story from the pen of responsible Japanese writers is here given in their own words. The sovereign rights of China are to be taken away for her inability to maintain law and order in Manchuria and Shantung, a situation created and perpetuated by irresponsible Japanese political buccaneers, for the express purpose of forcing the hands of the Japanese Government to annex these Chinese provinces.

Another incident has arisen in Manchuria to complicate the delicate relations between China and Japan, and provide the excuse for a further raid on China's sovereignty. It is the inevitable result of dual responsibility and the natural sequence to a long list of similar affairs, typical of others that must follow in the future or just so long as Japanese troops are illegally permitted to roam around in Chinese territory outside the limits of the Japanese leased railway zones.

This time they call it the Changchiatun Affair. At other times it was termed the Chang-li Incident, the Chang-chun Case, the Chang-tu Massacre, the Panchien-hsien Raid or the Liaoyuan Fracas. It makes no difference by what name it was officially designated, Japanese and Chinese blood was always spilled, the honor of Japan and the "sacred prestige" of the Japanese army was always at stake. In every case Japan insisted that the Chinese were in the wrong, and inspired with hatred and contempt for Japan. In every instance the Chinese Government had to apologize for the insult to Japan, and punish the high military and civil officials of the district in which the trouble occurred, and, in addition, pay heavy indemnities for the loss of Japanese lives, and pensions to the wounded.

On the very day that Baron Hayashi, the new apostle of a better understanding between Japan and China, arrived in Peking, the unfortunate clash at Changchiatun startled the two nations. The versions as to what occurred differ. There has been no serious effort made to establish the facts by a joint or neutral commission. As usual, there was a brawl, with the result that several Japanese soldiers lost their lives, by insisting on entering the Chinese barracks to interview the commanding officer. The Japanese story is to the effect that a Japanese druggist had a row with some Chinese soldiers and was soundly thrashed. He complained to the Japanese police sergeant attached to the newly opened Consulate, who thereupon proceeded to the Chinese barracks and insisted on interviewing the commandant. Refused admittance, he carried his complaint to the commander of a detachment of Japanese soldiers encamped in the town. A lieutenant with a squad of 20 men then accompanied the sergeant to the Chinese barracks and again demanded admission, and succeeded in forcing their way into the colonel's office. Accounts differ as to who fired the first shot. What is known, is that several Japanese lost their lives, and a pitched battle ensued. Chinese reports state that the row started when one of their soldiers admonished the leader of a Japanese gang of smugglers engaged in furnishing arms to the Mongolian bandits and insurgents. It is not our intention to discuss the merits of a case where the facts still remain to be established. Without awaiting the result of a joint investigation, the incident was seized upon by Japan as the vehicle for presenting a set of demands, which, if complied with, will for all practical purposes, loosen China's hold on Manchuria and Inner Mongolia and ultimately hand these provinces over to Japanese rule.

On the assumption that the whole responsibility rests on the Chinese, the Japanese formulated demands designed to prevent any recurrence of these incidents. It is said, however, in Chinese circles that the decision to present the greater part of these demands was arrived at in Tokio before Baron Hayashi left to take up his post, that is, before the Chengchiatung incident occurred.

(*World's Work*)

THE PREMIER OF JAPAN
MARQUIS SHIGENOBU OKUMA

His life has been twice attempted by the fanatical followers of Japan's political Black-Hand Society.

The demands are said to include the following:—

**(1) That the commander of the 28th Division of Chinese troops be reprimanded.**

**(2) Punishment and dismissal of the Chinese military officers and the men who took part in the fighting.**

**(3) The publication of a proclamation throughout South Manchuria and Eastern Inner Mongolia warning the Chinese soldiery not to molest Japanese civilians.**

**(4) The establishment of Japanese police stations at certain points in South Manchuria and Eastern Inner Mongolia.**

**(5) The appointment of Jap. nese military advisers to each Chinese military headquarters in South Manchuria and Eastern Inner Mongolia.**

**(6) The engagement of Japanese military instructors in all military schools and colleges in China.**

**(7) The payment of compensation to the families of the Japanese soldiers who were killed or wounded at Chengchiatung.**

**(8) An apology by China for the insult to the Japanese army.**

As was the case in connection with the twenty-one demands presented in January, 1915, these demands, it is believed, are described by the Japanese authorities as demands and desires, namely, points that will be insisted upon and others that will be secured if possible.

As also in the case of the notorious twenty-one demands we are informed by the Japanese *Manchuria Daily News* of Dairen, that Secretary Funatsu of the Japanese Legation in officially notifying Premier Tuan of the opening of negotiations agreed with him to keep their progress a mutual secret until a certain stage was reached and to answer for the leakage of the secret.

The Peking correspondent of *The China Press* submitted the foregoing statement to the Japanese Minister, who after admitting that the demands were substantially correct, was asked if he cared to make any comment. In reply, he said in part:

"The most important question is that of the establishment of police stations at certain places in South Manchuria and Eastern Inner Mongolia. This matter has a long history. At the conclusion of the Russo-Japanese war the Japanese Government sent delegates to Peking to enter upon negotiations in regard to a settlement of the questions between China and Japan in connection with Manchuria. On that occasion Japan requested that an article should be inserted in the treaty to the effect that the Chinese Government would reorganize the administration in Manchuria so that peace and order might prevail in that region.

"During the negotiations the Chinese delegates insisted that the insertion of the article in question would be a serious loss of 'face' to their government and asked that it should be deleted from the draft of the treaty. If this were done they would give a responsible assurance that the reorganization of the administration as desired would be carried out and this could be inserted in the minutes of the negotiations. The Japanese delegates agreed to the dropping of the article from the treaty relying upon the assurance embodied in the official minutes.

"That was ten years ago, but there has been no improvement in the administration as pro-

mised. Year after year the Japanese residents of Manchuria have suffered outrage and losses from bandits, and from time to time the Japanese Government has presented statistics to the Chinese Government and called its attention to the promise it had given to reorganize the administration so as to prevent these disorders. In all between seventy and eighty cases were reported of outrages by the Hunghutze in which Japanese subjects had been killed, wounded or suffered loss of property. Last year more than fifty cases occurred. On the part of the Japanese government it was sincerely hoped that China would make some genuine endeavor efficiently to police Manchuria, and it repeatedly made representations to the Chinese government. The latter took no action.

"Last year negotiations took place in regard to the so-called twenty-one demands. China granted the right to Japanese subjects to reside in the interior of Manchuria. As it was essential that the lives and property of Japanese subjects who availed themselves of this right should be safeguarded, the Japanese government demanded joint policing. This demand for certain reasons was dropped. Now the Japanese government has again presented some such desire, but in quite a different form. It is requested that Japanese police officials should be employed by the provincial authorities, and that Japanese policemen should be stationed at places in South Manchuria and Eastern Inner Mongolia where the number of Japanese residents justified the step.

"There is no doubt that there are a number of Japanese undesirable characters in the regions as a result of free residence in the interior having been granted and such people are sometimes uncontrollable by the Chinese policemen. As a result trouble is often caused and therefore it would be convenient for both sides that Japanese policemen should be stationed at certain places in the regions concerned. There is no desire on the part of the Japanese government to interfere in any way with the Chinese police administration; it only wishes to look after the interests of respectable Japanese residents and to control Japanese undesirables."

The demands and "desires" are now undergoing "negotiation," and the above comment from the Japanese Minister indicates the line of argument that will be advanced to force China into consenting to joint Japanese police control in Manchuria and Inner Mongolia. It is clear that existing conditions cannot endure forever. So long as dual responsibility continues; while Japanese detachments are marched and quartered outside the leased zones in defiance of the rights of China; and an *imperium in imperio* exists in Manchuria, these periodic clashes with their regrettable losses of life are bound to recur, and each fresh incident will serve to drive the barb of Japanese domination deeper and deeper into the unresisting body of China's independence. It is the penalty that China must pay for her refusal to put her house in order.

Although there is a certain amount of justice in the Japanese contention, it is well to bear in mind that it presents only one side of the case. China is not altogether to blame. Half the disturbances in Manchuria and Inner Mongolia, the banditti activity in Shantung, and the revolutionary movements of the last three years in all parts of China are traceable largely to Japanese instigation and support. This is especially true in Manchuria, where Japanese adventurers are not only found fighting in the ranks of the lawless element, but are engaged in smuggling arms and munitions for the Mongolian insurgents and Hunghutze robbers. China is powerless to put a stop to these outrages, for in accordance with the laws of extra-territoriality, whenever these Japanese adventurers are captured, they must be turned over to their Consul for trial. They are then invariably released without punishment. It is only necessary to recall the Tusheyi arms smuggling case, in June, 1912, when the Japanese smuggler chief, Oshikizo, and his band, were captured red-handed with the convoy of munitions after a stiff battle in which the Japanese and their Mongolian allies boldly attacked the Chinese military encampment. The prisoners were duly handed over to the Japanese Consul, who refused to punish them on the unheard of grounds that they were too low a class for him to bother with! The Japanese Minister when appealed to, supported his subordinate and also refused to interfere. The result was that China had to pay an indemnity for capturing and confiscating the arms, and, in addition, payments were made to the families of the Japanese adventurers who were killed, and pensions for the wounded!

The same spirit was manifested in February, 1913, when the native police of Shanghai rounded up a group of rebels, and, in the fight which ensued one of the latter was killed and another wounded. These were identified as Japanese subjects named Kanai and Yamakochi. On their persons were found certificates signed by the rebel leaders together with other seditious documents connecting them with the revolutionary cause. Notwithstanding that they had forfeited all right to the protection of their own government, the Japanese Consul General at Shanghai demanded that the detectives who hunted down the rebels should be punished, and that the Chinese Government should apologize and pay an indemnity to the family of the dead rebel and a pension to the wounded. In addition, he urged the enactment of a special law for the protection of Japanese in the future. The evidence in the possession of the Chinese authorities as to the guilt of the Japanese, however, was so irrefutable, that the incident was finally compromised, by the payment on March 30 of the same year of the sum of $6,000 to the family of the dead Japanese and $1,000 to the wounded patriot. These facts speak for themselves. No comment is necessary.

If Japan cannot and will not control her own subjects, and persists in placing obstacles in the way of China, how can the latter be expected to clean up the province? If China is to be reprimanded for interfering with their pernicious activities and compelled to apologize for the "insult to Japan" and indemnify the families of slain outlaws, is it any wonder that she now hesitates to enforce the law? It's a poor rule that won't work both ways. If Japan will call off her adventurers, smugglers and trouble-breeders in China, and make an example of them, there is little doubt that China will be able quickly to restore order within her boundaries. But so long as the Japanese Government encourages officers and men of the reserve to be recruited for service with the Chinese revolutionaries, and openly permits gangs of rowdies and trouble breeders to organize and drill in Dairen, preparatory to shipping them to Shantung, China is powerless to help herself.

The other side of the case must be told. Evidence is now available to substantiate the accusation that the "wonderful and efficient" government of Japan is also powerless to enforce law and order within its own domains, and, the testimony fully proves, that to this singular situation is traceable nearly all the woes and troubles that have fallen upon China in the past few years. The facts are notorious, but we have waited for a suitable opportunity to place them before our readers. The truth, coming from an American journalist in China, would be immediately challenged and condemned by the pro-Japanese publicists in America as a willful libel on the Japanese government. Mr. J. K. Ohl, the able editor of *The New York Herald*, was roundly abused and criticised when, a few years back, he exposed the inner workings of this patriotic political Black-Hand organization in Korea. We have waited patiently for the Japanese to publish the facts themselves. We knew that in due time they would come to it. The Japanese correspondent of *The Sun* (New York) touched on the subject last year and almost revealed the truth in describing the disappearance of the two Indian political refugees from Tokyo on the eve of their deportation at the request of the British Government. The complete story has at last been told by Dr. J. Ingram Bryan, the special correspondent in Japan of the *New York Evening Post*. Although he reveals no names, this deficiency is fully supplied in the September number of the *Japan Magazine*, edited by the same Dr. Bryan. We deem this matter of such importance to the world at large, of such moment at this time to the future of China, that in behalf of justice we reproduce herewith both articles in their entirety.

There is only one honest opinion to be formed after a perusal of these authoritative facts. The Japanese Government is responsible before the tribunal of the world, for many of the misfortunes of China; and culpable, because it is within its power to put a stop to these incessant outbreaks and clashes. That it does not dare to do so, that there is no statesman in Japan who has the courage to defy the dread power of the political and patriotic Mafia called the *Gen-Yosha* headed by Mitsuru Toyama, is ample evidence that Japan has yet to learn those higher ethics

of international justice on which the peace of the world must necessarily be based. The evidence is complete. The Japanese writers condemn their government out of their own mouths. Japanese officials dare not enforce the law in their own territory, and, because of this, China must pay. The Japanese Government dares not enforce the law on its own nationals in China; China cannot, because of extra-territoriality. Therefore China must be punished. Her sovereignty must be taken away. She must accede to Japan's demands. Such is the justice of Nippon. Such is the secret of Japanese power. Such is the force that Western civilization must reckon with, after the yoke is placed on the neck of defenseless China. Such is the way of benevolent Nippon, the idol of the American pacifists.

# MYSTERIOUS PERSONAGE SHAPES EVENTS IN JAPAN

## HIS CONNECTION WITH IMMINENT CABINET CHANGES

### PREMIER OKUMA'S RETENTION OF OFFICE OPPOSED BY DANGEROUS JINGO ELEMENT DIRECTED BY THE HIDDEN POWER—ASSASSINATION THEIR RECOURSE IN PAST—OKUMA LOST LEG BY BOMB—THIS ELEMENT NOW SEES JAPAN'S CHANCE OF A THOUSAND YEARS.

From THE EVENING POST, New York, August 3, 1916

[Special Correspondence of The Evening Post.]

**Tokio, July 10.**—Rumor is persistent that within the next few weeks Count Okuma will resign the Premiership and give way to a man of bolder national policy; and the public mind everywhere appears convinced that the report is well founded. To those familiar with the inner workings of Japanese politics the resignation of the veteran statesman will come as no surprise. A full description of these wheels within wheels might appear too far-fetched for publication, though it would throw an interesting light on the Oriental mind. Suffice it to say that there is a very bitter if not dangerous element opposed to Count Okuma's retention of office; and to the Government because Count Okuma is at the head of it and in a large measure controls its foreign policy. This element is engineered by a mysterious individual who keeps behind the scenes. His hand is keenly felt, though no one, save his agents, ever sets eye on him. For more than thirty years he has been the unrelenting enemy of the aged Count; and the ground of his inveterate opposition is nothing personal, but Japanese-like, purely patriotic.

Thirty years ago, when Count Okuma was Foreign Minister and sought to solve the judiciary problem by having foreign judges sit on the Japanese bench during trials involving foreigners, this man, backed by a large and influential national element, regarded the proposal of the Count as derogatory to the prestige of the Empire and proceeded to have the offending Minister blown to atoms by a bomb. Happily the Count escaped with the loss of a leg only; but the partial achievement of the dastardly plot fully achieved its object: Count Okuma was driven out of office and the proposal to allow foreign judges on the Japanese bench was immediately withdrawn. From that day to this, in all movements for the overthrow of those yielding too much deference to foreigners, this master-mind in the background has been the slow but none the less effective leader.

#### Felt in Case of China and Korea

When the prestige of Japan was scouted in Korea, and China appeared to be gaining the whip hand in that peninsula, there was a silent but sudden change in the situation; for the Queen was assassinated and Japanese influence at one bound became paramount: and this mysterious individual aforesaid was alleged to have engineered the whole achievement. Some years ago, when the policy of the Tokio Cabinet was supposed to be contrary to the dignity of the Japanese Empire respecting China, the authorities were warned. They failed to heed the warning; and the next thing that happened was that one evening, when the Director of the Political Affairs Bureau was approaching his residence, he was thrust through from behind by a sword in the hand of an agent of the man behind the scenes.

Some months ago, when the Cabinet's policy in China again offended the scruples of the jingo patriots and Count Okuma proved invulnerable to threats, this same individual had another attempt made on the life of the aged statesman, the defect of the bomb-maker alone having prevented his being blown into eternity. When Yuan Shih-kai proposed to send an envoy to Japan to offer felicitations on the Imperial coronation, the individual aforementioned warned the authorities that should Japan disgrace herself by accepting an envoy from her inveterate enemy on the occasion of such high Imperial glory, the envoy would never return home alive, and the authorities, although they had already sent acceptance of the proposal to Yuan, were ignominiously obliged to cancel it, knowing only too well that what the man behind the scenes says he will do is always done.

Again when the British authorities requested the Tokio Government to order the deportation of certain Indians who were alleged to be plotting against the Allies, the man behind the scenes regarded the compliance of the Japanese Government with the order of a foreign Government as out of place, and warned the officials that the order would be fulfilled at their peril. Thus the Government found itself between the Scylla of assassination on the one hand and the Charybdis of defying the British Government on the other; so they compromised by conniving at the plans of the offended patriots at home, who spirited away the Indians in such a manner that even the national police could not find them. It is explained in Tokio that, after this mysterious individual took the refugees to his house, the police were put on the scent and instructed to watch for the appearance of the Indians, who never appeared at all. They are supposed to have been kept hidden in some place until an opportunity occurred to ship them to neutral territory; which may have had something to do with the necessity of policing Japanese waters with British cruisers, as occurred some time ago.

There is no doubt, too, that this individual and his agents have done much to assist the revolutions in China, as they are said to have been in constant consultation with Sun Yat-sen and other leaders who have been taking refuge in Japan, and have also been watching every movement of the Tokio Cabinet in its attitude toward China, and, if consistent with their past methods, have doubtless been threatening with dire reprisal any departure from the jingo policy toward China.

#### A Marvel for Occidental Minds

Western readers will probably ask how it is possible for one individual in the background to accomplish so effectively these dire designs without getting into the clutches of the law. The circumstances are unique, to say the least. In the first place, there is no direct proof that the individual had any direct contact or connection with the plots already mentioned. He has merely formed the plots and found the agents willing to die in the execution of them, something always possible in a land where the holiest act of life is death for the nation's honor. As a matter of fact, in most of the episodes alluded to the direct agent lost his life or took it himself rather than face a tribunal. In one case one of the chief agents of the mysterious leader was declared acquitted on the ground that, although he had engineered the plot leading to a certain assassination, there was no proof that he had anything to do with the killing.

Another fact that has to be remembered is that there is a very general understanding that this individual has many times saved the nation from disgraceful mistakes or blunders that the Government was making, or about to make, and that therefore he is a hero who should have the backing of the nation, which undoubtedly he has. No Cabinet could live a day which attempted to attack a man who had the backing of so considerable a portion of the nation. The authorities have too much respect for the wheel-within-wheel method of the masses in this country to attempt any interference with it; and, on the whole, it works well; for in many ways the Japanese are even a more self-governing people than the Chinese. The master-hand who manages the intricacies of these unofficial plots and executions of them is himself seldom or never seen in the capital; should it be rumored that his presence was observed there, consternation would ensue; for it would mean something stirring was about to happen. But he is said to have an agent in Tokio who is even more accomplished in artful diplomacy than his master, the latter being used largely as substitute, vicariously bearing unpleasant responsibility, when such has to be borne.

#### Connection with Okuma's Retirement

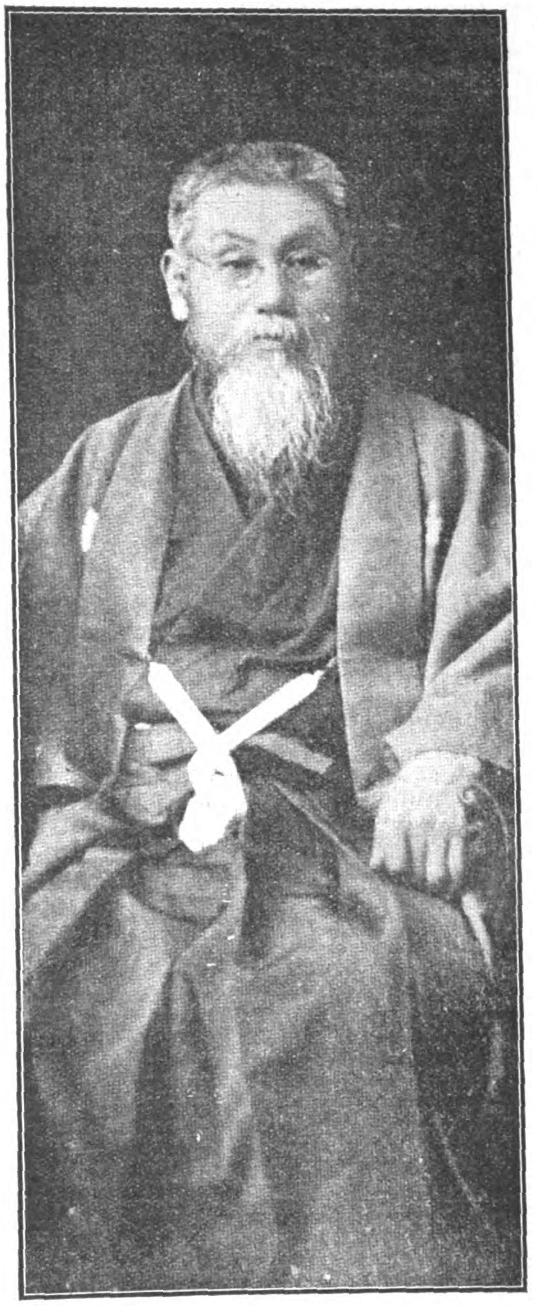
What all this has to do with the approaching resignation of Count Okuma may not appear clear, but the connection is none the less certain. The references to the mysterious individual who plans and plots all radical changes in Japanese politics I have made on the authority of those I am bound to believe—Japanese who know whereof they speak. Now, while Count Okuma is not a man to be

frightened by threats of assassination, and has more than once expressed himself as ready to die in the execution of his duty as Premier, he nevertheless sees no particular use in defying the nation and making a martyr of himself in vain. He doubtless looks back and sees those who died to prevent Japan's forward policy in Korea as eventually more mistaken from a Japanese point of view than those who died to forward such expeditions. If he remains in office and dies maintaining the status quo in China, he may and very probably will be, in the years to come, held up as one who died to crush his nation's ambition to expand; who tried to keep her within prison walls and thus to bring upon her congestion. And while he thus ponders, there stealthily linger without the hands that have already vainly tried twice to blow him beyond the bounds of space and time; and these hands are as capable of trying it a third time as ever they were a first or a second. Not, as has been already suggested, that there is any personal animosity against Count Okuma, but he stands for a oneness with modern civilization and Western sympathy that is by many patriots regarded as dangerous to the future of Japan.

### "Chance of a Thousand Years"

In the present combination of events in China and in Europe some of the more aggressive Japanese patriots see the chance of a thousand years for adjusting all the nation's problems in East Asia. This phrase, "the opportunity of a thousand years," has been used by Count Okuma himself, but not with the aggressive meaning that some of his jingo countrymen would have him put into it. The war in Europe goes on, with no sign of cessation; while circumstances in China do not actually improve; yet Japan has gained practically nothing, and done practically nothing toward the furtherance of her ambitions. The Okuma Government tried it fifteen months ago when the famous twenty-one demands were presented to Peking, and the result was regarded by most Japanese as an egregious failure. The Cabinet saved itself by sacrificing its ablest member, the Minister of Foreign Affairs. Nothing of importance has been done since. The Cabinet has attempted to add to its life by entering into an alliance with Russia, but the jingoes regard that as but another chain on Japan's freedom of action in the Orient. The malcontents were for the most part kept quiescent by realizing that on the present Cabinet depended the proper carrying out of the Imperial coronation. Since the accomplishment of that event the cry for the resignation of the Cabinet has been unceasing. It was never louder and more persistent than at the present time.

In Japan a Premier is not a mere presiding officer, as in some countries; he is more like the President of the United States; a man who is expected to initiate new policies and execute them. The Premier, say the Japanese, should be a man who can do things, or who can see that they are done. If, after he has had his chance, he does not succeed in doing things, he should resign and let some other man try what he can do. Count Okuma has had plenty of time to do things in China; but he has not done them. Now he should give way to one who *can* do them, or at least who thinks he can. The talk of there being no one to succeed Count Okuma is all nonsense, says the press. When the old grass is burnt the new grass soon appears; but the new cannot well appear until the old is duly burnt. So old officials, when they cease "to do things," should be removed; there are always others waiting to be given a chance to show what they can do. Nothing was done in Korea so long as Prince Ito ruled there; nor in the time of his successor, Viscount Soné, but when the man of the hour was appointed, General Count Terauchi, he had hardly been two months in the country when its annexation to Japan was announced and became an accomplished fact without even a battle.



*Japan Magazine*

MITSURU TOYAMA

The Silent and Unseen Hero of Japan; The Mysterious Leader of the Gen-Yosha, the Japanese Political Mafia.

### A Call for Count Terauchi

Now, there is a man who can do things! Let Count Okuma give place to a man like Field-Marshal Count Terauchi, and she will have some chance of coming into her own. This is the prevailing sentiment in Tokio. But the more conservative element wants Baron Kato, or Mr. Hara, head of the Seiyu-kai party, and there is no doubt these men would command the confidence of many; but they do not fulfil the national ideal in the same way as a man who can do things does, like Field-Marshal Count Terauchi, whose presence now in Tokio is regarded as ominous of the expected change.

Japan is thus at present torn between two powerful elements, the conservatives and progressives; the former desiring to move carefully in harmony with Great Britain, Russia, and western sympathy generally, while the latter demand a free hand in China no matter who likes it or not. The mysterious individual already mentioned is said to be marshalling his forces to drive out the Okuma Cabinet, and the press is apparently backing up the campaign; so it is taken for granted that a new Cabinet in the near future is certain. But as the new alliance with Russia binds Japan still closer to the terms of the Anglo-Japanese alliance and to respect for the sovereignty of China, it is difficult to see where the jingoes are to gain by forcing a change. **They are said to see in the new alliance a safeguard against interference with Japan's policy in China by the United States;** and to that extent it may do something to appease them; but they demand as a Premier a man of quick action who can seize opportunities and move surely, a man more after the manner of Terauchi than either Okuma or Kato is. These next few weeks will show whether the conservatives or the aggressives are to gain control of the Government.

J. I. B.

# MITSURU TOYAMA AND THE GEN-YOSHA

[BY BANSON HIRAI]

## From THE JAPAN MAGAZINE, September, 1916

Among the great men of Japan there are some of unique type, seldom if ever found among other nations. Some of these are men of remarkable insight into national affairs, and they are never restrained by trifles in undertaking deeds that would discourage most men. Among these are men who in character and methods belong to the men of the old samurai type, with their *soshi*, or braves, ever ready to carry out their slightest behest and if necessary die in the attempt. Like the proverbial Irishman, they are always "agin the guvermint," and as leaders of the *ronin*, or masterless heroes of the nation, every cabinet is in terror of them. One of the most conspicuous examples of such men is the subject of this sketch, a man who by some is held in the highest esteem and by others looked upon with dread and suspicion.

Mr. Mitsuru Toyama was born in Fukuoka in the province of Chikuzen in the year 1855, his father being of an old samurai family. Even from childhood he was of rather a mischievous turn of mind. His first teacher was Yoshu Kamei, a Confucian scholar of the time, to whom the boy seemed a bit stupid compared with the other pupils; he would read nothing save what was well to his liking; but in writing and composition he excelled his comrades. The master did not agree with those disposed to laugh at young Toyama, saying the lad would some day be something and do something. In that day the lads of Fukuoka were brought up after the manner of Spartans, well disciplined in learning and military arts. The aim was to promote a sound mind in a sound body. Otherwise they despised conventionality and preferred unrestraint.

The first name of young Toyama was Oto-kichi; but in his seventeenth year he happened to visit the Tenman shrine where he saw an inscription written over the torii of the shrine, which struck his fancy; and he there and then changed his name to Mitsuru. The shrine is dedicated to the famous national hero Sugawara Michizane, and it was evident that young Toyama was determined to emulate this hero. At school he was noted for his love of freedom and his brave fearlessness. Once he heard the other boys planning to haze him; but he said nothing, only placing a sword beside him and going on with his work. His shrewd silence so affected the others that they let him alone. He studied earnestly the literature of the Zen sect of Buddhism; and he became an expert with the sword, as well as *judo*.

At the age of 19 Toyama began to take a keen interest in national affairs. At that time Japan was in a state of unrest. The question of invading Korea was constantly discussed by Government officials and at last caused a split in official ranks. The great Saigo left the government and retired to his native place in Satsuma; great men like Shimpei Eto, Minister of Justice; and Issei Mayebara, a State councillor, followed his example. Toyama was one of the greatest of Saigo's admirers and followed his leadership with ardent patriotism. So in 1876 he organized what is known as the Kyoshinsha with his friends, which became a powerful political party, excessively opposed to the government. Some of the party had collisions with government officials and others plotted the assassination of Okubo, an opponent of Saigo. Toyama was arrested among the conspirators and spent a year in prison. He was released in the year of the Satsuma rebellion, just as the insurrection was quelled. Toyama was much disappointed at the outcome, and immediately went to Tosa to consult with Itagaki, now Count, with a view to organizing another uprising. But Itagaki said that if even Saigo could not succeed, it was little use for lesser men to attempt anything, and Toyama agreed: but they decided to start a political party that would eventually upset the Government. His idea was to destroy clan government and bring about a complete reformation of officialdom and society.

In 1879 Toyama formed the Gen-yosha, a political club, the first rule of which inculcated veneration for the Imperial Family, the second was loyalty to the empire, and the third was strict protection of the people's rights and liberties. In a short time the club had over 10,-000 members; and though Toyama refused the presidency of the club, as an empty title, he was the moving spirit of its operations. All the members studied English and Chinese literature, as well as law and military art, especially *judo*; and all were men of a serious and determined turn of mind. They were always ready to die for the improvement of their country, an affirmation that some regarded as ambiguous.

When Count Okuma in 1890 attempted to place foreign judges on the Japanese bench side by side with Japanese judges in trials involving foreigners, the members of the Gen-yosha were wild with anger and at once made up their minds to prevent what they regarded as a gross indignity to the nation. Soon afterwards Count Okuma was blown up by a bomb, escaping, however, with only the loss of a leg. The assassin, Tsuneki Kurushima, committed *harakiri* on the spot, and the overthrow of the cabinet was hastened. Toyama was under suspicion and underwent arrest, but no direct proof could be established against him, and he was released.

In 1891 when the Matsukata cabinet was trying to enlarge the navy, the premier found it very difficult to obtain the necessary consent of the Imperial Diet; and so he determined to interfere as far as possible in the general election to carry out his pet object of naval expansion. To do this he asked the assistance of Toyama; and the latter, though not usually favorable to the government, nevertheless believed in a larger navy, and so he agreed to help out the plan. Toyama sent his agents to every part of the country to interfere in the election campaign; and the struggle was something fierce. Hundreds of *soshi*, or braves, appeared everywhere, even in Tokyo, disturbing the elections and helping the government. In this episode the wonderful influence of Toyama was clearly seen.

Soon after this a rebellion broke out in Korea; and Kin Gyokkin, a noble involved in it, fled to Japan to seek help in his undertaking; but the Japanese Government, afraid of China and Russia, did not show any partiality to the cause; but Kin found protectors and supporters in Fukuzawa of the Keiogijuku and Toyama. Finally Kin was decoyed to Shanghai where he was assassinated and his corpse sent to Korea and exposed to the public as a warning. Toyama was very indignant at the action of the Koreans and began to lay plans for chastisement of them and China. So he despatched numerous agents to Korea to create trouble and bring about war with China. **They organized a band called the Togakuto and made riots in Korea, compelling both Japan and China to despatch troops, leading finally to the China-Japan war in 1894. This act of Toyama is regarded as a merit of national importance for which Japan will ever be indebted to him.**

When Count Okuma formed his first party cabinet in 1898 in cooperation with Count Itagaki, he recommended Toyama for a portfolio, recognizing his great influence among the people. This has been looked upon as proof of the broad-mindedness of Count Okuma, for he well knew that Toyama had to do with the attempt upon his life. Dr. Hatoyama was appointed to mediate in obtaining the consent of Toyama to join the cabinet, and for this purpose made 15 calls on him; but Toyama was obdurate and positively declined. He never wished to become an official, he said; as he was he had more power than any official. His only ambition was to serve his country, and he believed that he was doing so as he was, without seeking position or fame.

It was noticeable that from the year 1903 many members of the Gen-yosha or those associated with it went to Manchuria; and the numerous Chinese bandits that assisted Japan in the war with Russia were doubtless organized by these men. In 1900 when Prince Ito organized his cabinet under the Seiyukai party he asked Toyama to accept a portfolio and Toyama again declined. This shows how keenly Japanese politicians envied the unique power of Toyama. **Since the outbreak of the revolutionary war in China most of the rebel leaders that fled to Japan for protection and assistance have looked to Toyama, and for the most part have not looked in vain. Toyama himself visited South China, and afterwards there was a considerable rise in the martial spirit of the rebels. He is still busy looking after the interests of the Chinese revolutionists, and the exiles from India.**

Usually Toyama lives a quiet retired life with apparently no occupation in particular. He is a man of silent attitude and always rather reticent. Nothing interests him but great national questions, for which he is always ready. He has never sought to be conspicuous, but his national influence has been greater than most men of more prominence. Personally he is a man of dignified bearing and amiable temperament. He is not so distinguished looking as those familiar with his name would suppose; but he is very sympathetic with the poor and unfortunate, often helping poor students. He has no love for saké and he is fond of indoor games, such as *go*. Mr. Toyama has three sons and three daughters, and the family is a happy household. He owns some mining properties in Kyushu, and once owned the big Yubari colliery in Hokkaido; but all the money he gets he soon spends in his favourite plans for national improvement.

One of his most intimate friends in Tokyo is Viscount Miura, Privy Councillor, who says that **Toyama's greatness lies in the fact that he never argues on national questions; but when any question presents itself for solution he goes at it with determination and solves it by some great feat.** At a first interview he always seems stupid; at the second he appears just absent-minded; but at the third interview his greatness appears. Had Toyama lived in the days of old Japan he would undoubtedly have been lord of some great castle. **To-day he is the silent and unseen hero of the nation.**

# MUTTERINGS

"Necessarily guardian of the principles on which intercourse is based, because she framed those principles and fought for them and has built up great edifices under their sanction, England's sea-power remains and will continue to remain, in spite of what may be half surreptitiously done to-day, the dominant factor in the Far East as it is in the Far West. Withdrawn from view for the time being, because of the exigencies of the hour, and because her Japanese Alliance is counted just as much part of the binding Public Law as the Chinese Treaties, the sea-power of England nevertheless stands there, a heavy cloud in the offing, full of questionings regarding what is going on, fully determined one day to receive frank answers."

Thus writes "Putnam Weale" in discussing the "Real Japanese Objective" in the *Peking Gazette* of September 18, while Philip Patchin, one of the brightest and best informed of American foreign correspondents, writing from London in July last to a syndicate of American newspapers, says:—

"Nippon is losing no chances. She takes every opportunity to nail down her hold on China, even at the expense of the interests of some of her Allies. In many important respects she has ruthlessly transgressed upon the rights of others. When this war is over there will be a reckoning, and the center of interest in the entire world will be transferred from Europe to the Far East. It is inevitable, and in its bigness the situation is even now transcended only by the European war."

This evidently slipped past the British censor. Patchin is a keen observer of international affairs. *The Times* may publish its Japanese Supplements, but the day is past when this class of partisan publicity carries weight with thinking people. The quotation from Patchin's letter probably more accurately summarizes popular opinion in England, than ten Japanese Supplements of *The Times*.

# JAPAN'S EXPANSION SOUTHWARD

## I

## DOES JAPAN COVET THE PHILIPPINES?

Does Japan covet the Philippines? Responsible Japanese leaders have assured us that they do not; in fact, they go further, and say they would not know what to do with them if they got them. On the other hand, there is an equally influential element in Japan who maintain that possession of the Islands is essential to their future peace and prosperity. At this time, when a wave of jingoism is sweeping over Japan, carrying with it a recrudescence of the agitation for expansion, it is well for Americans and Filipinos to devote some time to a study of the forces stimulating the desires of the Japanese for an outlet in the "South Seas."

If we bear in mind that the island of Java has a population of 30,000,000, and that the pressure is forcing the overflow into Borneo and Sumatra, it would indicate that Japanese expansion to the south, must anticipate colonization of the Philippines, New Zealand or Australia. We have pointed out in previous articles that possession of Formosa, Korea and Manchuria offers no solution to Japan's pressing problem of how to dispose of her surplus millions, because of the fact that the Japanese cannot compete with the lower wages and standards of living prevailing in these countries. In this we are supported by the highest authorities in Japan. The statement that Japanese cannot thrive in a hot climate, citing the case of Formosa as an example, loses much of its weight when it is remembered that the Formosans are Chinese, and Japanese laborers cannot compete with them and make a living. The answer to this argument rests in the fact that they have flocked to Hawaii, and precipitately colonized the Pacific islands captured from Germany, in addition to sending emigrants to Brazil, where general climatic conditions are the same as in the Philippines.

If, for the sake of argument, we admit that because of climatic conditions the islands offer no outlet for Japan's surplus population, we cannot ignore the fact that Japan has formulated a fixed and unalterable program for ultimate domination over Eastern Asia. Japan's tactical control over the Eastern seas and the coasts of China, can be assured only by possession of the Philippines. If the Straits of Sunda in the hands of Holland are a menace to Japan's strategical security, the principle must apply with greater force to the Philippines with their many passages to the Pacific between the islands, and, what is more to the point, as long as the islands remain under the rule of a stronger Power, Japan cannot hope fully to realize her ambitions on the mainland. With the rapid evolution of Japan's expansion policy, possession of the Philippines becomes essential to complete the chain of forts and naval bases stretching from the Behring Sea to the Equator, behind which she can work out her plans in Asia without fear of molestation. Then, indeed, would Japan be Lord of the Eastern seas, and no hostile fleet could pass through the screen to challenge her impregnable position. There is every indication that Japan will make some move before the war ends, to consolidate her footing in China, and as a corollary to this we may expect to hear more and more of her desire to acquire the Philippines by purchase or otherwise.

Bearing this in mind, let us endeavor to ascertain the real Japanese viewpoint on this important problem. *The Far East* of Tokyo, in its issue of February 20 of last year, published the following interesting note on "Japan and the Philippines:"

**"Mr. Shigemaru Sugiyama (one of the late Prince Katsura's lieutenants) is leading a group of politicians in a campaign having for its object the purchase of the Philippine Islands from the U. S. Government. A petition to that effect was presented on the 15th inst. to the Premier, Count Okuma. Following are reported to be the reasons prompting Mr. Sugiyama to advocate the purchase of the islands:**

**"1. In the solution of the South Seas question, America is the only nation opposing Japan, inasmuch as Russia and Great Britain are on our side. The purchase of the Philippines would be the key to the solution of this vexed problem.**

**"2. International conflicts between Japan and the U. S. A. arise from immigration questions. If the Philippines are purchased, there will be no need for Japanese to emigrate to California.**

**"3. From the American viewpoint, there is no need to occupy the islands at the risk of disregard of the Monroe Doctrine, the fundamental state policy since the time of George Washington. Even if there were any necessity, the Philippine Islands have no military value now, since the German South Sea Islands are occupied by Japan.**

**"4. Public opinion in America, with the exception of those who think like Mr. Taft, favours the abandonment of the Philippines."**

It would seem reasonable to suppose that such an important piece of information bearing on the relations between Japan and the United States, would have been conveyed in some manner to the head of the publicity propaganda operating in America, or, perusal of the Japanese newspapers would have enlightened him as to the presentation of this petition. At any rate, it is not unfair to assume that it was the business of the publicity bureau in New York to be posted on these matters. Yet it is on record that a month later, on March 21, on being urged to speak at the Saturday Non-Partisan Discussion of the Republican Club in New York City, at which meeting the question of the Philippines was the subject for debate, Dr. Iyenaga emphatically characterized any fear in America that Japan wanted the Philippines, as a "monster of groundless suspicion." He then made the following authoritative statement:

**"Indeed I will say more. If you should try to present them as a gift, unless that gift should be accompanied not by $20,000,000, the sum you gave to Spain, but by a round billion of dollars to be expended for the education and development of the Filipinos, Japan would surely decline your offer. Japan has no use for the Philippines for colonization purposes because its climate is as unfitted to us for that purpose as it is for you. Our experience in Formosa has convinced us of that."**

This statement has been accepted in America as official, but in view of the petition handed to Count Okuma a month previous, it obviously fails to faithfully reflect unofficial sentiment in Japan. We have no desire to question the motives of Dr. Iyenaga, a gentleman whom we hold in the highest personal esteem, but, in view of the persistent campaign in America to discredit the "Shanghai and Peking journalists," it is not taking an unfair advantage to cite this as an example of how the oracle is worked. It would not have lessened the force of Dr. Iyenaga's statement if he had candidly admitted that there was a scheme on foot to acquire the Philippines by purchase, and that it had been frowned down by the government. Such an admission of the exact truth, however, would have opened the eyes of Americans and created misapprehensions. If this piece of important American news was published by the *Far East* in Tokyo, it would also appear reasonable to inquire why it failed to reach the American newspapers at the same time, through the regular news services? The Associated Press correspondent stationed at Tokyo works under peculiarly difficult circumstances, and if he cabled or mailed this story to head-quarters, it evidently never reached its destination. If, as we understand, the Associated Press relies on the semi-official Koksai News Service, it is clear that this Japanese truth, so important for Americans to know, was deliberately suppressed.

It will be remembered that in the month of April, the initial step in Japanese expansion towards the south was undertaken, when a party of Japanese notables visited Manila on their way to Java. Captains of industries, journalists, lecturers, legislators, and government officials were in the party. Probably the most influential of them all was Dr. Inazo Nitobe, the great Japanese scholar and authority on colonization. There has been very little published in the Japanese papers concerning the result of this mission. In the last number of the FAR EASTERN REVIEW we quoted from an interview with Dr. Nitobe published in the *Philippine Free Press* of May 6, in which he made the following statement:

**"So long as the Philippines are held by the United States, Japan is not worrying much about the islands. At the same time it would rather have the islands than not, but, so long as they are held by the United States, Japan will not go to war in the hope of thus acquiring them, holding that they are not worth the blood sacrifice that would be entailed, apart from the incidental financial expense. Nevertheless, should the United States withdraw, Japan would expect to exercise a controlling interest in the islands; and should they be in danger of passing into the hands of some other power, Japan would not stand idly by.**

**"For the present, Japan's policy in China and the Philippines is one of 'peaceful penetration,' with the trend of emigration southwards. . . . If there must be emigration, then it should be southward, as China is impossible on account of its already dense population."**

This, in substance, fairly reflects the doctor's views as expressed to Mr. McCullough Dick, the editor of the *Free Press*. At the time when Dr. Nitobe was interviewed in Manila, he was writing a series of articles for the *Tokyo Asahi*, a summary of which appeared in *The Far East* of June 24. Dr. Nitobe's views on conditions in the Philippines should be carefully read by those interested in the broader phases of the greater race problem with the United States. It will be noted that the equality demanded by the Japanese in America and the British colonies, cannot be extended by them to the Filipinos, although Dr. Nitobe admits they are of the same race. The Japanese must be superior.

**He says:**

**"What has been known to us is that they welcome the Japanese, and that they look for Japanese rule instead of American control. Some of my friends have put undue confidence in this opinion and published the idea. Unfortunately, I differ from them in their contention.**

**"When people of the same race are in equal relations, one may receive the other well, but it is rash to conclude, that because we are *of the same race*, the Filipinos would gladly invite Japan to be their ruler.**

**"They believe that they are superior to the Japanese. . . Their customs and manners are influenced by Christianity, hence the unequalled progress in the conception of their treatment of the weaker sex in comparison with that prevailing in the other parts of the East. The Filipinos are no equals of the Japanese in the matter of politics, national defence, and industry, but possessing as they do such foreign ideas and customs, though ancient, they rather look down upon the Japanese.** *It remains a serious question, in these circumstances, if they will condescend to look up to the Japanese as their superiors.*

**"They have furthermore not neglected to pay close attention to the Japanese administration in Formosa and Korea....In the Philippines, the natives enjoy unlimited liberty of speech; they write and discuss as they like and no official intervention takes place. Viewed from this respect alone, would the Filipino welcome Japanese control, when he realized the present condition of Japan's policy in Formosa and Korea?"**

Dr. Nitobe then recounts all the privileges the Filipinos now enjoy in self government and education, and wonders whether they would be willing to discard American rule in favor of Japan. Reading between the lines, this means complete subjugation as a conquered people, abrogation of all liberties, denial of the right of equality, of public speech and freedom of the press, deprivation of higher education and the benefits of the Japanese constitution. Dr. Nitobe certainly lets the "cat out of the bag" and admits many things which coming from a foreigner, would be immediately challenged by the devotees of the oracle. The most important statement of the learned doctor, comes at the close of his article, when he says:

## "The talk of Japan's future expansion towards the south, should be prohibited for the present."

Is not this a clean-cut confession of the power of the government to control the writings and policies of the newspapers, and does it not indicate that when the press carries on a campaign against the United States, Great Britain or China, that the government could put a stop to it, if it wanted to?

So here we have another illuminating exposé of the working of the oracle. Dr. Iyenaga in New York tells us Japan wouldn't accept the islands as a gift. In Manila, Dr. Nitobe favors expansion to the south, and in Japan, amongst his own people, he counsels secrecy about the movement.

With the above facts before us, we can now invite attention to the reports emanating from Washington, and published in the leading American papers on July 13.

**"The administration has been furnished with a copy of a report made to Count Okuma, premier of Japan by Dr. Nitobe, recommending that the Japanese government offer the United States Government $300,000,000 for the islands.**

**"The report elaborates an exceedingly ingenious argument, advanced to prove that America could not except by building up a tremendous military and naval establishment protect the Philippines from aggression by a first-class power. Japan is in possession of the Ladrone, Marshall and Caroline groups of Pacific islands, seized from Germany, which effectually screen the Philippines from the United States. Japan is pouring its people into these islands, establishing enterprises and developing their resources with the apparent idea of permanent occupation."**

American government officials were inclined to doubt the authenticity of the report, and expressed the suspicion that it was written by certain Filipino leaders, who caused it to fall into their hands for the purpose of creating the impression that Japan covets the islands. However that may be, Dr. Nitobe is recognized as the foremost authority on Japanese colonization; he is the confidant and intimate of Marquis Okuma and other Japanese leaders; he has recently visited the islands, and was there interviewed, and at the same time he wrote articles to the *Tokyo Asahi*, which wound up with the advice to prohibit all talk about expansion to the south, **for the present.**

At the very time the American papers were publishing Dr. Nitobe's alleged report, Mr. K K. Kawakami, at San Francisco, must have been writing his views on this burning question for the *Philippine Free Press*, for we find a lengthy article from his pen appearing in that paper on August 12. Amongst other things, he said:—

**"It is not necessary that Japan should, in order to extend her influence and interest in the south absorb the lands now under the American, Dutch or French flag. Confining our discussion to the Philippines, it must be emphasized that Japan does not greatly covet that territory. Of course she would take it if she could get it for a song, and it is absurd to tell Americans that the Japanese would not take the Philippines even as a gift."**

Mr. Kawakami then goes on to explain to the Filipinos all the stock arguments about the climate being too hot for Japanese to thrive there as colonists, and he admits that if internal conditions after the withdrawal of American authority were such as to invite the aggression of ambitious European Powers, Japan would be compelled to annex the country. It is also interesting to learn from Mr. Kawakami, that "had the America of 1898 been as unfriendly toward Japan as the America of to-day, Japan would not have permitted American domination of the Philippines to pass unchallenged." In other words, Japan would have laid her sword across the Peace Treaty of Paris, and compelled America to surrender the islands, in the same way

that Russia, Germany and France deprived Japan of the fruits of her victory over China. Can it be that Mr. Kawakami faithfully reflects the viewpoint of Tokio? After telling the Filipinos what they may expect from Japan if they become troublesome, the ingenious Mr. Kawakami winds up his discourse by advising the Filipinos to accept the application of a Monroe Doctrine, (Japanese, of course) otherwise, if the peoples of the East consume themselves in petty suspicion and disgraceful quarrels they will toll their own death knell. And the Japanese wonder why others are suspicious of their policies!

It will be seen that Mr. Kawakami disagrees with the official purveyor of Japanese truths, and when Dr. Iyenaga, voicing the sentiments of the party in power, says that Japan would not take the islands as a gift, Mr. Kawakami tells us he is absurd.

That purchase of the Philippines is being predicated in Japan at this time was brought home forcibly to us, when one of the most prominent Japanese resident in China, called on us recently, and emphasized the urgency and advisability of America giving heed to this proffer from Japan.

Americans should not overlook the significance of the arguments employed to induce us to accept these overtures. Mr. Sugiyama points out "that in the solution of the South Seas question, America is the only nation opposing Japan, and since the German islands have been occupied by Japan, the Philippines have no military value." This argument is revived in the Nitobe report. In plain words, Japan having occupied the German Pacific islands, the Philippines have lost their strategic value to America, and cannot be defended against aggression by a first class power, or, against Japan, should the latter determine on their occupation. This again raises a very delicate question, for we cannot overlook the solemn promises that emanated from Tokio and London when Japan declared war against Germany. It may not be out of place to recall the British Official Statement announced in London, on August 17, 1914, and formally presented to the American State Department by Colville Barclay, Charge d'Affairs of the British Embassy, on August 18:

**"It is understood that the action of Japan will not extend to the Pacific beyond the China Seas, except as may be necessary to protect Japanese shipping lines in the Pacific, nor in Asiatic waters westward of the China seas, nor in foreign territories, except territory in German occupation on the Continent of Asia."**

Count Okuma telegraphed a message to the American people through the medium of the *Independent*, on August 24, 1914; among other things it contained the following:

**"As Premier of Japan, I have stated and I now again state to the people of America and of the world that Japan has no ulterior motive, no desire to secure more territory, no thought of depriving China or other peoples of anything which they now possess."**

When the Japanese squadron occupied Jaluit, the Japanese Embassy at Washington gave out an official explanation which stated in effect, that in view of the activity of German men-of-war in the Pacific, the action was necessary to keep the trade routes clear. "The occupation of Jaluit was therefore only a step toward the fulfillment of this object."

As in the case of Korea, of Manchuria and China, and now in the South Sea islands, the expansion movements of Japan are concealed behind a screen of verbiage carrying some super-textual meaning. The Pacific islands seized or conquered from Germany, have been colonized, fortified, and the way paved for permanent occupation, notwithstanding the assurances given to America that Japanese activity in the war would not extend beyond the China seas. Having established herself firmly in these outposts, the argument is now advanced that as the Philippines are cut off from America, they cannot be defended, and therefore we should be willing to sell them for a fair consideration. If this principle is once established, and in due course of time America abandons, sells or otherwise relinquishes her control over the Philippines, **will not the doctrine then automatically extend to Hawaii and the Aleutian Islands?** If once a nation embarks on a policy of scuttle before the menace of a superior power, where will it end? If the Philippines go by the board, then the same principle applies to Hawaii and to Alaska, and if the people of the East and Middle West refuse to provide adequate defenses for the Pacific Coast States, they in turn will have to be surrendered when some stronger power covets their possession, or they become a strategical menace to the hegemony of the Pacific.

Whether we are willing to admit it or not, we must face the evidence that our possession of the Philippines will in time bring us into direct conflict with the expanding waves of Japanese ambitions. We must acknowledge that our exclusion laws and our Monroe Doctrine bar the way to Japanese colonization in the Americas, the Open Door principle, though somewhat groggy, is still an academical factor for the preservation of China's integrity, and our possession of the Philippines deprives them of a free outlet to the south. To the Japanese mind, we are "a dog in the manger."

If the United States could with honor barter away the future of the Filipinos, or if the Filipinos themselves would consent to the exchange, it would seem at first glance to be good politics to make the trade. There is unfortunately one almost insurmountable obstacle to such a transaction. The 8,000,000 Filipinos profess Christianity. They are the one people in Asia who have responded to the teachings of Christ. Can the Christian government of the United States bargain away the national aspirations of 8,000,000 Christian Filipinos and hand them over to the over-lordship of a nation which only recently in its demands upon China, announced itself in no uncertain terms as the Champion of Buddhism? The answer to this question was clearly given in the revolt of the Tammany members of Congress who rebelled against the Administration's attempt to commit them by a party caucus to the passage of the Clarke Amendment. The missionary labours of four centuries cannot go for naught. If the Filipinos would willingly accept the change, with all that it implies for the future of their religion and their liberties, if they are willing to accept the superiority of the Japanese, and forego their rights to self government, to free speech, a free press, and place themselves on a level with the Koreans and Formosans in the Japanese political scheme, it is their own affair.

On the other hand, if we refuse to entertain an offer from Japan, she can afford to wait, and in the meantime insist that we comply with our promises to grant independence to the Filipinos. Filipino leaders have upbraided us for years for our refusal to admit their ability to manage their own affairs; there is a large party in the United States who support this contention, so the time must inevitably come when Japan will courteously invite our attention to this little matter. In fact we remember reading in a special number of the *Japan Advertiser* only this last year, where Mr. Ozaki, the Minister of Justice in the present Japanese Cabinet, politely reminded us that Japan expects early fulfillment of our promise to grant independence to the Philippines, and so remove all cause of suspicion in Japan as to our presence in the Orient. As Russia in Port Arthur, and Germany in Tsingtau were a "menace to Japan's peace," so the time must arrive, when our continued occupation of the Philippines will be construed as another grave obstacle to Japan's domination of Eastern Asia. If her Asiatic Monroe Doctrine means anything at all, it means exactly this. If we withdraw peacefully, the weak republic will be annexed by Japan in the event of internal disorders, "to prevent the islands falling into the hands of some other power." It is a safe wager that these internal disturbances will take place. By that time there will be sufficient Japanese interests in the Islands to justify her before the world in taking adequate steps to protect them. The policy of "peaceful penetration" is now being carried out.

Unless the United States awakes from her dream and places herself in a position adequately to defend the Philippines, we need harbor no illusions. There is no getting away from Dr. Tavera's prognosis "that sooner or later the Filipinos will come to the kimono and the ricksha and a good big splash of saffron."

# II

# TAKE JAVA NOW, URGES TAKAKOSHI

**Super-Censorship Regulations Imposed September 24, 1914. ARTICLE V prohibits publication of extreme and aggressive statements regarding foreign territories.**

The *Japan Weekly Chronicle* of September 14, says that a new political magazine called the *Toho Jiron* (Eastern Review) has made its appearance. Its object is to discuss how the Oriental is to hold his own against the Occidental without being enslaved. One of its foremost contributors is Mr. Takakoshi, who returns to his pet theme of seizing the Dutch East Indies, without wasting any more time in talking about it. Now is the time to acquire them, he declares.

**"If the war ends in a draw, Germany will restore Alsace-Lorraine to France and rehabilitate Belgium to her former condition, but in return for this will gain French possessions such as Annam, Tongking and Saigon. In the hands of France these colonies are rather a nuisance, but when possessed by Germany, they will form excellent *points d'appui* for industrial and commercial operations. In this case the prospects of Java and Sumatra will be seriously affected, and the new situation in the Far East assume a grave significance. If the Allies emerge victorious from the war, what will be the result? It is fairly certain that Great Britain will become quite selfish, and in this case, the fate of Java and Sumatra will cause much concern to Japan.**

**"In view of these facts, Japan had better ask Holland for Java and Sumatra at this moment when the Powers are allowing Japan a free hand, and are doing nothing but cultivate friendship and good-will. . . Strike the iron while it is hottest; there will be no more opportunity to take Java and Sumatra if the present chance is lost.**

**"If Holland were able to uphold her neutrality without worrying other countries, we might rest assured. But she is not. Her very existence is left at the mercy of the Powers. It is therefore very difficult for her to look after her own colonies. Even at the time of the Russo-Japanese war the neutrality of Holland was quite dubious. In the present war her attitude has been very suspicious. The disturbances in India, the flight of the Scharnhorst, and raids of the Emden were all engineered by Germans who had Java and Sumatra as their base of operations. It is clear as daylight that in future Java and Sumatra will form a very convenient base for Japan's foes, whoever these foes may be. To ensure her own safety Japan should not allow Java and Sumatra to remain in such a vague and uncertain position as they are at present. From this standpoint also we would like to get Java and Sumatra.**

**"Some may make the charge that my argument is too open. In 20th century diplomacy no amount of veiled argument avails anything. Thirty or forty years ago, when the power of the populace was not so strong as it is to-day, diplomatists concealed their schemes in mellifluous speech, but nowadays such subterfuges are not successful. If a people desires to achieve an object, it should declare that object openly, and, convincing the world of the inevitability of the proposal, should carry it out in broad daylight. This is the up-to-date method of diplomacy. Indeed, I regret that Japanese politicians are not open in their discussion of politics. They are still using the euphemisms they did three decades ago. No euphemism and rhetoric can conceal a design to acquire territory, or any other ambitions from the Powers. Such clandestine diplomacy should be abolished.**

**"If Japan is favored with Java and Sumatra by Holland, she may recall her hundred thousand emigrants in the United States, so the latter may feel at ease. In such a case I believe the United States will approve our policy."**

In previous articles we have commented on the doctrine of the predatory state so frankly advocated by Mr. Takakoshi, and pointed out that if the Dutch East Indies are considered a menace to Japan's strategic security because of Holland's military weakness, thus justifying their seizure, the same principle applies with equal force to the Philippines, under a weak independent government or under the continuance of a pacific and unprepared American suzerainty. The same principle also applies to the Aleutian Islands, to Alaska amd Hawaii, and, as Japan expands her possessions, the doctrine will automatically expand with it.

Mr. Takakoshi's lament over the lack of frankness in Japanese politicians in discussing politics, because they still adhere to the euphemisms and rhetoric of three decades ago, to conceal their designs to acquire territory, is refreshing, coming from so high a Japanese authority. It recalls a passage in the work of Dr. Gulick on Japan, in which he says:

**"It often happens in the extraordinarily intricate social life of Japan that a man may verbally say the opposite of what he means and intends to convey, and the hearer fully understands what is said and what is meant. Only the unsophisticated foreigner who depends exclusively on the words, misunderstands the meaning."**

Dr. Gulick says plainly that words are used to conceal thought in Japan. Mr. Takakoshi reminds us that notwithstanding Japan's progress in material things, her statesmen still adhere to the old forms of speech so graphically described by Dr. Gulick, while the unsophisticated foreigner fails to comprehend their meaning, although they are perfectly understood by the people of Japan. The leaders of Japan are telling the world over and over again in the only words their Samurai training will permit them to use, what their policies are, but we refuse to understand. We will never understand, until it is too late.

Like Mr. Kinnosuki in the *American Review of Reviews*, when he asked Americans to finance Japan in the Province of Yunnan, as the price of the abandonment of her demand for the admission of her sons into America, so Mr. Takakoshi dangles the bait of recalling the Japanese emigrants from the United States, in return for our acquiescence in Japan's spoliation of Holland.

As Mr. Takakoshi is very honest and believes in a frank discussion of these matters, we would suggest that he communicate with one Theodore Roosevelt, a very distinguished American citizen, whose views on despoiling Holland would make interesting reading. His address is Oyster Bay, New York State. If the Japanese can convince this sturdy descendent of these liberty loving Dutchmen who put the fear of God into the heart of the greatest and most cruel general of his time, the Duke of Alba, and afterwards discovered and settled new Amsterdam, then, perhaps, they may receive the approval of the rest of the country. But Mr. Takakoshi and his Japanese jingo friends must not overlook Colonel Roosevelt, nor should they fail to read aright the message conveyed in the cabled news dispatches that Holland is steadily increasing her army to defend her neutrality and preserve her independence. As to Mr. Takakoshi's surmise that after the war, Holland may not be able to maintain her independence, a little study of Dutch history and the character of the Dutch people, will convince him that rather than bend their necks to the yoke of the conqueror, the people of the Low Countries would open the dykes and efface the name of Holland forever from the map of the world. The Japanese have no monopoly on patriotism in its highest sense. Our earnest advice to Mr. Takakoshi is to forget about it. Don't arouse the Dutch. They are a small nation, and would probably be no match for Japan. They are not Chinese, nor Tartar, nor Russian. They have very fixed ideas and ideals, in fact they are at times most unreasonably hard headed. And, they have friends. Ask Mr. Roosevelt about it.

III

# "HEAVEN WILL PUNISH US, IF WE REFUSE TO TAKE THE PHILIPPINES," SAYS FUKOMOTO

*A Japanese View*

The *Japan Advertiser* of September 10th, publishes the following translation of an article appearing in the September number of the *Kwaigai* or "Over the Sea." The magazine is devoted to the encouragement of the emigration of the Japanese and the expansion of Japanese influence. The writer is Nichinan Fukumoto, noted for his lengthy articles on Germany. He calls this latest article "The Relations Between the Japanese Empire and the Philippines."

"Take a bird's-eye view of the world from the firmaments of the northern region, and you will behold a long serpentine stretch of islands starting with the Kuriles and passing over Yezo, the main island of Japan, Kyushu, Luchu, Formosa, and ending in the Philippine archipelago. It seems proper geographically that all these small islands should be under the rule of the Island Empire of Japan. In fact these islands belong to one family, and just as this earth is inseparable from the solar system, so should these islands be regarded as inseparable from the political system of Japan.

"If of all the races who inhabit these islands, the Ainu were the most superior people, they should with propriety rule the rest of the races. The Formosan aborigines or the Filipinos might also claim that right if only they had the power. But unfortunately none of these peoples are strong enough to make and maintain an independent state, holding their own in the family of nations. Only the Japanese are capable at present of ruling an Empire, so that it is the decree of Providence that Japan should rule all these islands.

"Even while they were under the Spanish rule some of the native races in the Philippines made a bid for independence. At present the islands belong to the United States, but for the United States to hold them is contrary to the fundamental principles of Washington's national policy. There are to-day many intelligent Americans in Congress who advocate the relinquishment of the Philippines. In the Congressional session of last year the bill for giving independence to the Philippines was on the point of passing when it was shelved owing to America's suspicions of Japan. It is quite right and just on the part of the United States that she should let go her hold on the Philippines. She should not hold in perpetuity any land outside her own great domain.

"But could the Filipinos govern themselves as an independent state? We regret that we have to declare that they have not yet arrived at the full statute of independence. . .

"Geographically and sentimentally the Philippines are a part of Japan. *It is an old adage that heaven will punish us if we refuse to take that which heaven gives us. We must not stand on ceremony too much.*

"Historically speaking a Japanese Empress once attempted to annex the Philippines, and Matrukura also attempted a great expedition thither but was prevented by the Tokugawa's policy of shrinkage. During the Meiji era three attempts at annexation were made, but failed owing to the cowardly policy of the Government, till at last the Philippines were snatched off by the United States for the paltry sum of 20 million dollars. Consequently we have had to put up with a detachment of a foreign Power right in front of our own shop. I wonder how my own countrymen can tolerate such a state of affairs without indignation."

# BEHIND THE SCREEN OF JAPANESE CENSORSHIP

The Japanese publicists and their friends in the United States persist in denying the existence of any formidable press censorship in Japan, that operates to conceal the truth and so mislead the world as to Japan's real policies. When a censorship is imposed at all times, whether the country is at peace or at war, there must be some sound state reason behind it, and it is only logical to deduce that in times of peace, there must be some ulterior motive to keep the rest of the world, or a hypothetical enemy, in ignorance of the real state of national sentiment. To settle this question once and for all, we place important and irrefutable facts before the American public, by reproducing official evidence and a few pointed editorial comments on the facts from the most authoritative sources in Japan.

The fact that Japanese editors and writers do indulge in violent attacks on the United States and other nations, is advanced by the American friends of Japan as conclusive testimony that the press laws are very lenient, and that these outbursts should not be taken seriously. But the cold, hard, inescapable truth remains, that the Government does frequently invoke the law by prohibiting public discussion of international questions, imposing heavy fines for infractions of the police orders, withdrawing from circulation entire editions, and, on special occasions, even suppressing the newspapers altogether and confiscating the plants. Three times within a fortnight during the month of July, leading Japanese newspapers were suppressed by the authorities on the trivial pretexts of publishing an interview with Count Okuma on Chinese affairs, reporting the counsel's defense at a public trial of the men charged with throwing a bomb at the Premier, and a statement of the Minister of Finance on current questions.

This attitude of the Japanese Government is in strong contrast with the one assumed three months ago when the agitation against the alliance with Great Britain was at its height. At that time, when asked why the authorities had not stopped this campaign, Count Okuma replied that the Government believed so strongly in the freedom of the press that they would not interfere even when a dangerous agitation against an ally in time of war was going on. At this late date, in defending the suppression of the newspapers in July, Count Okuma takes the stand that:—

"**Every word we utter, and every action we take now affects the community of interests among the entente powers. These words and actions on our part if misinterpreted, are bound to produce suspicions among the Powers with whom we are allied in this war. So the people of Japan must be very careful of what they say or do.**"

Although the Japanese newspapers publishing the interview with the Minister of Finance were seized and destroyed, it is known that the trouble arose from the fact that the Minister expressed his satisfaction that the resolutions passed at the economic conference of the allied Powers in Paris were not binding on the governments of the delegates, and hinted that Japan was not specially keen to have an economic alliance after the war. Furthermore, the Home Office considered a statement of the Minister of Finance objectionable because he pointed out in the course of one conversation that Japan was full of

money, and at the same time remarked that Japan would not arrange a war loan for Russia with whom she is supposed to be specially friendly.

The action of the Government in suppressing these newspapers is ample proof of its power over the press. When a newspaper campaign of criticism and invective is carried on against the United States or the British Alliance, when the jingo press clamors wildly for the imposition of humiliating terms upon China, or again, when the seizure of the Dutch East Indies is openly preached, and the occupation of Australia advocated, when the ruler of a friendly nation is bitterly attacked and ridiculed and the doctrine of expansion by conquest freely discussed, and the Government refrains from exercising its powers under the laws, there is only one honest deduction to make. If the law is not enforced, the Government must be in sympathy with the sentiments expressed.

To place this matter clearly before the American people, it is essential, at the risk of appearing tiresome, to republish the regulations and super-censorship law promulgated to deal with these special matters. As the Japanese newspapers are prohibited from discussing these interesting subjects and the friendly news associations refuse to circulate these illuminating facts, the truth cannot seep through to the outside world.

* * * * * *

On September 16, 1914 the Japanese Government imposed a super-censorship over the Press. The *Japan Weekly Chronicle*, of September 24, 1914, page 608, states that "the police have communicated the following to us as comprising matters calculated to disturb Japan's international relations, and therefore forbidden publication under the new censorship regulations just issued by the Foreign Office:—

**1. All matters (notes, communications or statements) violating the object of the existing Alliance and Agreements between Japan and foreign Powers (The Anglo-Japanese Alliance, and the Russo-Japanese, Franco-Japanese and Japanese-American Agreements.)**

**2. Reports that may lead the public to believe that any new international Agreement, Alliance or secret Agreement has been entered into by the Empire in addition to these already existing.**

**3. False reports concerning the relations of Japan with China, Russia, Great Britain, America and France, or any extreme, inflammatory, or provocative statements.**

**4. Abuse of the Rulers of friendly nations.**

**5. Extreme and aggressive statements regarding foreign territories.**

On the same page is published the reply of Count Okuma to the storm of adverse criticism levelled at the Government for imposing the additional regulations. Remembering Count Hayashi's advice that Japan should patiently await "the opportunity that would some day come in the Orient," it will be seen that the outbreak of the European war was the signal that Japan had been waiting for to put into effect her long cherished dreams. Count Okuma discloses that Japan's sole concern in the great war is purely selfish, for he says:—

**"The present opportunity should be taken for settling the diplomatic questions pending between Japan and the European Powers, and efforts should be made for promoting Japan's national fortunes.**

**"The public, continues the Count, is inclined to devote its whole attention to the progress of the campaigns; BUT TO JAPAN THE WAR ITSELF IS OF SECONDARY IMPORTANCE. WHAT IS OF PARAMOUNT IMPORTANCE IS THE OPPORTUNITY THE WAR AFFORDS TO JAPANESE DIPLOMACY—AN OPPORTUNITY SUCH AS MIGHT ONLY COME ONCE IN A THOUSAND YEARS. When the war is over, all sorts of delicate diplomatic questions will crop up in rapid succession, and it is obvious that there will be a great addition to the number of diplomatic matters that will have to be kept secret. Only recently editors were warned to be very careful how they published matters likely to affect Japan's diplomacy, but in spite of this some of the papers printed statements seriously affecting Sino-Japanese relations, and very embarrassing to the Government. This is a time when the destinies of the Japanese Empire, like that of many others, is being decided, and any international misunderstanding created by the Press might result in a diplomatic failure for Japan, the effects of which would be fatal.**

**"For this reason the Government felt compelled to prohibit the publication for the next few months of all matters of which the publicity is considered diplomatically undesirable, and by this means insure the safety of Japan's international intercourse."**

It is interesting to recall that this highly important piece of news somehow escaped being communicated to the press of America or Europe. At a time when the world was intensely interested in the utterances of the statesmen of the warring Powers, it is significant that this frank statement of the Premier of Japan, so vital to the creation of an intelligent public opinion abroad, should have been suppressed. Following immediately, as it did, after the famous Guildhall speech of Premier Asquith on September 10th, which reflected the loftiest espressions of Anglo-Saxon manhood, the words of Premier Okuma must be accepted as faithfully reflecting the soul of New Japan. It is well to recall that the Premier of Japan personally cabled to the *Independent* of New York on August 24, his now historic message of assurance that Japan "had no ulterior motive" in entering into the war, "no thought of depriving China or other peoples of anything which they now possess," and then reconcile it with the statement given to the *Asahi* one month later.

In the light of subsequent events, Count Okuma's declaration that Japan was not interested in the war itself, or the vital issues underlying the conflict, brings into high relief the quality of the diplomacy he had then in mind. Japan's opportunity had arrived. She was to grab all that she could, while she could, and force through the necessary alliances and understandings to enable her to hold her gains at the termination of the war. The cause of humanity, of Belgium, of Servia, the sufferings of Europe, had only one meaning for the Premier of Japan. It was Japan's golden chance—the opportunity of a thousand years. How well she has taken advantage of it, the world now understands by her aggressions upon China, the alliance with Russia, the violent outbursts against her friend and Ally, and the impending dangers to China. The record stands for the world to read.

Although many newspapers of Japan might be quoted as to specific instances of police interference in their affairs, resulting in the imposition of heavy fines, and suppression of editions, we confine ourselves to extracts from two editorials from the *Japan Chronicle*, which throw a flood of light on this much discussed question. If, after reading this authoritative evidence from the foremost British newspaper in Japan, the American adjuncts to the Japanese publicity bureau in the United States still have the temerity to deny the workings of the system in Japan, there is nothing left to be said.

Extract from Editorial, in the *Japan Weekly Chronicle*, July 6th, 1916.

**"When the Premier occupied a position of 'greater freedom and less responsibility' with very slight prospects of again entering public life, he had much to say from time to time respecting the liberty of the Press and the advantages of freedom of speech. Since he became Premier, however, the Press does not seem to have noticed any relaxation of the shackles imposed on the 'fourth estate.' Police officials still call at the newspaper offices and serve prohibititions against this or that matter ...... It is curious to note ...... the nervousness of the authorities concerning a possible reflection of some trifling incident on the Imperial House, and the belief that publication of the absurd action of some unknown individual suggesting disloyalty must be suppressed at all costs out of a regard for public peace. We are not able to be more explicit, but it is at least permissible to say that it might be inferred from the issue of such prohibitions that the country was seething with discontent, instead of being, as is the fact, the most devoted of all countries in its loyalty to the Imperial House. We can imagine the scathing remarks of the Sage of Waseda had his attention been directed a few years ago to these forms of Press censorship. What would he have said if in those days the Premier, having been the subject of a bomb outrage, should have justified the**

suppression of certain newspapers guilty of publishing the arguments of the counsel in defence? Much has happened since Count Okuma championed freedom of speech and publication, though scarcely two years have passed. *Indeed he had not been many months in office when the newspapers were forbidden to publish the text of the Japanese demands upon China, on the grounds that the versions current were inaccurate, whereas it became known in due course that they were substantially correct.* No doubt the public discussions of the terms of negotiations, especially when at the outset more was asked than is expected to be obtained, may hamper the government in its operations, *but it might be thought that still more harm would be done by the unfriendly criticism of China which is so rife in the Japanese Press, and which there is no attempt to suppress or even to discourage.*

"In the course of the interview with Count Okuma, as reported in the *Kokumin*, the Premier is said to have remarked that '*expressions of views on the international situation by Japanese publicists should be guarded, and otherwise they are liable to cause an unnecessary suspicion among the Allies as to Japan's attitude and may bring about a hitch in international relations.*' This is excellent advice, but it seems rather belated. For months certain of the Japanese papers and magazines contained articles by men of considerable weight that did undoubtedly cause suspicion in the Allied countries, without a word of deprecation on the part of responsible members of the government...... Now, when the criticism has abated we have Count Okuma urging that at such a time as the present the opinions expressed by publicists should be carefully considered so that they may not disseminate wrong impressions at home and abroad. Curiously this has relation to a statement made by a colleague of the Premier, Mr. Taketomi, the Minister for Finance, who has recently given his opinion to some journalists on the Paris Economic Conference. *What the nature of this opinion is we cannot say, as the journals reporting it have been seized and their issues of that date destroyed......* To excuse the seizing of certain newspapers for reporting a statement by the Minister of Finance, on the plea that international relations are at present in a somewhat critical position, seems tantamount to a recommendation of concealment. The statement made by the Minister of Finance was probably indiscreet, but having been made, it seems rather hard to seize the newspapers reporting it, an act, indeed, calculated to arouse more suspicions abroad than it allays.

But the action may have been taken without consultation with the Cabinet. Even the Premier is not beyond the jurisdiction of the police in such cases. Some years ago, when Marquis Saionji was Premier, a book to which he contributed a preface was suppressed on the ground that it was prejudicial to public morals."

From *The Japan Chronicle*, May 6, 1915.

"One of the most remarkable features of the negotiations which have been in progress at Peking for the best part of three months is the extraordinary reserve and reticence shown by the Japanese press. This is so entirely different from the usual attitude of Japanese journals on the occasion of international disputes or crises that it has led to much speculation. . . For some time past indeed, it has been rumoured that soon after the negotiations were entered upon, the Tokyo Government showed the leading journalists the text of the demands, but bound them not to publish the information until permission was given. In return for being taken into the confidence of the Foreign Office, the journalists were asked to give the Government their support on patriotic grounds in carrying out a policy that would be of great advantage to the country. . . This goes to explain a queer thing done by one of the leading Osaka journals, which about the time the alleged interview between the Government and the journalists took place, published an 'extra' containing the reported items of Japan's demands upon China, as received from Peking, but subsequently withdrew the statement at the instance of the authorities who forthwith prohibited any other journals from reproducing it. . . In some instances it is asserted that government influence over the press has been obtained by improper means. As long ago as last November it was asserted that eight of the leading newspapers had relations with the Government. Last month an influential journal like the *Nippon Jin* roundly asserted that Count Okuma is known to have employed corrupt methods in dealing with the newspapers, the allegation being made in connection with the election campaign and having no reference to the attitude taken by the press on foreign affairs.

"On every previous occasion that we can recall the Japanese Press has been most free and unrestrained in its criticisms of foreign affairs and international relations. One reason for this possibility is that Japanese is still a language but little studied, and to the great majority of Japanese it is yet difficult to believe that the things written in their own papers are read outside the country, the result being they are apt to be as unreserved in writing about national or international affairs as a man in talking of his domestic affairs within the bosom of his family."

# JAIL FOR THE JINGOES

In our last number we had occasion to publish a few remarks concerning the brilliant publicity work of Dr. R. B. Tuesler, carried on in America in support of Japan's policies, while soliciting funds for his Tokyo hospital. Since then we received the *Richmond (Va.) Dispatch*, in which the eminent surgeon pays his farewell respects to the Shanghai and Peking journalists who "misinterpret" Japan's actions in China, etc. After perusing this virtuous outburst of partisan indignation, we hasten to withdraw our recommendation that he be awarded the Order of the Sacred Treasure reserved for foreigners, and instead, propose him for the Grand Order of Merit and Cordon of the Chrysanthemum, the highest honor accessible to Japanese subjects. In this parting shot at those who disagree with Japan, he says:

"**An immense amount of distrust and suspicion is being built up in the United States, where there is absolutely no justification for it. The friends of Japan do not fear, but earnestly invite the most searching investigation of her policies and conduct, safe in the knowledge that any fair decision will uphold her position.**"

We invite the attention of Dr. Tuesler and his American admirers, to the current publications in Japan; to the writings of Count Okuma, of Dr. Kambe, of Mr. Taketomi, of Mr. Kayahara, of Mr. Takekoshi, of Dr. Miyake and others; and to read them in connection with the interview given to the *Asahi* on press censorship, reproduced in part in the preceding article Dr. Tuesler continues:—

"**A year ago America was flooded with tales from Peking and Shanghai of the outrageous demands being made upon China by Japan. Nine months have elapsed since the treaties with Japan were made public, and the Peking-Shanghai fables, largely the result of German propaganda, exploded. Many in America read and believed the sensational press stories then published against Japan regarding these treaties........**

"**The public should have some redress against slanders of international significance and importance, and there should be adequate legislation to control it. The situation is made more unfortunate by the undoubted existence of a wide spread German propaganda throughout the Far East, to cause trouble between America and Japan. This for obvious reasons. Apparently many of our better class papers are unaware of this and they are lending their columns to its furtherance. THIS GERMAN AGITATION AGAINST THE INTERESTS OF JAPAN IS CONSTANT IN PEKING AND SHANGHAI AND WE SHOULD DISCREDIT EVERY CABLE AGAINST JAPAN EMANATING FROM THOSE SOURCES UNTIL THEY ARE PROVEN TRUE.**

"**The most important piece of legislation waiting to be done in this country is the enactment of suitable laws holding the press responsible for international libel. We owe it to justice**

**and to the friendly relations really existing between the United States and Japan to put a stop to these offensive stories, and declare our opposition to this subtle attack upon the peace and safety of the two friendly powers on either side of the Pacific."**

Just so. We heartily concur. If American journalists persist in their willful refusal to accept the Japanese viewpoint—slap them in the calaboose, put them in a padded cell, where they belong. They are all crazy, unreliable, dishonest, untruthful, venal, and should not be permitted to roam at large. These disturbers of international peace should feel the full effects of a law specially enacted for their particular benefit. Having thus admitted the justness of the principle advocated by the amateur publicist of Japan, the question arises; where should we commence? Must the editors of THE FAR EASTERN REVIEW be committed to the penitentiary because we reproduce and comment on the "peaceful" utterances of the Japanese jingoes? Suppose we make a start in Japan. The laws are already enacted for punishing these offenses; they have censorship and super-censorship laws in abundance. The Government has absolute control of the Press, the telegraphs, the mails, and supervises all incoming and outgoing news. Nothing can get past them. They have us coming and going when it comes to publicity. There is hardly a day passes in Japan that the police fail to telephone the editors that they must not publish or comment on this or that piece of legitimate news. And then, in fairness, we cannot apply one principle to the relations between Japan and America and deny its force when applied to Japan and China.

The first offender, who would come under the law if it was honestly administered, would be the Honorable Premier of Japan. Unquestionably he is the most inconsistent and persistent disturber of international peace that has ever appeared on the diplomatic stage. It is simply impossible to keep pace with his rapid changes of opinion. He blows hot, he blows cold, he asserts, he denies, he advocates peace, he urges militarism, he is an altruist, and then a cold blooded opportunist, and hardly a month passes that in his role of leading contributer to his own magazine, he fails to lay down the law as to how the affairs of China should be run in order for the country to escape absorption by Japan. He protests friendship with China in one breath, and in the next roundly abuses the responsible head of the nation. If any man has violated the censorship laws of Japan, that man is the venerable Marquis Okuma, the intimate friend and confidant of Dr. Teusler, who now so strenuously advocates the enactment of laws in America to punish such offenders.

Then what punishment should be meted out to Mr. Takenobe, the editor of the *Japan Year Book*, the "boy who spilled the beans" and published State secrets, by disclosing, two years ago, that the object of Japan's armament expansion was "to be prepared against an emergency with the United States of America." Is it any wonder that Americans are now suspicious of explanations, and smile when Marquis Okuma tells two American women journalists that this was only "just for fun?" The law is in force in Japan; how about Mr. Takenobe?

What will happen to Mr. Takakoshi, if the law is honestly carried into effect? If ever an article seriously disturbed the relations between two friendly Powers, it was his open and brazen advice to Japan to seize the Dutch East Indies. He keeps at it. He is obsessed with the idea. Only this last month he revives this barefaced policy of international piracy. He is still at large. If Dr. Teusler is consistent, why not speak to Count Okuma about incarcerating this gentleman?

Then there is the eminent Dr. Kambe. His recent outburst in the August number of *The Japan Magazine* on the "Problem of National Expansion" is so full of "pacific" intentions; what defense can he make against prosecution for disturbing the peace? Surely, Dr. Miyake, the distinguished editor of "*Japan and the Japanese*" for his article on China in the May number of the *Japan Magazine*, should go up for life! And, then that eminent "pacifist," Mr. Kazan Kayahara, whose views on Australia make such pleasant and reassuring reading for the Honorable Ally of Japan; what of him? He refuses to be muffled. The law is powerless to gag this rabid expansionist. Exile to some coral islet in the South Seas is the only corrective for his case. Mr. Taketomi is a constant offender. Censorship or no consorship, his strong right hand cannot be separated from his jingoistic pen. What will we do with that brilliant militarist who contributed to the *Chuo Koron* the article which proclaimed that Japan can only expand by war; Mr. Arai Teijiro, who wants Japan to conquer the world; Mr. Nakashoji, who objects to America fortifying the Panama Canal, and so on down the list of eminent scholars, statesmen, professors, editors and other leaders of Japanese thought whose utterances and writings in the last two years have amazed the world and opened its eyes to the real objects and aims of Japanese diplomacy and militarism. What is to be done with those distinguished moulders of Japanese opinion, whose views on the Anglo-Japanese Alliance made such encouraging and glorious reading for the men who were laying down their lives in Europe for the preservation of a principle? The consorship laws were in full force; in fact the super-censorship was promulgated to prevent just such outbursts. The world has not heard of any one being fined or punished for these high crimes against international amity. The Government apparently gave its tacit consent to this violent campaign against its Ally. There were no suppressions of editions, no telephonic commands from the police to stop the tirade. Whatever happened to the "irresponsible" author of the Japanese Bernhardi book, describing how Japan was going to invade and conquer the United States, and who deliberately invented the name of a National Defense organization, and advertised it as being responsible for its publication, to stimulate public interest and increase the sale of the book? Was punishment ever meted out to him in accordance with the laws of Japan? It would be interesting to know just what happened to this offender.

Dr. Teusler says that America must adopt legislation to punish those who stir up trouble and willfully misrepresent Japan's policies. There must be some way in which the viewpoint of Japan can be rammed down the throat of the American public, and imprisonment for those who refuse to submit to the treatment seems to be the last remedy. But before trying it on America, we would like to see the existing law carried out in Japan. Perhaps the eminent *medico* can persuade his intimate friend, Marquis Okuma, to comply with the regulations, and after that example he should have no trouble in convincing his other intimate, the Chief Executive of the United States, that similar laws should be enacted in America.

## VALUE OF JAPANESE SEA-WEED

Sea-weed may be regarded by the public as an insignificant weed growing at the bottom of the sea, and especially by occidental people, it is not given any consideration; but according to an article by Dr. Hichisaburo Yendo, published in a recent number of the *Shin Nippon*, sea-weed is the source of many industries in Japan, amounting to many million yen.

According to Dr. Yendo, sea-weed is not used as food by occidental people, and only the orientals use it as food. In the Orient, Japanese, Hawaiians and Chinese use it for food, and in the Occident, the people of Iceland, Norway and some parts of Ireland and Scotland eat it, but in far smaller quantity than orientals. In Ireland, he says, cooked sloak is eaten with steaks, but that is the only instance of the Irish using sea-weed for food. The Japanese people are the largest users of sea-weed as food, and Dr. Yendo attributes this to the abundance of sea-weed on the Japanese coasts. In the amount of sea-weed Japan leads the whole world, and after Japan comes the western coasts of Canada and Alaska. But in other parts of the world sea-weed is very scarce. The habit of eating sea-weed has greatly developed the knowledge of Japanese fishermen regarding the product. Their knowledge of sea-weed far exceeds that of many noted scientists, and in the long history of the cultivation they have acquired an art of scientifically cultivating it. The cultivation of sloak, laver, laminaria and gloiopeltis furcata in every part of the country is done in scientific manner, and even scientists cannot give many points to fishermen on the subject of sea-weed cultivation.

# TWENTY-EIGHT FINGERS IN THE PIE

## WHY THE LOAN FAILED

China has failed to raise a paltry loan of $5,000,000 in the United States. Why? It would require volumes to trace step by step the various incidents leading up to and bearing on the present undignified impasse. International intrigue, amateur diplomacy, official muddling, Chinese curruption and incompetency, Kuomintang opposition, insufficient security, American politics and financial jealousies, promiscuous and injudicious publicity, have all contributed to prevent China from obtaining her much needed loan. Too many cooks have spoiled the broth; twenty-eight fingers in the pie have left China with nothing but the plate.

It is needless to trace the financial history of China up to the time when the American Financial Group withdrew from the field. President Wilson, with his altruistic ideas of "dollar diplomacy," burning with a desire to discredit the Republican administration and deliver a good resounding Democratic kick to Wall Street and the "Money Trust," was no sooner firmly seated in the Presidential Chair, than he refused to continue official support to the American participants in the international financial consortium, who hold under a written promise of the Chinese Government the preference on all future administrative loans. The American Group, composed of J. P. Morgan & Co., Kuhn, Loeb & Company, The National City Bank and the First National Bank, were therefore compelled to withdraw from the international combination at the precise time when the terms for the reorganization loan of $125,000,000 had been all arranged. In loyalty to its international partners, the American Group, on withdrawing, promised not to re-enter the Chinese field in competition, until after the expiration of the inter-group agreement in 1917. As there were no other American financiers with the prestige and necessary resources to float a large foreign loan, the elimination of the American Group effectively closed the door to further American participation in the financing and development of China. The amateur Secretary of State contended however that there were many bankers in Denver, New Orleans, St. Louis, Omaha, Oshkosh and Kalamazoo who stood ready to finance China, once the official monopoly to the "Money Trust" was terminated, and, for the last three years the administration has been waiting for these rural capitalists to come to the front and center and weave haloes around the head of the patriotic Democratic leaders for saving the nation from the "Monster of Wall Street." The field in China was open to all. Peking anxiously awaited the arrival of capitalists to obtain concessions and lend money to the depleted treasury. A multi-millionaire from Chicago drifted in and told them how much he was worth, and what he could do. He was rushed to a special audience with Yuan Shih-kai. He there repeated the old formula about American friendship for China, how much money there was in the country and how disinterested Americans were, until Yuan who had heard that story time and again told him in the most polite Chinese "to put up or shut up." Others arrived, and having nothing but words to offer the Chinese, departed empty handed.

At last a man came along, who talked little and promised nothing. The Chinese liked him. They asked him if he could help them in America. He said he would try and do his best for them. They gave him an option on a loan, which he carried to New York. The group bankers turned it down. They wou'd only re-enter the field at the express invitation of President Wilson. The President however would not, at that time, reverse his position, so it became necessary to place the proposition before others. After great perseverance the independent banking firm of Lee, Higginson & Company were interested and negotiations opened with the Chinese Government. Up to this point there were only a few fingers in the pie: the Chinese Government represented by Chou Tsz-chi, Liang Shih-yi and later by Chou Hsueh-Shi; the American Minister at Peking; the Chinese Minister at Washington; the State Department; the American agent who held the option, and the Bankers.

Then the storm broke in China and Yuan wanted money to defeat the republican movement. The firm of Lee, Higginson & Company was appointed Fiscal Agents of the Chinese Government in America, and on the strength of this, an advance of $1,000,000 was made on a $5,000,000 loan. The Southern leaders, remembering how they had so successfully bluffed the world during the first Revolution by cabling to foreign capitals that they would repudiate all loans made with the Manchu authorities, followed the same tactics at this time. Tang Shao-yi, and other anti-Yuan leaders in China, kept the wires hot to the American State Department and the Bankers, protesting against any loan to the Yuan government. The Republican Chinese in the United States, through their press organization flooded the papers with warnings against any loan to Peking. The Chinese Minister at Washington was constantly shadowed by the spies of the Southern party. He was threatened with dire consequences if he persisted in seeing the Bankers on behalf of the Government he was in duty bound to obey. A noted American financial expert arrived in Peking at this juncture. He also directs a publicity bureau in New York for the Chinese. The bureau at once became active in sending out cable dispatches on the situation from Peking, all winding up with the urgent plea for America to loan money to the Chinese Government. This was answered by a counter press campaign directed by Chinese Republicans residing in America.

Many new fingers were thrust into the pie.

With the death of Yuan and the inauguration of the new *regimé*, money was needed at once to restore order and reorganize the currency. Frantic appeals were sent to America to hurry along the remittance, but the damage had been done. The accession of Li Yuan-hung to the Presidency failed to produce the much heralded harmony. Canton still insurged, Shantung refused to pacify, Szechuan held out; Tuan Chi-jui in Peking, Feng Kuo-chang at Nanking and Tsen Hsun-hsuan at Canton, with the irrepressible Chang-Hsun at Hsuchowfu, dominated the country with their troops. Tang Shao-yi sulked at Shanghai, while Dr. Sun Yat-sen, Generalissimo Hwang Hsin and other radical leaders withheld support to Peking until their party was firmly seated in the saddle. As the new Government at Peking pleaded for funds, a quiet and effective campaign was being waged in America by the friends of the Southern leaders to obstruct a loan which would strengthen the hands of Premier Tuan.

The firm of Lee, Higginson & Company apparently felt it unwise, under the circumstances, to handle the loan unaided, and approached J. P. Morgan & Company and the old Group bankers for assistance. The American Government aroused itself from its dream and urgently requested its bankers to come to the rescue of China. The financiers of Oshkosh and Kalamazoo had failed the Administration, and, as a last resort, in order to maintain American prestige in China, William Phillips, third assistant secretary of state, was sent to New York to discuss the project with the bankers. The chickens that were hatched when President Wilson denounced the American Group three years ago, came home to roost on the White House perch at last.

In addition to the specific request on the part of the Chinese Government for the loan of $5,000,000, was a statement of its future needs contemplating a further loan of $30,000,000, in which the $5,000,000 would be absorbed. The bankers were unwilling to isolate the $5,000,000 advance, regarding it merely as

an installment of the larger loan of many millions, which would naturally be governed by the same terms. The Chinese Government on its part, was unwilling to pledge any specific security for the $5,000,000 advance, desiring that this sum should be covered by Treasury notes. The bankers held out for specific revenues and refused to isolate the first inst llment. They furthermore requested the support of the American government to an extent that would guarantee the loan to American investors.

The Administration appealed to the patriotism of bankers to stand by it, but the latter balked and declared there was no patriotism in business. They were not lending their own money, but acting as the agents of American investors, and, therefore, it was the duty of the Government to extend its aid in seeing that conditions of the loan were fulfilled should it ever be necessary to insure the carrying out of the Chinese Government's obligation. President Wilson refused to assent to this complete reversal of his policy.

In soliciting the assistance of the American Group of bankers, delicate international political questions arose to further complicate the situation. The Group could not undertake the business without violating its agreement with the other members of the international consortium, and although they were willing to proceed, if the other partners consented, they were confronted with the fact that they would have to contribute all the funds, while deriving only one sixth participation in the supervision of the loan. Further insurmountable obstacles arose to this plan from the natural determination of the Allied governments to exclude Germany from the combination, but as Germany is one of the original partners, and the United States is a neutral country, this plan could not meet with the approval of the American Government.

Other international incidents arose to hamper the already difficult negotiations. The mission of Baron Shibusawa early in the year, to invite American capital to participate with Japan in the exploitation of China, and the veiled threat that independent action on our part would give rise to disastrous consequences, was remembered. And at the height of the negotiation, the terms of the new alliance between Japan and Russia were made public. Despite all assurances to the contrary, there are many intelligent Americans who see in this convention a direct menace to the interests of United States in China, and a determination on the part of these two Powers to effectively close the door of equal opportunity. It was recalled that once before when Secretary Knox brought out his scheme for the neutralization of the Manchurian railways, and there were signs of awakened American interest in China's development, Japan and Russia entered into an understanding for the purpose of "protecting their mutual rights in Manchuria," resulting in the cancellation of the Chinchow-Aigun railway agreement with American capitalists. Furthermore, at this crisis in the affairs of China, Japan refused to abide by the terms of the Reorganization Loan Agreement, and withheld from the Chinese Government her portion of the surplus of the salt revenues deposited in the Yokohama Specie Bank. There was only one interpretation to this move. Japan was determined to humiliate Yuan Shih-kai, and make easier the triumph of the republicans who had made Japan their headquarters, and with whom many Japanese were actively associated. The French Bank followed the lead of Japan, and England and Russia fell in line also, because the others had not paid.

This precedent created misgivings in the mind of the American bankers, for, if in the future such a course is again followed, there would be no guarantee that an American loan to China would be adequately safeguarded, without the backing of the American government, and the hypothecation of specific revenues now unpledged as security for European loans.

The American bankers, it is understood, desired the land tax as security for the loan, to be followed by the reorganization of the land revenue, with American help, along the same lines as the salt gabelle. The hesitancy of the Chinese to assent to this, is undoubtedly due to pressure brought to bear on them by other influences antagonistic to the expansion of American interests in China.

The tangle was hopeless. So the State Department was reluctantly compelled to cable to the American Legation at Peking setting forth the reasons why the loan had failed. In the cabled statement it was explained that the American Group of bankers felt that it would be unwise to invest in any more foreign securities at this time when the American market had all that it could handle. It was recited that the Hukwang bonds that were placed on the market in 1911 at 97 were now offering at 72 with few buyers, and the prospect of a new Chinese loan was not good. For these, and other reasons, the American Group felt it could not engage to handle a new loan for the Chinese Government even of a comparatively small amount.

The Chinese Government had offered to issue bonds for the loan and dispose of them to the American bankers at 93, with the understanding that they would be placed on the market at 97, and outside of other considerations, the American bankers felt that in view of the lack of sufficient guarantees for the payment of the loan, the price suggested was not attractive. In view of the fact that the bankers are being flooded with requests for advances which will net them ten per cent commission, and that the last Chinese reorganization loan was marketed in Europe at 90 with four points commission to the bankers, exclusive of the stamp tax, it is apparent that China's ideas of finance will have to be readjusted to meet war conditions.

The American Government disclaims responsibility for the failure of the loan, and the bankers in turn submit that had the administration come out openly and honestly and swallowed its pride, by requesting them to undertake the loan, and given the necessary guarantees that American investors would be backed up in the event of China through any circumstances being unable to live up to her obligations, a way could have been found to relieve her pressing requirements.

No one desires to shoulder the responsibility for the failure of the loan. Probably no loan was ever placed on the financial market surrounded with so many complicated and vexatious conditions, any one of which are sufficient to kill it. China will have to wait until the first Tuesday after the first Monday in the month of November, to learn whether or no American capital will come to her relief in an administrative loan. If President Wilson is re-elected, China's case is hopeless, unless he undergoes a complete change of heart and frankly reverses his policy. If Mr. Hughes is elected, we may expect to see once more a revival of firm international diplomacy, which will guarantee to American lives and investments in foreign lands their rights and privileges under the treaties.

For the present an American loan to China seems almost impossible of success. There are just twenty-eight fingers in the pie.

# JAPAN DOMINATES CHINA'S FINANCES

**There is a moral to the following story. American loans have made possible the financing of Japan's great munitions factories and the accumulation of immense profits destined for naval expansion. Japan overflowing with money, hesitates to make loans to her Ally and best customer, Russia.**

China must now pay the Piper. She requires another $50,000,000 reorganization loan. She applied first to the United States, but a multiplicity of obstacles created by diplomacy arose to prevent American financiers from making the loan. Perhaps the most formidable of these obstacles is the refusal of the American Government to stand behind its Bankers and guarantee to American bondholders that their investments will be protected in the event that China may not be able to live up to her obligation. It is not that China may default. She has never yet failed to meet her liabilities. There are, however, international political combinations which make imperative the assurance of American governmental support to any large loan to the Chinese Government. China came to us first. We failed her.

Japan now comes forward as the Savior of China. Notwithstanding the significant truth that the Allies require all their funds for the prosecution of the great war, and that they are to a large extent dependent upon the United States for financial assistance, Japan guarantees to raise this loan from the Allied Bankers, in return for considerations, which give her control over China's future foreign financial transactions, and valuable mining rights formerly held by British interests. It is Japan's golden opportunity—the chance of a thousand years. Her Allies are powerless. They must acquiesce in her demands.

The American Government dreams on, while the Door is being closed to its future trade and enterprise in China, with the use of its own money. The time has arrived, brothers, when co-ordination between diplomacy and finance has become imperative to our future prosperity and security. Laws similar to those in force in Europe, giving the State Department full control over foreign loans, should be immediately enacted. If we fail to protect ourselves now, the day is not far distant, when for our lack of foresight, we will find the Door of Equal Opportunity in China firmly locked and bolted against our further participation in this field.

The nation is at the parting of the ways. We must throw overboard the Democratic policy of refusing to support our Bankers in China, or see ourselves swept off the international chess board. If we fail to protect ourselves now, while we have the opportunity, we need not complain in the future. If we refuse to take our place in the world by establishing a permanent foreign policy, let us turn over our State Department to the coterie of old ladies in trousers whose philanthropic diplomatic energies can be concentrated on the protection of our missionaries and educators, and see how far it will conduce to the prosperity and security of the nation.

GEO. BRONSON REA.

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Following immediately on the failure of American financiers to advance the $5,000,000 installment of the proposed $30,000,000 reorganization loan, the inevitable has happened. China must have money. No matter how she gets it, she must have it, immediately. Her own patriotic people refuse to invest their hard earned money in their own bonds so long as the foreigners will furnish the funds for them. Money is urgently required, as it always is, to settle the debts incurred by revolutionary and other leaders in waging war against the government, and it is quite clear that such pressing obligations must be free from foreign scrutiny and supervision over the expenditures. A premium is thereby placed on revolt. When the forces of constituted authority are powerless to effectively crush rebellion, the leaders must be bought off by paying their "campaign expenses." Although weak and impoverished, surrounded by foes who desire her destruction, the Chinese republican's first concern was the perpetuation of democratic principles. They have triumphed. The Republic is saved, but, as we pointed out last month, the Piper stands inside the door waiting for his pay. The war expenses of the Southern leaders must be settled before disbanding their armies, and then, there are other obligations. Whoever supplied the Chinese with arms and ammunition must be clamoring for their money. At the termination of the first revolution against the Manchus, it was the Belgian Loan of $5,000,000 gold, with no provision for the supervision of expenditures, that was slipped through in gross violation of an agreement with the Quadruple Group. To this day no satisfactory accounting of this loan has ever been rendered.

History is repeating itself. The new government made desperate efforts to obtain an advance from America secured on Treasury Notes, as explained in the preceding article. America having failed her, China turned to Japan. The facts disclosed throw a flood of light on the exact meaning of Count Okuma's idea of an Anglo-Japanese commercial alliance for the development of China, and Baron Shibusawa's proposal that America should co-operate with Japan along the same lines. As the "honest broker" or intermediary, Japan would profit from the rich, juicy commissions and concessions for her disinterested assistance, and, in addition, would also expect the other partners to subscribe to her allotment of the bonds.

The story as related in the Chinese press is a simple one. Dr. Chen Chin-tao, the Minister of Finance, had to raise the wind somehow to save the new cabinet from collapse. The Japanese were on the spot waiting for their opportunity. Not for nothing have the continuous round of brilliant Chino-Japanese love feasts been held in Shanghai, Tientsin and Peking. Japan was now China's best friend, her prospective ally. All

old scores were to be wiped out and forgotten in the new and glorious era ushered in by the triumph of the Sino-Japanese revolution against Yuan. The time had arrived for China to pay the first installment on her debt to her new partner.

What America, with all her vast wealth, could not do, was perfectly easy of accomplishment for the Japanese. Ignoring the fact that the Allies are deeply indebted to America for financial assistance, and, that it would be most difficult at this time for them to divert money from their own urgent necessities to place China on her feet, the Japanese told the Chinese Minister of Finance that they could arrange the loan for them through the Quadruple Group composed of Japan, Britain, France and Russia, with Germany and America left out. They would guarantee the floating of an $80,000,000 (silver) loan with the Allies, that is, they would use their friendly offices and best endeavors in this direction, and would themselves advance the $5,000,000 required for urgent expenditures of the Chinese Government. This advance was to be repaid out of the larger loan. In return for this accommodation, the Japanese intermediaries, of course, were entitled to an honest brokerage fee for their disinterested services, which, in their mind, should take the form of mining rights to the Shuikow mine in the province of Hunan and the Tungkwanshan mine in Anhui.

It was all so simple, and it was no one's business anyway. The Chinese Minister of Finance was there to raise the money, and the only ones ready and willing to come forward with the wherewithal, for a consideration, were the Japanese. Why should the Parliament and the Provinces interfere with him in the legitimate work of his office? The Shuikow Mine in Hunan has been in operation for over 30 years, and the profit derived therefrom has already amounted to several million taels. If further capital is required for exploitation, it could readily be raised amongst the Hunanese gentry at a single subscription. These Hunanese are a belligerant lot anyway. They are always making a fuss about provincial rights, when Peking desires to hand over their resources to foreigners for exploitation.

As to the Tungkwanshan mine in Anhui, it was also most straightforward and easy. This valuable property, one of the best in China, at one time was ceded to a British syndicate headed by Sir John Lister Kaye, but owing to the hard headed opposition of the Anhui gentry to foreign control of their mining rights, the concession was handed back to the Chinese Government in 1909. At that time the ore actually in sight was valued at nearly $4,000,000 gold. But things have changed. China is now a republic, and provincial rights have been forgotten in the common cause of democracy. The new republican government required funds at once, so the deal was arranged that the $5,000,000 advance should be paid over by Messrs. Okura, Mitsui and the Japanese Development Company of Tokyo. It is a curious coincidence that the only firms in Japan in the arms business who have arms to sell and who have a monopoly on the export trade, as revealed in the recent Army scandals in Japan, are Messrs. Mitsui and Okura. This, however, by the way. The interest was fixed at 6 per cent and the Chinese Government was to receive 94 or $4,700,000. The Japanese bankers compromised themselves to do their utmost to assist China to make the proposed Reorganization Loan of $80,000,000 or $100,000,000 Mexican. In return for the success of the Reorganization Loan from the Allied Bankers through Japan's friendly assistance, the three Japanese companies above mentioned are to be permitted to work the two valuable mines under a joint Sino-Japanese company.

In other words, the deal resolves itself into allowing the Japanese brokers a half working interest in two of the most valuable mines in China, as commission on a loan or advance of $2,500,000 gold, floated at 94 with 6 per cent interest. A legitimate brokerage fee for this service at the high rate of ½ of one per cent or $12,500, would have been ample compensation for the service, or, if the Japanese were paid full brokerage on the entire $40,000,000 (gold) loan, it should not have exceeded $200,000 at the very outside.

Here is an illustration of what Japanese co-operation in the exploitation of China really means. They have found it most difficult to float a loan for their Ally, Russia, because of the terms and Russia's inability to adequately secure the loan, yet Japanese agents enter lightly into a deal for furnishing China with $40,000,000 gold from the Allies, at a time when the latter require all their available funds for prosecuting the war, and are dependent on America, to a large extent, for credits and loans. And the loan is to be negotiated without the participation of the United States. It sounds good. If such a deal can be put through successfully at this time, we can only again invite the attention of the American Government to the urgent necessity of Government supervision over foreign loans, so that American money can not be employed in closing the door to our trade in foreign markets.

It appears that the Hunanese and Anhui gentry have protested against this interference with their rights. The matter has been taken up and investigated by the Parliament. The Minister of Finance has asked for sick leave preparatory to retirement, because of this meddling with his duties. The loan appears to stand, however. The new regime cannot turn down its new Ally, Japan. The questions arise; will Japan be able to influence the Allied bankers to subscribe to this loan at this time, and leave America out of it; will the Groups consent to a combination of Japanese merchants entering the field, and raking off a luscious commission on a purely administrative loan which China is already compromised to submit to the consortium? It is hard to understand the Chinese. They are perfectly well informed about the condition of their agreement with the international banking groups, which compels China to apply to the latter for all administrative loans; yet with this compromise before them they pay an exorbitant commission to a group of Japanese bankers to act for them as intermediaries in the business, with the knowledge that the Americans are to be left out.

What Japan could not gain last year by direct means through the twenty-one demands, has been obtained indirectly at a time of great financial stress, for on the face of the new conditions Japan becomes the intermediary in Chinese finance, and her concurrence is to be secured in all future industrial or political loans with Western Powers. All this for the paltry promise to exert her influence with the Allied Powers to loan eighty or one hundred million silver dollars to China on the security of the surplus salt taxes.

The Chinese correspondent of the *North-China Daily News* at Peking states that "in connection with this affair another loan from Japan of $30,000,000 for industrial purposes is said to be in view, in return for a number of mining and railway concessions in Shantung, Hunan and Kiangsi. It is stipulated that the Japanese Government will not interfere with the disposal of the thirty millions by the Chinese Government (that is, it will be free from supervision); but in future loans with foreign Powers, either industrial or political, the concurrence of Japan must be obtained first. According to this same authority, Mr. Odagiri, the representative in Peking of the Yokohama Specie Bank, has informed the Chinese Government that he is the leader of the Allied bankers, instead of Mr. Hillier, in connection with the second reorganization loan.

The new government at Peking is fast paying its debt to Japan. When the rest of the Powers wake up, the control of China's finances will be firmly in Japan's hands, without the necessity of enforcing the demand for the appointment of financial advisers.

# THE FAR EASTERN REVIEW

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## SHANGHAI AND MANILA, SEPTEMBER, 1916

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## CONGRESS AND THE CHINA EGG

When Congress decided to lower the cost of living by putting many food stuffs on the free list, one seemingly small item either was not carefully considered or somehow was slipped through that has all but ruined a flourishing industry of the Pacific coast. Three thousand prosperous chicken farmers whose white leghorns laid the breakfast eggs of three states have been put out of business by the duty free admission of eggs. Perhaps the farmers of the tariff bill did not take China into account as a producer of eggs, for had prices and volume of production been carefully considered, it would have been apparent at once that Pacific Coast prices could not be maintained in the face of an unlimited steady influx of eggs that cost only one-third as much landed in California, Oregon and Washington, as did the product of the local ranch.

Legislative aid against the menace was immediately invoked. Bakers and confectioners using Chinese eggs were compelled to advertise that fact by displaying huge placards in all their retail stores and for a time it seemed that the tide of Chinese eggs would pass over the West Coast and confine its competition to the Middle West where feed stuffs and hence hens, were cheap enough to compete with the China egg. But the legislation was declared unconstitutional and ranch after ranch designed for chicken farming only was abandoned. In past political campaigns, eggs sometimes have been factors, but it is safe to say that never before have so many West Coast congressmen feared to face their farming constituencies on the egg question. It is the most poignant note that the rural press has struck in many a day and not only Democratic, but Progressive congressmen as well hear the continued harping. In fact, the whole Republican press has made the China egg an issue, and because of it, is demanding a return to the protective tariff to be fixed by a non partisan tariff board.

Naturally there is a Chinese side to the matter which goes beyond the egg and embraces the whole question of exportation of food stuffs. The Chinese finds that the cost of living is going up in direct ratio with the shipping away of foods, and when this rise in prices is coupled with a fall in the purchasing power of his currency, he feels his case is desperate although perhaps without knowing exactly why. He has no remedy except a rise in wages to bridge the gap between his appetite and his income and when it is considered that nowhere on earth is the competition in every class of labor keener than in China, this solution of the question is not imminent.

Therefore it is apparent that the California rancher has a better chance of being relieved from his incubus than the Chinese. But it must be considered that no matter how the tariff is revised, some will suffer. The diversity of interests makes it impossible to be otherwise and the whole question simmers down to the practical working out of the problem of what is best for the greatest number. The three thousand egg producers of the Pacific Coast are ready and willing to tax the breakfast tables of rich and poor, and at the same time would like to see grains and feed stuffs on the free list to enable them to produce eggs at a lower cost. That the growers of grain and chicken feed may desire protection also, does not enter into the calculations of the egg producers. And so it goes all along the line. Each wants his own industry protected but would have free trade in everything else.

The muddle of conflicting interests is so great and the factors to be adjusted are so numerous and variable that only highly skilled specialists should be entrusted with the task of tariff making. Perhaps a few little items such as eggs whose inclusion on the free list seemed innocuous but which has brought utter destruction to a flourishing industry, may move congress to take the tariff out of politics. If those congressmen whose official careers will terminate shortly because of their tariff tinkerings could be heard, the non-partisan tariff commission would become an accomplished fact. But so far as the West Coast is concerned, it is doubtful whether any legislator that voted for free eggs will return to Washington, and similar arguments may be applied in many other localities whose industries have suffered. This will bring into office a brand

new lot of congressmen, eager to legislate on any subject, and what better one to tackle first than the tariff? From past experience nothing is more likely than that the people of the United States will have to suffer some more tariff tinkering before the rational method of tariff making is forced on congress by the people.

## THE "CHINA GROUP" IN CONGRESS

A "China Group" has been formed of Senators and Representatives in Congress for the purpose of taking the initiative as China's friend and special advocate whenever a threatening international situation arises in the Far East. This step may not unnaturally be followed by the creation of other groups, especially amongst those pussy-footed pacifists, who in times of great international stress are always found on the side of the cynical international aggressor.

It is encouraging to learn that there really exists a few patriotic Americans in the Halls of Congress possessed of the foresight and intelligence to grasp the significance of the issues confronting the nation in the Pacific, and who have banded themselves together to solve the problems we must eventually face.

The designation of "China Group" we believe however to be a dangerous one. All that is needed in an American Congress is an intelligent and patriotic adherence to American principles and established policies. We once had a real man by the name of John Hay as Secretary of State. He laid down a policy which was accepted and subscribed to by all the leading Powers of the world as the corner-stone of international diplomacy in China. If that policy is honestly adhered to, the independence of China is assured.

There is only one way for America to make good her position in the Far East and compel respect for the treaties. Diplomacy unsupported by force degenerates into childish dribble and a writing of Notes, which are read and promptly consigned to the waste basket. If the "China Group" in Congress desires to befriend China, keep the door of equal opportunity open and maintain American prestige in the Pacific, they should concentrate their legislative efforts along lines that will provide the force to support our diplomacy. It is the only way.

## WAS YUAN TALKED TO DEATH?

Colonel Roosevelt's political opponents are not the only ones who feed on Ephrahim's diet. The Premier of Japan thrives on the same fare. Every time Marquis Okuma opens his *furoshiki* some new and wonderful super heated theory is wafted into the surcharged political atmosphere.

In the June number of his own magazine, the *Shin Nippon*, appeared an article on the future of China. It was evidently intended for American consumption, for we find it translated into good English and purveyed to the public through the columns of the *New York Sun* of July 16. The Marquis is emphatic in his assertion that the only salvation for China is to follow in the footsteps of the United States and federalize her government, by dividing the country into eighteen or twenty-one minor states endowed with the power to rule themselves. Notwithstanding that Prince Yamagata, the dictator of Japan's military policy, contends that only under a strong Emperor can China be reformed, Marquis Okuma, the politician, insists on the most advanced form of republican government, as the remedy for her political ills.

**"Should the Chinese fail in this we may be forced to conclude that they are not fit for self government. China will then go on declining at every turn of the political situation, or to speak more candidly she will be doomed to final annexation by other Powers or the establishment of a protectorate."**

In other words, if China cannot put her house in order under a republican form of Government, the day is inevitable when Japan must step in and annex the country or establish a protectorate. He adds:—

**"The argument that China lacks great men to uphold her is extremely misleading. As her history irrefutably proves, necessity will create anything, great men amongst others."**

Marquis Okuma tells us in so many words there must be no more of this foolish "strong Emperor" talk. Autocratic Japan is rabidly republican when it comes to a question of her neighbor's political welfare. China must adhere to democracy. The republic must be preserved, so that continual party strife will provide the opportunity for intervention in her affairs.

This warning to China was followed almost immediately by the death of Yuan. Every honest Japanese will admit that no one is immune from the diatribes of the verbose college president who dispenses wisdom either from the state office of the Premier or from the editorial sanctum of the *Shin Nippon*. Is it any wonder that Yuan Shih-kai for several months suffered from nervous prostration, when, at every turn, he was confronted with the interference of Japan in the affairs of his country, and, in addition, was obliged to listen at all hours to the incessant stream of advice from the Sage of Waseda? The doctors declare that Yuan died from natural causes, but it is clear to those on the ground, that he was simply talked to death. He survived the daily scoldings of twenty-six wives and Lord only knows how many concubines, only to fall a victim at last to the daily curtain lectures of Marquis Okuma on how to run the government of China.

Yuan was hardly cold in his coffin, when Marquis Okuma launched forth with further advice to China under cover of an "Elegy on Yuan Shih-kai and Warning to the Chinese People" which appeared in the July number of his magazine. This brand of Ephrahim's diet was for home consumption, as it was not translated and sent to America for publication as a great "human uplift" document.

In this article he harps on the hedonism and vices of the Chinese people, which have sapped their vitality and rendered them powerless to save themselves from the calamity of foreign domination. If they don't go to pieces on the rock of federalization and be ruled by Japan, then their pursuit of the pleasures of life and their general corruption will in the end justify their absorption. No matter what poor old China does, like the lamb in the fable she will provide the excuse for the wolf to gobble her up.

In the June number of the *Shin Nippon*, the good Marquis is quite positive that China still has many great men to uphold her in case of necessity; in the July number of the same magazine the good Marquis insists that:—

**"The death of Yuan has revealed China in all her weakness. . . .When a country is in trouble you see the advent of a hero to save it from the calamity. So far, China has produced no saviors. All seem alike stricken with the national virus."**

Marquis Okuma is undoubtedly the foremost authority on the past, present and future history of China. When, in the short space of one month, he changes his mind on the possibility of her salvation through the rise of some hero, he knows what he is talking about. If a leader should appear who demonstrated any great ability to master the situation he would be hampered at every step by the obstruction and "advice" of the Japanese, and, in the end, would be glad to lay down the cares of his office, and seek quiet and rest with the spirits of his ancestors, as the only escape from the persistent exhortations and admonishments of the Premier of Japan.

Perhaps if Marquis Okuma would leave China in peace for a spell, a real leader will arise who will pilot the nation through its period of transition. All that China asks is to be let alone. She can be depended upon to solve her own problems in her own way. Let the Japanese stop meddling, keep their finger out of the Chinese "pie" and give the harassed people a rest. They need it.

## RETURN OF THE PACIFIC MAIL

American merchants of China are jubilant over the return of the Pacific Mail Steamship Co. to Eastern and Oriental waters and it is considered by them the most noteworthy event of months in shipping circles. The Company's flag will fly from three ships, the Ecuador, the Venezuela and the Columbia, which plied between New York and Rotterdam before the war and were known as three of the most palatial liners on the Atlantic.

The Pacific Mail Steamship Company was organized even before the discovery of gold in California was confirmed. Its first fleet consisted of three little sidewheel steamers, the Panama, the California and the Oregon. They were of about 1,200 tons burden each, with the old-fashioned low pressure boilers and side lever engines and when crowded could make from eight to ten knots per hour. They often carried 1,500 passengers each in the rush to California, $400 fare for first class, $300 for second class and $200 for steerage passengers.

They had other uses in reconciling their passengers to look calmly on future adversities, for not all the ups and downs of the early mining camps could equal those of a single voyage in the old Pacific Mail. In fact one man suffered so much in one voyage that ever after he said he was ready to meet any fate that befell him with calmness. By 1852 a new steamer, the Golden Gate, was added. It was called a 3,000 ton ship in the advertisements and the astounding fact was further advertised that it cost $400,000. Its register, hung in the companion way, said it was 2,067 tons burden.

It was a fine ship at that time. It sailed into San Diego harbor to exchange mails. A terrible storm struck the coast and played smash even in the harbor. The captain thought it imperative to reach a safer refuge in the harbor, and to do this undertook to turn the ship around, and tried the doubtful experiment of running the ship's prow into the mud, believing the wind would swing the ship around. The result was that the ship went aground her whole length, and was pounded by the seas until the storm subsided. She was raised, repaired, a great upper deck, like that of a river steamer, was put on, and she ran on the route until 1858, when she was burned on the Mexican coast.

Then other ships were put on, the Golden Age, the Sonora, the Golden City, the John L. Stephens, and in 1857 the San Francisco was built for that trade, but in a storm off Hatteras, an air pump broke, the machinery was disabled and in the night the ship was boarded by a wave that swept overboard 80 passengers; a Norwegian bark took the remaining passengers and crew off at daylight next morning and the abandoned ship was left to its fate.

All old timers in California will recall the commanders of those ships: Patterson, Pearson, Watkins, Babey, Randall and the rest. In the 18 years after 1849 the ships made all the principal stockholders rich. Then the placers of California began to fall off and so did the profits of the steamship company. With the close of the Civil War the company built a fleet for the China trade. But the new ships were like the old, only much larger, and were obsolete from the first, for the day of steel ships, the compound marine engine and screw propeller had been ushered in. By the time the overland railroad was completed in 1869 the steamship company had ceased to pay.

More modern ships then were put on the line and in 1887, the Pacific Mail had four steamers of some 3,000 tons each. In the next 20 years despite stiff competition from new lines entering the Pacific trade, the line increased its tonnage to 41,000 with five steamers and had concluded a working agreement with the Toyo Kisen Kaisha for passenger and freight traffic. As the Pacific Mail was a Southern Pacific subsidiary it shared in the general opposition manifested toward the Harriman interests and when the Panama Canal was opened, the Pacific Mail could not compete with other lines that were not under railroad control.

Governmental opposition to the Pacific Mail coupled with the provisions of the LaFollette shipping act finally led the company, soon after the start of the war, to consider the sale of its ships on the Pacific, and the reorganization took place on the passage of the shipping act. The new company after reduction and later expansion of capital is again in the Trans-Pacific trade but its stock is no longer held by the Southern Pacific railway. In January the sale of its 110,000 shares to W. R. Grace and Co., was reported and three months later came the news from Amsterdam that the new Pacific Mail had purchased three ships from the Dutch West Indies Co.

The new vessels were all constructed last year. The Venezuela and Columbia are of 5,500 gross tons each, are 380 feet long and were built in Amsterdam. The Ecuador is of 5,000 tons and was built in Flushing. The three steamers will be run on a joint schedule with the Toyo Kisen Kaisha boats, each company sending out a vessel from San Francisco at alternate dates.

Shanghai welcomed the Equador on September 23. She is under the command of Captain A. W. Nelson, formerly of the Korea and one of the best known skippers in Pacific waters. Leaving Shanghai, she called at the ports of Manila and Hongkong and will start on her return to San Francisco from Shanghai on October 15, by way of Japanese ports and Honolulu.

The three new boats under American registry are oil burners. The appointments throughout are arranged to take advantage of the absence of coal smoke. The cabins are roomy and fitted with one and two beds each instead of upper and lower berths. The building company was the first to discover that coal burning engines and berths were not intended for the comfort of the passengers and could be replaced by oil burning engines and regular beds. Electric fans are fitted into the ceilings.

The Eastern staff of the reorganized company has been on the ground for several weeks. Mr. R. C. Morton, well-known in shipping circles of the Pacific and former agent here, is the general agent for China and the Philippines. Messrs. Anderson, Meyer and Co. are the local agents and Mr. B. C. Haile is in direct charge here. Mr. W. W. Campbell is general agent for Japan.

It has been intimated that two larger liners will augment the fleet within a short time, although the three sumptuously fitted ships, the Ecuador, the Venezuela and the Columbia, will comprise the fleet for the present.

## IMPERIAL PROPERTY HOLDINGS IN JAPAN

The property holdings of the Imperial Household of Japan amount in the aggregate 500,000,000 yen, according to an article printed in the *Nichi-Nichi*. These holdings include shares in the Bank of Japan, the Yokohama Specie Bank, the Nippon Yusen Kaisha, and shares and bonds of many other concerns. Added to these interests, are the contributions made by the Government after the Sino-Japanese War, out of the indemnity obtained from China. The indemnity funds and the stock holdings are said to total 180,000,000 yen. Forests covering 2,130,000 acres and 150,000 acres of prairie land are valued at a sum which would bring the total up to 500,000,000 yen.

If to the foregoing, the market value of the property of the Imperial palace and detached palaces throughout Japan be estimated, Imperial property would reach a much greater figure. The value of this property is increasing 20 per cent. annually. At the same time, every year an enormous amount is expended in Imperial grants. In accordance with the will of the Emperor Meiji, father and predecessor of the present Emperor, the actual expenses of the Imperial family are said to be minimized as much as possible. The greater part of the revenues from the Imperial properties, says the article, is used for various ceremonies, salaries, pensions and social expenses incurred in mixing with the royalty of other nations.

# THE CHINESE FORESTS SERVICE

By Forsythe Sherfesee, Advisor in Forestry to the Chinese Government.

Although for some years both the Government and the people of China have shown an increasing interest in afforestation, especially since the inauguration of the Republic, still strictly speaking forestry in China as a national activity can be said to have had its first real beginning with the establishment in January of this year of the Chinese Forest Service which is entrusted by law with the supervision or execution of all Government work in forestry, and with the encouragement of private enterprise along similar lines. At the head of the Forest Service is the Minister of Agriculture and Commerce, in whose Department the Service is established. The Vice-Minister is, *ex officio*, Director-General of the Forest Service. The Advisor in Forestry also acts as one of the two Co-Directors, the other is Mr. Ngan Han who has a technical education in forestry obtained in one of the United States universities. There are a few other technically trained Chinese foresters in the Service and one English forest expert, Mr. William Purdom, who also serves as the chief of one of the six divisions into which the Service is organized. These divisions are; (1) the Division of Investigation; (2) of Reforestation; (3) of Propaganda; (4) of Education; (5) the Provincial Division and (6) the Clerical Division. It is to appoint a Forest Commissioner in each province, who with a staff of assistants (most of whom will, in time, be technically trained men) will encourage and supervise forestry work of all kinds within the province.

The principal aims that the Forest Service is seeking to accomplish are:—

(1) To lessen the present scarcity and high price of timber, fuel and other forest products of all kinds by the judicious reforestation of public lands unfit for agriculture and now lying wholly or partially idle: thereby lessening the industrial handicap under which the Chinese manufacturer, farmer and householder labour at present, and increasing the comfort and raising the standard of living amongst all classes, particularly the middle class and the poor.

(2) To regulate stream-flow by the reforestation of the more important river-sheds, thus tending to prevent floods, droughts, and the silting up of river bottoms with a consequent obstruction to navigation and the frequent bursting of dikes, the construction of which in the first place was caused largely if not wholly by the deposits of silt washed down from the deforested slopes.

(3) To protect by technical forestry management, involving wise use, such public forest resources as still exist.

(4) To encourage similar activities by private effort by demonstrating that forestry in China is an attractive financial investment and by supplying needed advice and practical assistance.

(5) To conduct a vigorous pro-forestry propaganda throughout China, showing to all classes of people the present national need for forestry, what deforestation and reforestation mean individually to the people, and the steps which the Government is taking and proposes to take to better the situation.

(6) To train up a corps of young Chinese to carry on the various lines of forestry work in China, and to encourage and if possible to assist in the giving of similar instruction in the educational institutions already established.

A beginning in reforestation has been made in the environs of Peking and in the Western Hills as well as in the province of Shantung, and negotiations are now in progress to obtain tracts of land for the same purpose in Hunan and Hupeh. These will serve not only as forest nurseries and experiment stations, but of even greater importance will be their influence in demonstrating to the people round about the most economical and successful methods of growing and transplanting trees of importance in reforestation work. Arrangements will be made to supply gratuitously or at cost price seeds and young nursery stock of the desirable species, and advice as to their care and protection will of course be freely supplied. It is hoped that each station will be a base for the reforestation of the idle land within a constantly increasing radius. As soon as possible other stations will be established in southern China, and wherever the demand for forest products in proportion to the supply is most pressing.

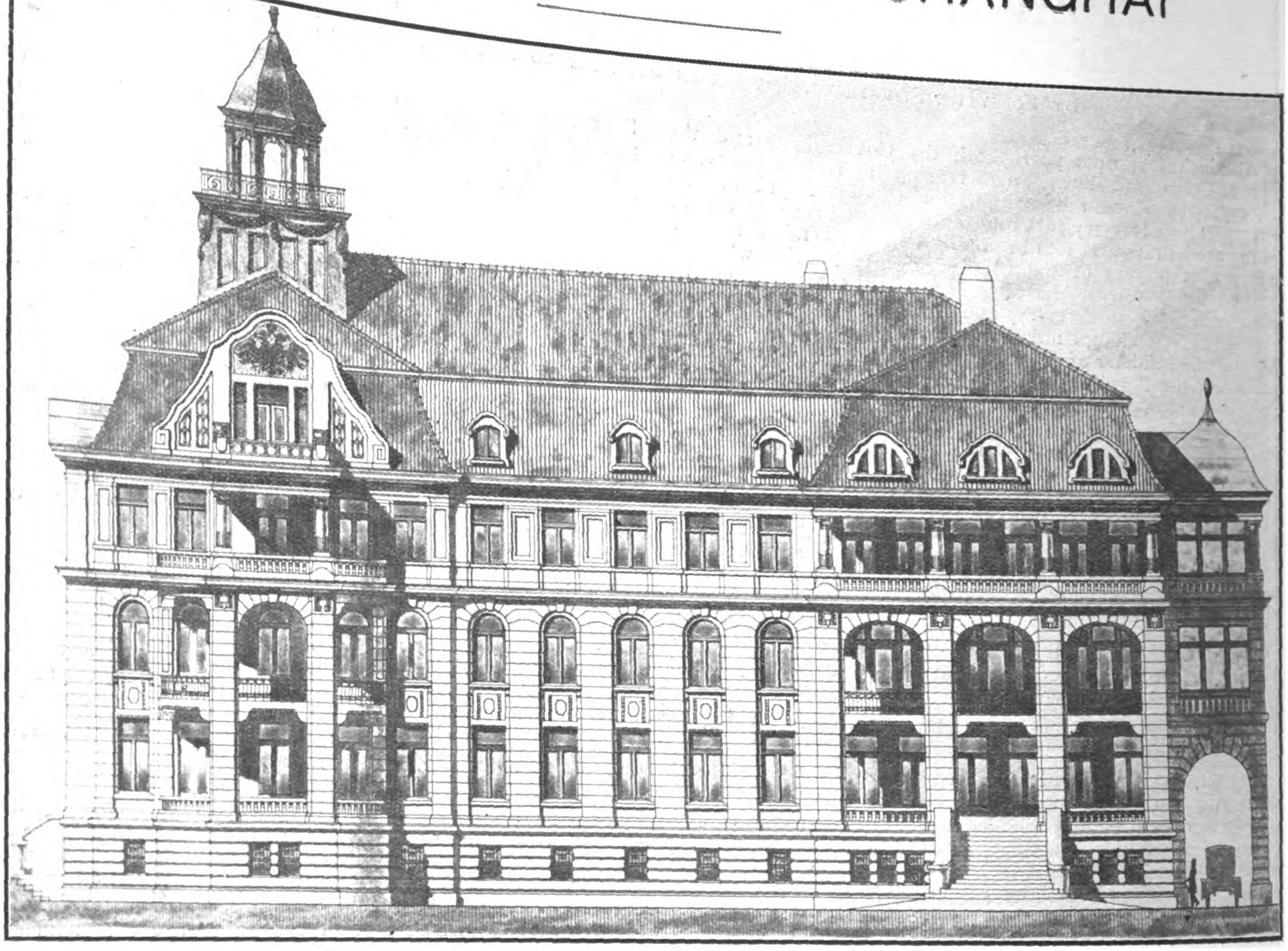
It is realized very clearly that, however active and successful the Government may be in its policy of reforestations, forestry in China, if it is to attain any adequate success, must depend very largely upon private activity:—upon the practice of reforestation and of forest management by private individuals, companies and associations. The work that must be done is too enormous for even the Government to do more than point the way, to show what should be done and the results, financial and otherwise, that may reasonably be expected, and to make it just as easy as possible for others to take up and extend the work either for their own benefit or from philanthropic motives.

Fortunately, throughout most portions of China forestry presents no unusual difficulties save that of protection, and even that in most places is by no means insuperable if a careful knowledge of local habits is first obtained and if unfailing tact and consideration of the other person's point of view are employed. In many portions of the country public land, unfit for agriculture but excellent for forestry, is lying idle and laws have been promulgated which permit its acquisition for forestry purposes by private persons or associations. No such greedy market for all kinds of forest products exists anywhere else in the world. Labour is cheap and excellent. Transportation in general presents no real difficulty as in most instances the market is at one's very door, not to speak of the wonderful system of canals and river ways through which the products of the forest can be rafted to more distant points.

That forestry is practicable throughout most portions of China could not be more conclusively proved than by the presence, so general on idle hillsides and mountains where there is any soil at all, of the rudiments of forest growth, which have continued to persist despite the agelong abuse to which they have been subject since the primeval forests were first destroyed. Best of all, perhaps, is the fact that the forest planter in China, as compared with any other country of which I have knowledge, can expect the quickest financial returns, in fact, by raising in his nursery more young trees than he wishes himself to transplant and by selling the remainder (and in most places a market for such stock already exists or can easily be created) his returns may be made to begin with his very first operation; and thereafter his thinnings and the forest litter in general, which in heavily forested countries are a source of danger and expense, in China have a distinct if small market value.

To the patriot, to the philanthropist and to the investor, forestry in China makes a strong appeal, and under such conditions, although the work may be slow, I cannot believe that it will be unsuccessful.

# BUILDING PROGRESS OF SHANGHAI



*Hans E. Lieb, Architect*

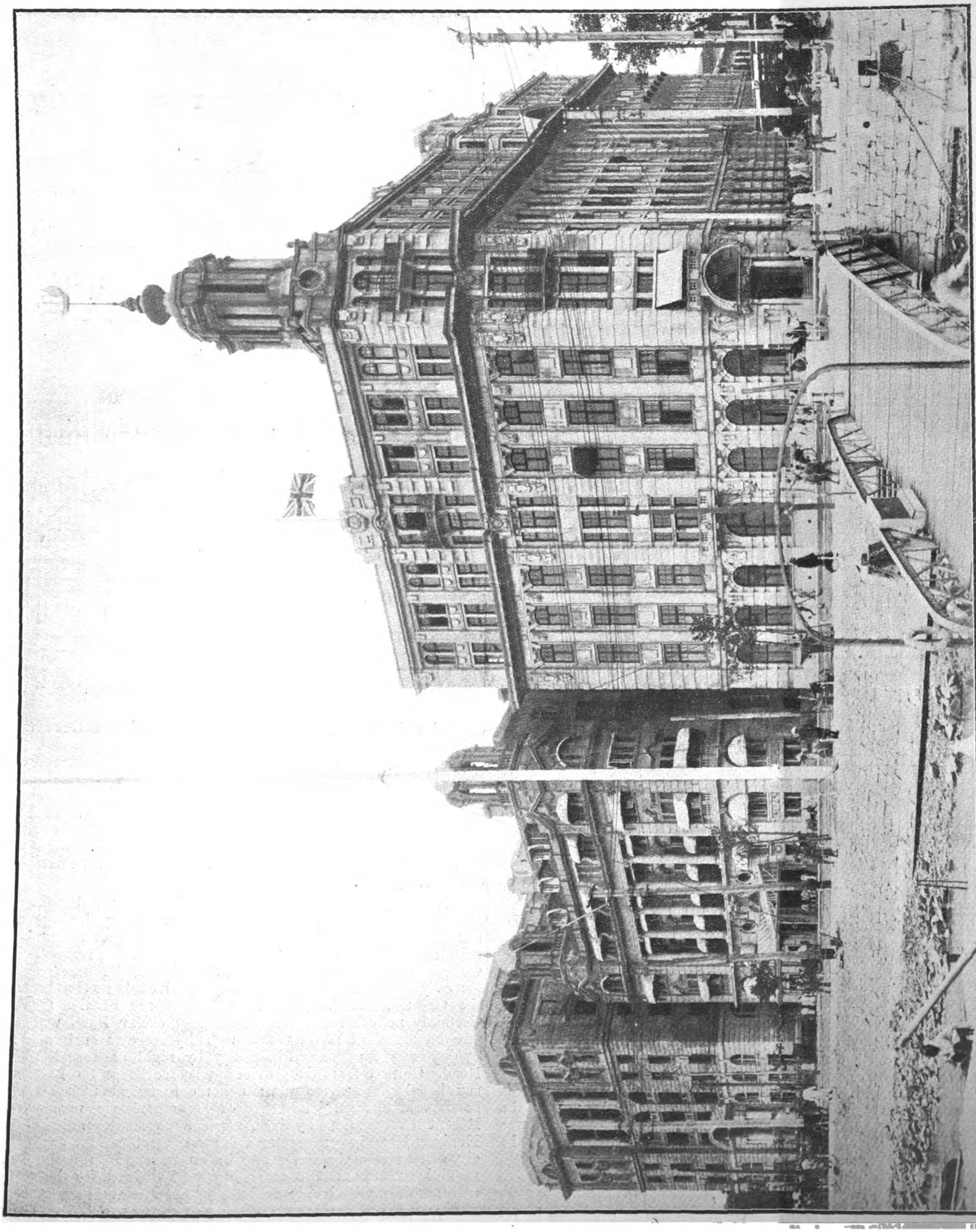
New Building for the Imperial Russian Consulate General

For three years China has been in almost constant turmoil, and practically every year since the overthrow of the Manchu dynasty has seen some outbreak, rebellion, armed foray or organized disturbance, the disorder culminating in the revolution against the monarchy which Yuan Shih-k'ai sought to fasten upon his countrymen. In any other country this state of affairs would have paralyzed business in every branch of trade, industry and commerce. Such uncertainty would have stopped all expansion and building operations in Shanghai, the chief commercial center, would have reflected the state of unrest by coming to an abrupt end. Either China is too big to be affected by other than a general cataclysm, or the men who are working out her commercial destiny are stout-hearted beyond their fellows in other lands, for not only has the unsettled condition failed to slacken previous progress, but all the chief commercial centers have gone ahead much more rapidly than in other years when the peace dove roosted on the Temple of Heaven.

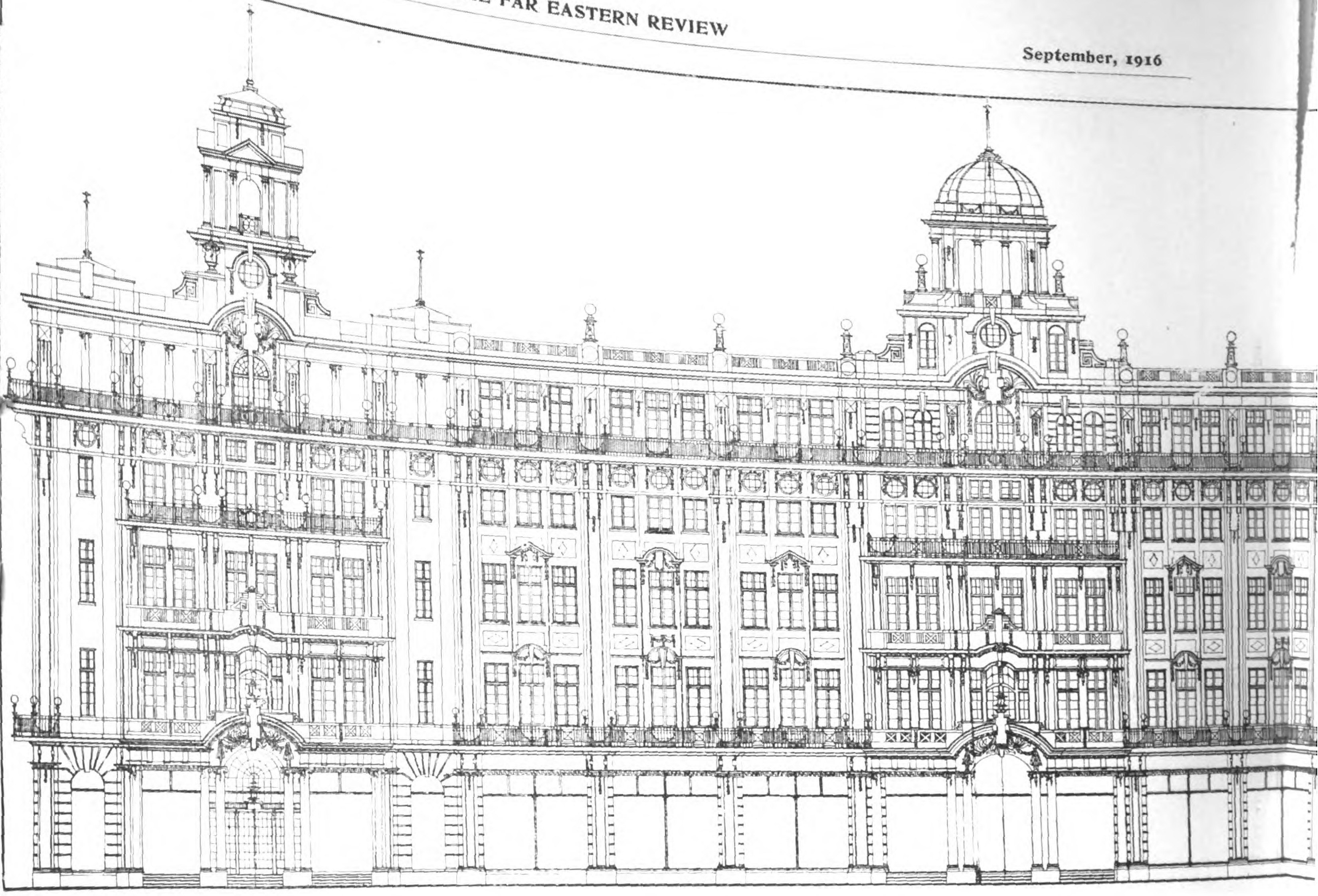
Shanghai as the chief commercial entrepot of China has made more material progress in the past three years than in any other six years of its history and what is true of Shanghai is exemplified in the other treaty ports. But it is with Shanghai's great building activity that the present article is concerned since its advance has been so rapid in the last three years that former residents, returning, say that they scarcely can believe that the city is that which they left only a few years ago. The population of the city is some 550,000 of which considerably more than one-half is made up of the poorest class, men whose daily wage is less than fifty Mexican cents a day. Therefore a comparison with American or European cities would seem scarcely fair since the average standard of living among the people must necessarily be reduced by this great preponderance of cheap labor which requires the cheapest of homes.

Giving this factor its full weight and counting the population as consisting of some 300,000 persons living on an average scale approximating that of Europe or America, and Shanghai's progress does not suffer by comparison. The number of building permits in the last two years totals almost 23,000 and while the average value may not scale up to that of the American city, yet in numbers, Shanghai's new buildings approach that of cities of twice the size and are somewhat greater than those of St. Louis, Missouri, whose population is at least 750,000 or 50 per cent more. The number of new buildings in St. Louis in 1915 for example was 5,181, while Shanghai erected 6,892. The average value in St. Louis was $2,000 gold and while no average of Shanghai buildings is available, it did not fall far short of the prosperous middlewestern city, if building costs are allowed to enter into the comparison.

Far from slackening the progress of Shanghai and the other treaty ports, the state of unrest throughout China was a factor in its growth, since it must be remembered that Shanghai is under foreign administration and aside from its excellent volunteer corps, can call upon the navies of the world for auxiliary defenders in case the peace of the settlement is threatened. This makes the city an island of safety as it were



UNION ASSURANCE COMPANY OF CANTON BUILDING (PALMER AND TURNER, ARCHITECTS) AT CORNER OF BUND AND C[illegible] ROAD (ON RIGHT), SHANGHAI CLUB QUARTERS (IN CENTER) AND McBAIN BUILDING, MOORHEAD AND HALSE, ARCH[illegible] AT CORNER OF YANG KING PANG AND BUND [illegible] [illegible]RTHY AD[illegible] TO SHANGHAI'S WATERFRONT STRUCTU[illegible]



WING ON DEPARTMENT STORE AND HOTEL BUILDING LOCATED AT THE JUNCTION OF SHANGHAI'S FASTEST FLOWING BUSINESS ARTERIES, NANKING

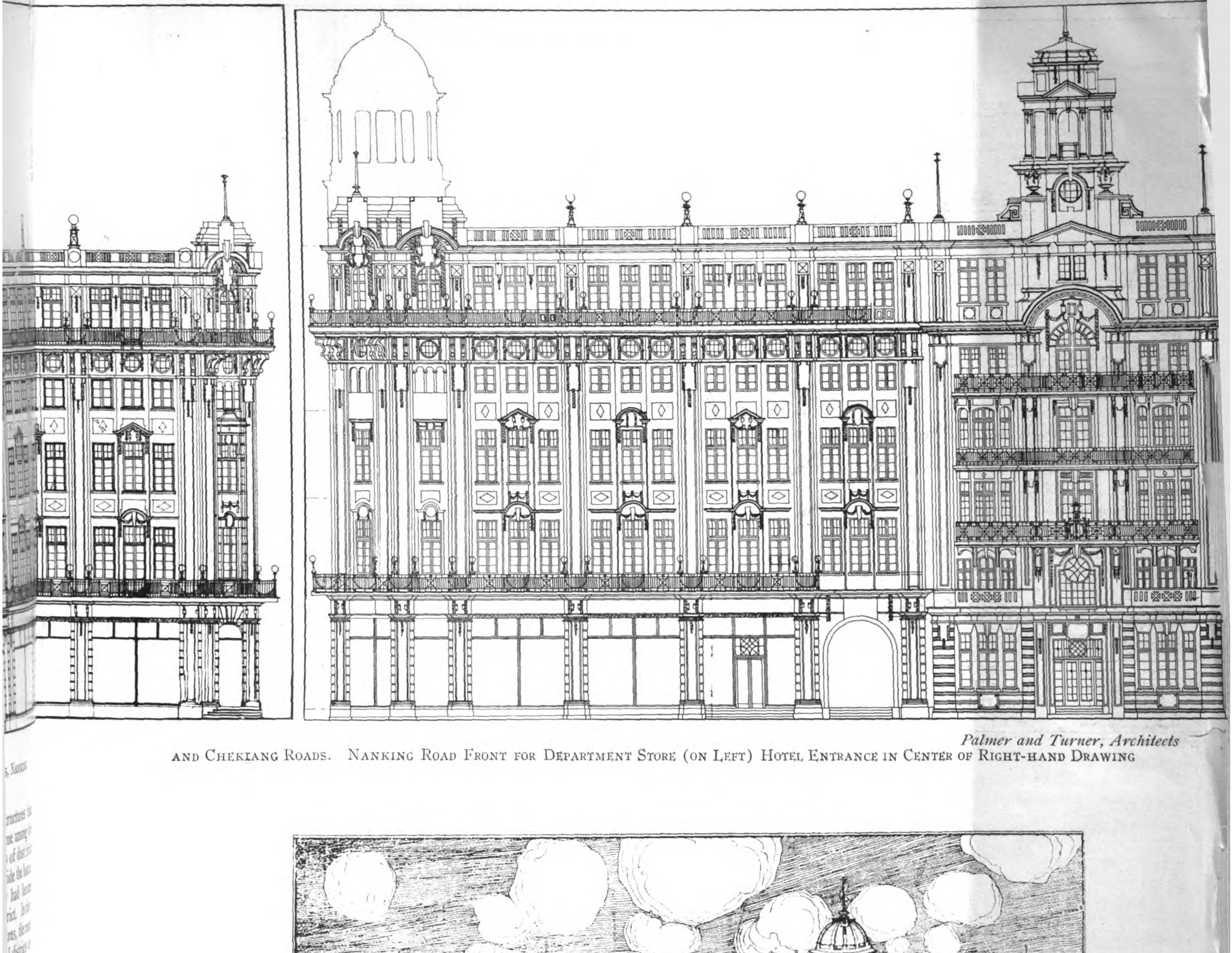
and in times of stress, the well-to-do Chinese take refuge there and materially increase the demand for living quarters. This influx, however, is of slight importance numerically when compared with the increase of workers due to the great expansion of the city along industrial lines. Here, too, the safety factor has some effect since the Chinese show great reluctance about investing in mills and factories other than in the treaty ports, for there only can the investor feel secure against disturbances or interferences with his enterprise on the part of officials.

All these influences have contributed to swell the population of Shanghai and other treaty ports and to give building operations an impetus greater than ever before. The great bulk of the new residential structures in Shanghai are Chinese houses, long rows of two-story barrack-like buildings divided into 10 to 15 foot fronts with from two to four rooms. These rows of houses are considered the best investment in the line of real estate since they insure greatest possible productiveness of the ground. It is not uncommon to find 25 or 30 families dwelling on a plot of ground scarcely more than 100 feet square. That the Chinese are beginning to demand something better than such cramped quarters is shown by the construction of one block of 1,000 houses with foreign style fittings and modern conveniences whose rents are slightly higher than the average throughout the city. The entire thousand were rented before the first one was ready for occupancy and the waiting list is so long that the success of other similar ventures is assured.

This great expansion in residential buildings has been equalled if not surpassed by the increase in new structures for business purposes. Some three years ago it began to be recognized that Shanghai's business had quite outgrown the existing facilities in office and storage structures, while the retail business district was expanding in every direction. This created a building boom in these classes of structures that surpassed the expectations of even the most sanguine among the city's property owners. On every side rose clouds of dust from the demolition of residences that had lain just outside the beaten track of commercial activity so long that they had become landmarks of the boundaries of the business district. In their place have arisen blocks of stores and office structures, the rental of which was so rapid that many former residential districts are now added to the retail business district which is still stretching out on every side.

Not only have these new districts been created, but the old streets have been changed beyond recognition by the improvements that have taken place in the last few years. Nanking road or the "Maloo" as it is known to the older residents, its Chinese name being the "Great Maloo" since "Maloo" signifies only a road through which one can drive a horse, has become the Great White Way of Shanghai, if not of the Orient. Certainly no other business street in the Far East, with the possible exception of the Ginza in Tokyo, shows such activity by day or such a blaze of brilliancy by night as does Nanking Road. Chinese from the provinces who see it for the first time say that they are afraid to write home to tell about it lest they be thought to have gone crazy or become utterly mendacious. Recent investigations by the American consulate indicate that Nanking Road has a greater volume of traffic than any other city of its size in the world and its entire length from the Bund to Thibet road, once the outer limits of defence for the settlement, is lined with handsome buildings of brick and concrete.

At least 20 new business blocks have been erected in this street during the past two years and to-day on half a dozen sites building operations of magnitude are in progress. The centers of greatest activity are the widely separated corners of



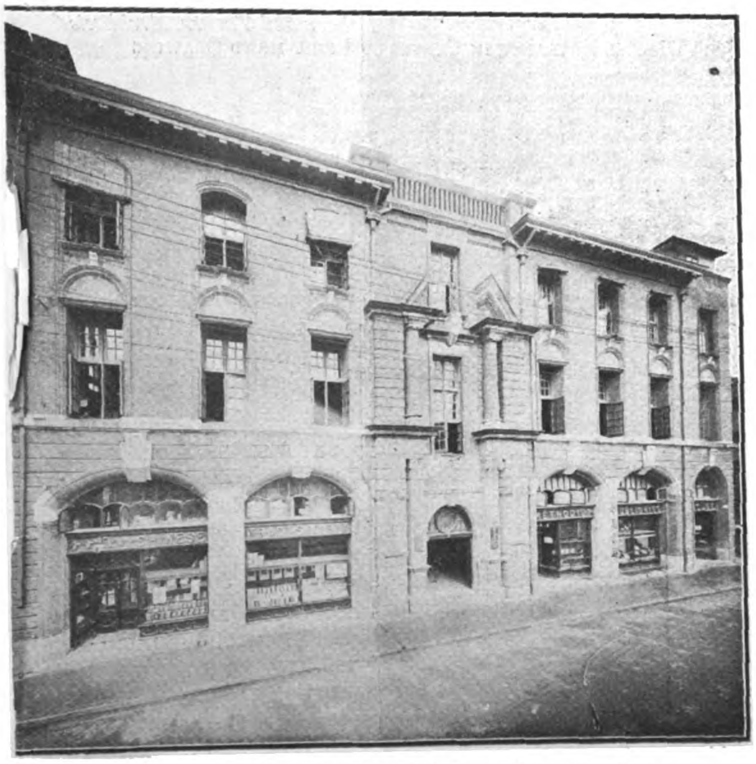
*Palmer and Turner, Architects*

AND CHEKIANG ROADS. NANKING ROAD FRONT FOR DEPARTMENT STORE (ON LEFT) HOTEL ENTRANCE IN CENTER OF RIGHT-HAND DRAWING

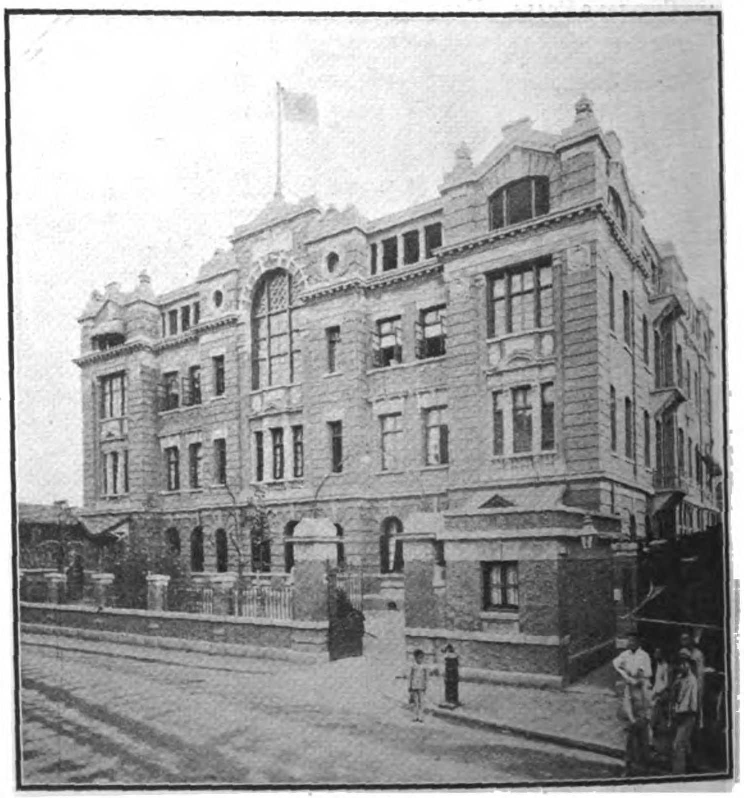
ARCHITECTS' DRAWING OF WING ON BUILDING SHOWING ROOF GARDEN AND TEA PAVILION WHICH WILL BE FEATURES OF NEW CHINESE HOTEL

Masonic Building—one of the Handsome New Structures on the Bund Facing the Public Garden

German Post Office at Corner of Foochow and Szechuen Roads

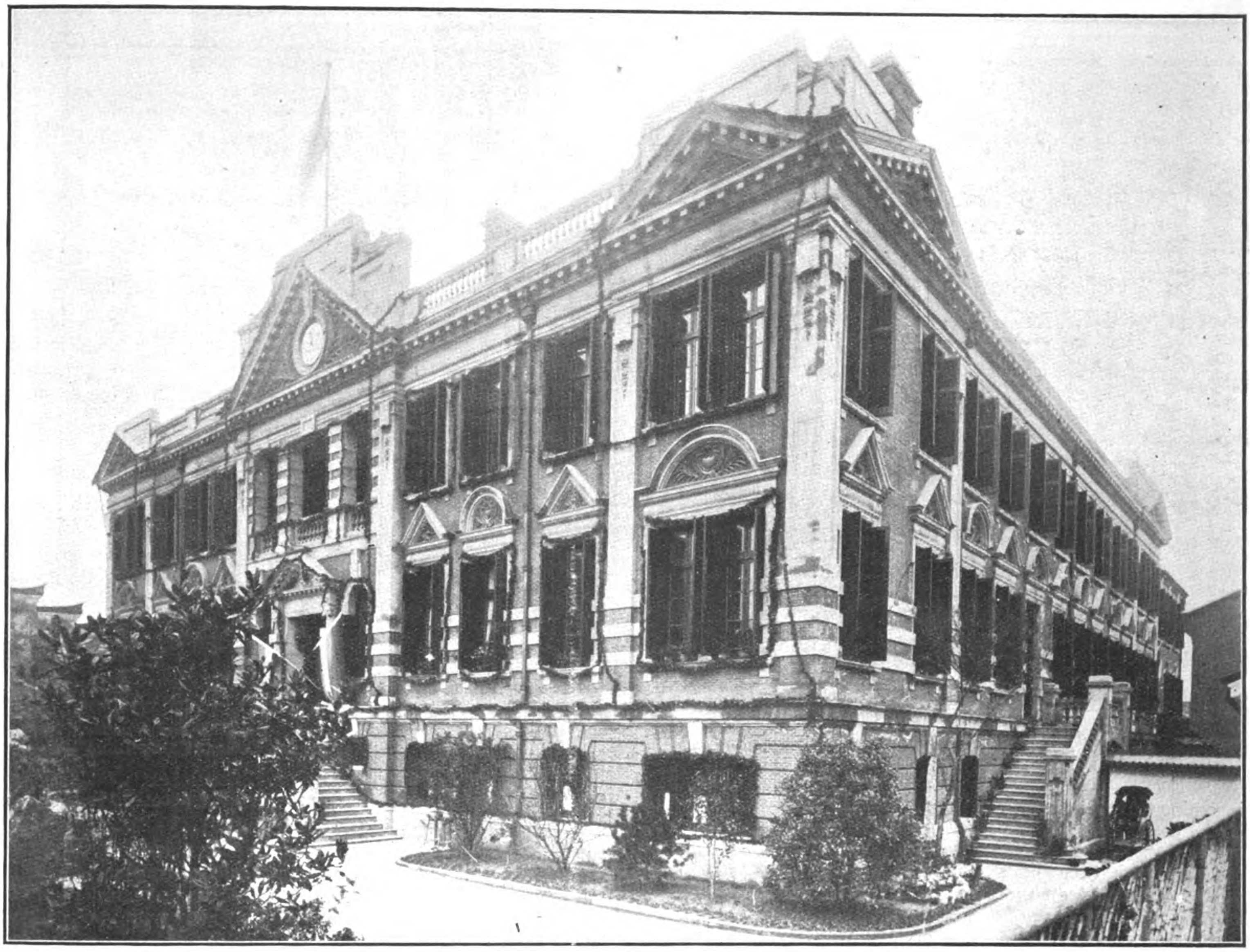


New Building for Chinese Y. M. C. A. on Szechuen Road



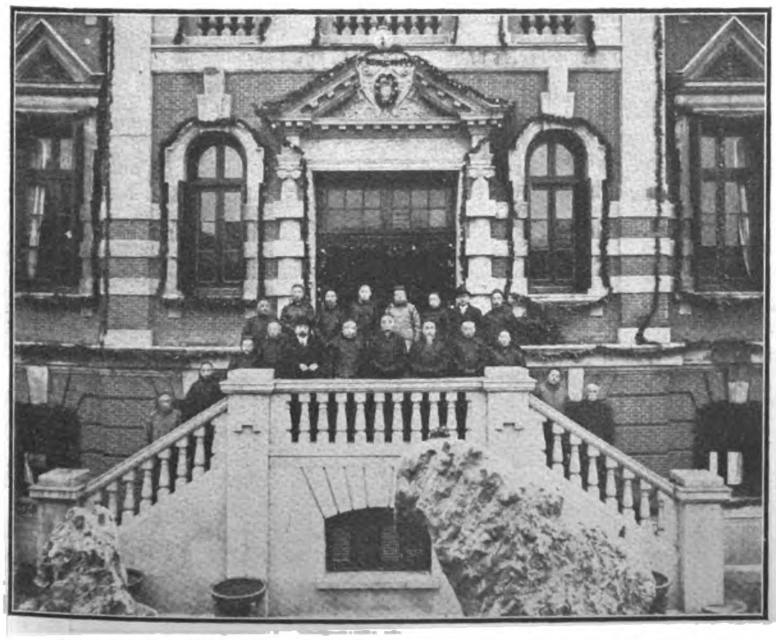
New Club House of Japanese Community

iangsi and Chekiang roads, one being in the foreign business strict and the other in the heart of Chinese mercantile activity. he Chinese buildings include two large department stores and ro hotels for Chinese. In the foreign section the most teworthy improvement is the destruction of a number of mshackle brick structures that will be replaced by modern stores, offices and flats. This latter improvement is of great importance in that it gives opportunity for the widening of Nanking Road at one of its points of greatly congested traffic.



Chinese Chamber of Commerce Building Adjoining Temple of Queen of Heaven in North Honan Road

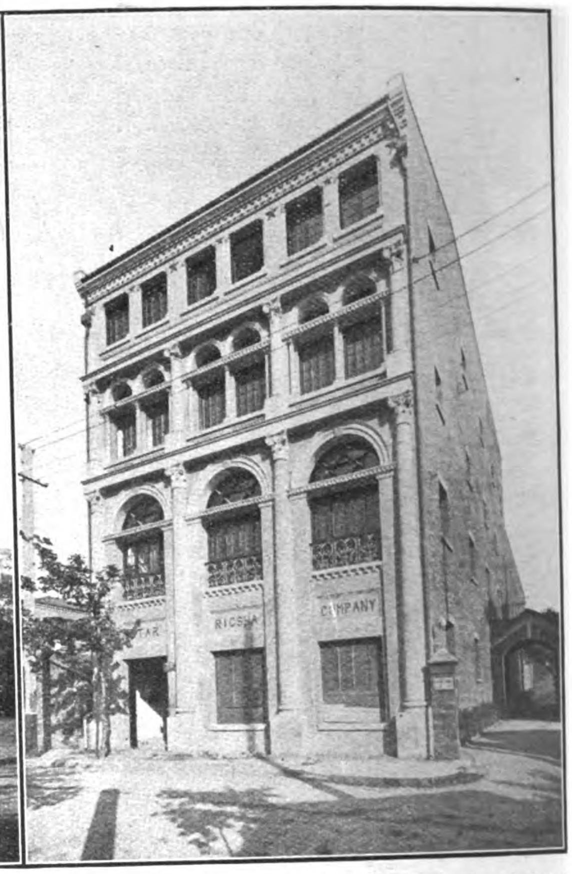
Shanghai has one feature that makes it the most beautiful city in the Orient so far as travelers' first impressions are concerned. This is the Bund with its row of magnificent buildings that include many examples of the highest types in business architecture, fronting on the 200 foot wide stretch of green that separates the Bund and the banks of the Whangpoo, the



Entrance to Chinese Chamber of Commerce Showing Committee which was in Charge of Building Operations

Assembly Hall of Chinese Chamber of Commerce—Decorated for Dedication Ceremony

*R. E. Stewardson, A.R.I.B.A., Architect*
WEST EXCHANGE BUILDING OF SHANGHAI TELEPHONE CO.




*Lafuente and Wootten, Architects*
STAR RICSHA COMPANY'S BUILDING

incoming traveller receives an impression of majesty that is afforded by the approach to no other city in the Orient. Even Hongkong with its advantageous location on a mountainside cannot compare with Shanghai's Bund for beauty. Property is immensely valuable on the Bund and the improvements are in keeping with the cost of the ground. In the past three years a number of structures have been erected which will compare in beauty of design with those of any city in the world, and it is only a question of a few years before the last remaining landmarks of British Shanghai fifty years ago will have disappeared under that new International Shanghai in whose development the British merchants have played so large a part.

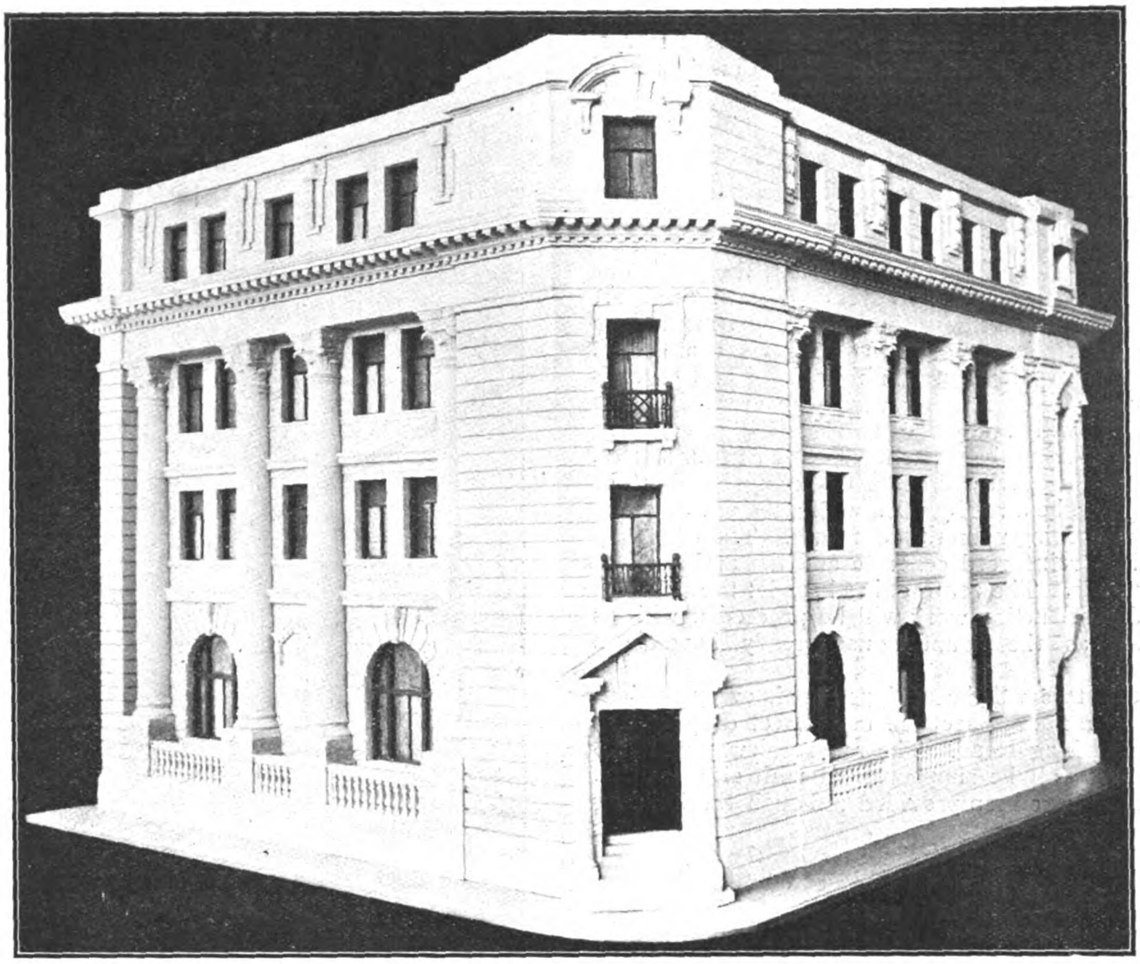
The illustrations accompanying this article show only a few of the many improvements that have taken place in Shanghai's recent history. It is obviously impossible in the space allotted to this article to give full representation to all the new buildings erected in Shanghai during the past two years and it is expected that many other buildings will be illustrated and described in the next and succeeding issues of the FAR EASTERN REVIEW.

One of the most noteworthy advances in building operations in Shanghai was the construction of the Union Assurance Company's building at the corner of the Bund and Canton Road. This structure is the first with a skeleton of steel framework construction and covers an area of 200 feet on Canton Road by 100 feet on the Bund. Rising to a height of 105 feet to the top of the sixth floor and being surmounted by a corner tower of pleasing proportions, the entire height of the building is about 150 feet from the street to the golden argosy that forms its weather vane. The lines of the building are beautiful and the structure is graceful in the extreme, forming a noteworthy monument to the skill of the architects, Messrs. Palmer and Turner.

One block of the building, containing lavatories and coolie quarters, with water tanks at the top, has ten stories, but as the stories in this case are not so lofty as those of the main building, the total height of this block will be little more than the rest of the structure. Another block, which is also at the rear, is for godowns for storage of goods of the tenants of the offices. This is supplied with an electric cargo lift to serve the various floors, and the architects have provided for access to the godowns from each floor let as offices.

The style of architecture is free Renaissance, with well marked vertical lines expressing the skeleton construction of the building. The plinth is of granite, the remainder of the filling walls being of brickwork finished with an artificial stone facing.

MITSUBISHI BUILDING AT SZECHUEN AND CANTON ROADS.



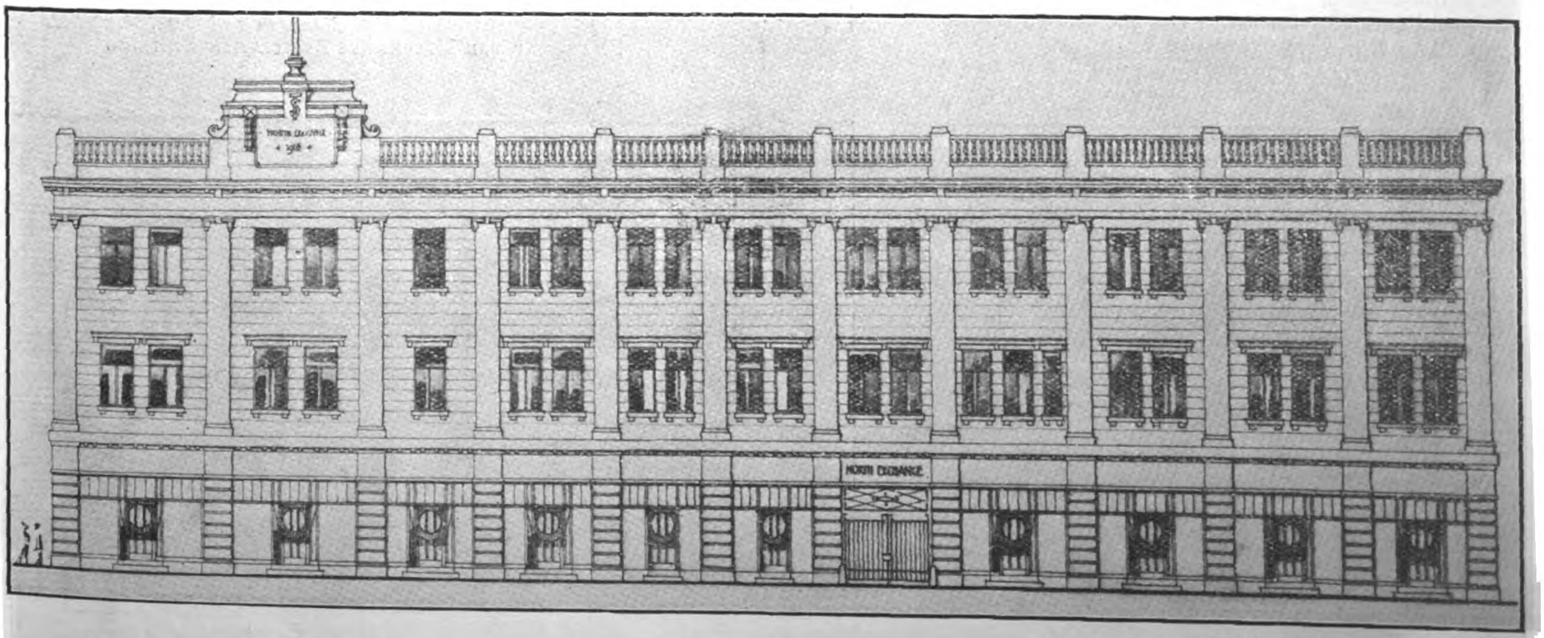
*R. E. Stewardson, A.R.I.B.A., Architect*
NEW OFFICE BUILDING FOR NORTH CHINA INSURANCE CO. AT KIUKIANG AND SZECHUEN ROADS

The ground, first, second, third and fourth floors are let as offices, part of the first floor being occupied by the Union Insurance Society, the owners of the building. On the fifth floor are residential flats of the highest class, with roof gardens on the flat concrete roof. These flats command a magnificent view of the river and of Shanghai, and their height ensures coolness and quiet.

The office on the ground floor, which extends to practically the full depth of the site, is the largest single office without division walls in Shanghai. It has windows on three sides, while overhead is a large lantern light. An imposing entrance from the angle is provided for this office, with subsidiary ones in Canton Road for the remainder of the building. This office has been taken by an American import and export house.

The principal entrance is in the center of the Canton Road front, and is flanked by massive granite columns with carved pediments. This leads to an imposing entrance hall. The upper floors are served by two fast electric passenger lifts.

For the office floors the arrangement is for large open spaces, divided up to suit tenants. The ten-story block



*R. E. Stewardson, A.R.I.B.A., Architect*
NORTH TELEPHONE EXCHANGE BUILDING, UNDER CONSTRUCTION FOR SHANGHAI MUTUAL TELEPHONE CO. AT HAINING AND FUSAN ROADS

previously referred to provides lavatories and coolie quarters and there are likewise strong rooms for the separate storys. While fire-places are built in the residential flats and some of the principal rooms of the building, the general heating of the building is by hot-water radiators.

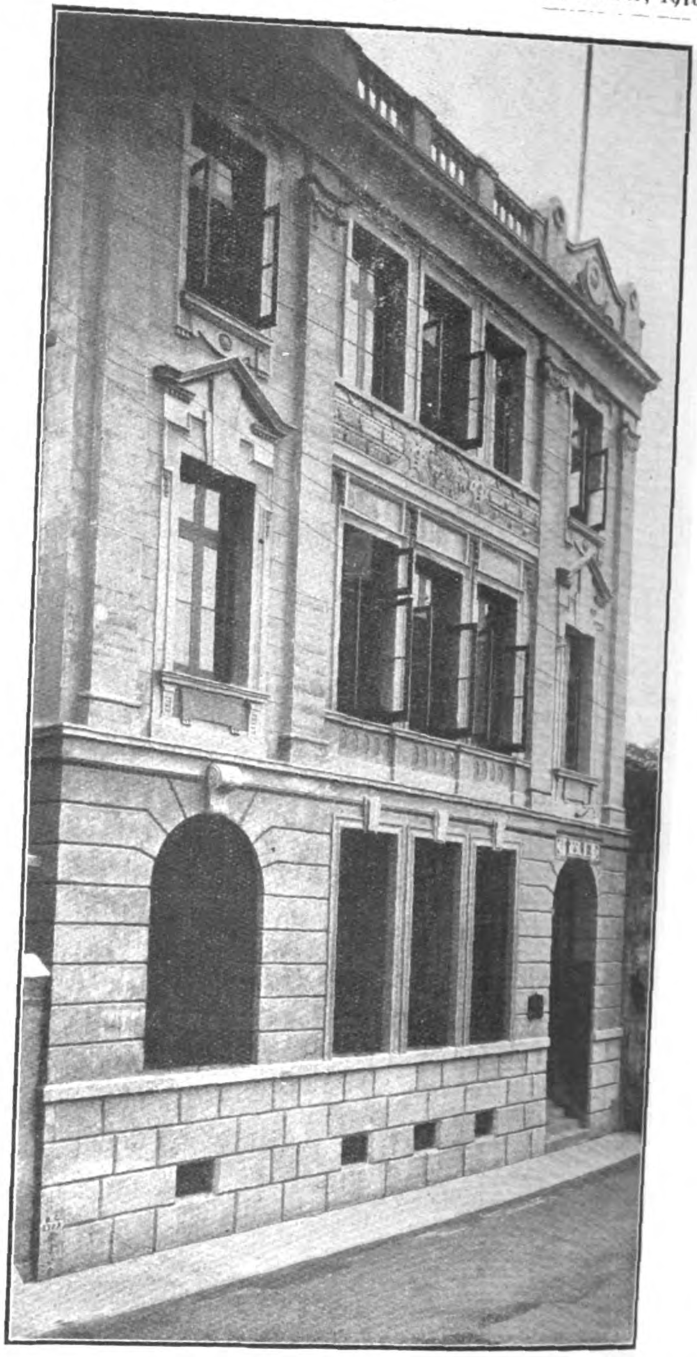
## The New Department Store and Hotel

The Wing On building which is to house a department store and a modern hotel for Chinese, is located at the intersection of Chekiang and Nanking Roads and as this is the center of traffic of the Chinese section of the Foreign Settlement, the site is one of the most suitable that could be secured. It is in the heart of the Chinese theater district and both the department store and hotel will fill conspicuous gaps in the city's commercial activity. The site is 215 feet on Nanking Road and extends some 200 feet on Chekiang Road, covering an area of 64,500 feet. The building will really be two blocks in one, the Nanking Road front having the department store of four stories, while the entrance to the hotel will be on Chekiang Road. The top of the building will be a roof garden with a tea pavilion and special dining room opening upon the roof level. The construction materials will be reinforced concrete and the architectural style a free renaissance. The contract has been let to Lam Woo of Hongkong and construction work will be proceeded with as rapidly as possible as the foundations already have been completed.

The department store will be equipped with every modern appliance and the open floor space will be 98 feet deep by 215 feet frontage on Nanking Road. The main stairway will be 8 to 10 feet wide and will be supplemented with electric lifts. Adequate fire escapes have been provided although the building is of fire proof materials.

The hotel which will occupy the rear of the block will compare favorably with the foreign hostelries of Shanghai and other treaty ports. It will cater to Chinese exclusively and will have every modern convenience and equipment throughout. There will be 100 rooms of which the majority have a southern exposure. These bedrooms will be fitted in foreign style and are intended to meet the demand of the Chinese accustomed to Occidental manners and customs. The main corridor will run the full length of the building and in addition to the customary lounge and reading rooms, a business room for the convenience of visiting merchants will also be provided. The appointments of the billiard room will be from the best makers, while no expense has been spared in selecting the furnishings for the ladies' drawing room. This will open upon a terrace. A commodious ball room will be provided for large public functions. One of the features of the hotel will be the roof garden and tea pavilion which latter will provide special dining-room facilities. In the rear of the block will be located a modern bathhouse equipped in foreign style for Chinese patronage. The architects for the Wing On group of buildings are Messrs. Palmer and Turner.

*(To be Continued in the October Issue)*



*Denham and Rose, Architects*
SHANGHAI IRON MERCHANTS ASSOCIATION BUILDING

*Lafuente and Wootten, Architects*
STAR GARAGE BUILDING ON BUBBLING WELL ROAD

*Lafuente and Wootten, Architects*
EASTERN GARAGE BUILDING AT SOOCHOW AND YUEN MING YUEN ROADS

# ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

## RAILWAYS

**Foochow Railway Survey.**—An official was directed in 1915 to make a preliminary survey for a proposed railway from Foochow to Mamoi (Pagoda Anchorage). A survey bureau was established and the flags of surveying parties were to be seen on the plains and hills in the neighbourhood. Various permanent triangulation stations have been established and marked by beacons. Part of the Lienchiang River also has been surveyed with a view to dredging. The waterways of the city have been cleaned and dredged, and the streets kept clean.

**Chao-Shan Railway Traffic.**—The total number of passengers carried on the Chao-Shan Railway is estimated at 1,002,643, and the total amount of goods carried at 23,953 tons. The gross earnings for the year amounted to $321,471. This line runs from Swatow to Chaochowfu—24 miles—and was inaugurated in November, 1906. The station at Swatow is some 2 miles from the business quarter and difficult of access. With the view to compete with the waterborne traffic a project is on foot to extend the line in proximity to the harbour, but this will entail a heavy expenditure for bridging and bunding the waterways which separate t..e station from the town, and since it is an axiom that water-borne trade of heavy and bulky goods will always be able to hold its own against railway competition it is doubtful if this project will mature.

**Canton-Hankow Railway.**—The Yueh-Han Railway is still under construction. The stations Mapa and Shiuchow, 130.08 and 139.28 miles respectively from Wongsha terminus, were opened to traffic in June, 1915. The line has carried about 4,850 passengers daily, paying on an average fares amounting to $1,436. The average number of tons of goods carried by the line is 260 per day, and the freight thereon is $1,115. Shortly after the opening of the Shiuchow station, the line suffered a good deal from the flood, as most of the earthworks were washed away. From the 10th to the 21st July water from the river overflowed the track to such serious extent that the whole line was forced to stop running. It took a month to restore the line to comparative order at a cost of $110,000. From the 17th to 21st sections, at the end of the Kwantung portion of the line, only surveys have so far been done. It is learned that after the completion of the tunnel at Kaolintsun, in the 16th section, construction of the line will probably have to be discontinued, owing to the straitening of the Company's finances. The Canton-Samshui branch of the Yueh-Han Railway has collected $2,340 daily, of which passengers contribute $2,290 and freight $50. An amount in the neighbourhood of $15,000 was expended on account of repairs to the line caused by the flood.

**Sunning Railway Earnings.**—The earnings for the year of the Sunning Railway line amounted to over $800,000. The most profitable traffic, chiefly passenger, proved to be on the sections between Pakkai and Kongmoon town and the Sanwui city. An extension of the railway to Yeungkong is under contemplation.

**Canton-Kowloon Railway Traffic.**—The total number of passengers carried by the Canton-Kowloon Railway during the 12 months of 1915 was 1,904,344, and the number of tons of goods (including parcels) was 45,741.

| | |
|---|---|
| Total receipts for the year........ | $ 794,446.36 |
| Total expenditure, including interest paid for loan service, during the year .................... | 1,827,665.25 |
| Deficit......................... | $1,033,218.89 |

No extension was undertaken during the year. The proposed connexion with the Yueh-Han Railway by a line running to the northward of Canton city is still under negotiation. There is a 2-foot gauge light railway, 5½ miles in length, connecting the Lokong group of villages with Namkong station, 17 miles from Canton. A similar line to run from Tsengshing to Sintsun station, is about to commence operations. Both these and the Canton-Kowloon lines will be of great mutual benefit. The very heavy loss sustained by the railway during the year was due to (1) the keen competition with river steamers, (2) the disastrous flood in July, and (3) the enhanced cost of railway material owing to the war. From June, 1915, two more through express trains were inaugurated, one departing from either end at noon. These two additional trains have afforded great convenience to the public; and the receipts therefrom have steadily increased.

The building of the new terminal station at Kowloon made satisfactory progress, and by the end of the year was nearly completed. The night train service remained suspended throughout the year.

**Samshui-Canton Railway.**—Mr. R. C. Johnson, Engineer-in-Chief of the Samshui-Canton Railway, reports as follows concerning the working of the line during 1915: Passengers carried, 4,008,819; Passenger receipts, $812,383; Cargo carried, 7,841 tons; cargo receipts, $16,830; Miscellaneous receipts, $5,445; total receipts, $834,658; total expenditure, $480,010; net profit, $354,648. This is a decrease as compared with 1914, but not as much as might have been expected, seeing that communication was interrupted for more than two and a half months by the floods, which necessitated the expenditure of about $70,000 for various repairs. No extension of the line is contemplated while the war in Europe continues.

**Russia and Chinese Railways.**—According to a Washington, D.C. dispatch, the Russian government immediately after the close of the war, will issue a loan of $24,333,000 to China, to be used exclusively in the construction of five railroad lines in Manchuria, according to an agreement just reached between the financial agents of the two countries, the details of which have been reported to the state department by Consul Caldwell at Vladivostok.

**Nanchang-Kiukiang Railway.**—Concerning the recent flotation of a Japanese loan of $2,000,000 for the Nan-Hsun (Nanchang-Kiukiang) railway by the said Railway Company at Kiukiang, the members of the Provincial Assembly of Kiangsi have sent in a telegram to the Government, according to Peking advices, strongly denouncing this movement and requesting that an order be issued by the Ministry of Communications to put an end to the loan. The loan was to bear 8½ per cent interest per annum with the railway properties as security. This led to the fear among the gentry that Japan in time would secure control over the Central Yangtze Valley through this line. The senders of the telegram remind the Government that the Japanese Government demanded by ultimatum last year the right of constructing a railway from Nanchang to Tsaochow and that as the Yangtze-Kiang is regarded as a British sphere in China, the control of the Nan-Hsun Line by Japan might lead to complications with Great Britain. It is reported that $220,000 had already been advanced by the Japanese Eastern Development Company at Hankow to the borrowers without waiting for Government sanction.

**Lift Ban for Munition Shipments.**—The limitations that were placed on the shipment of freight from Changchun, the terminus of the South Manchuria Railway, to Harbin by the Chinese Eastern Railway have been removed, the railway being needed for the shipment of munitions for the Russian Government. The Chinese Eastern Railway has been carrying about 150 tons of goods a day since July 20 and since that date these limitations have been in force.

**The Kirin-Changchun Railway.**—A Changchun telegram to Tokyo states that the negotiations over the revision of the Kirin-Changchun Railway Agreement between China and Japan which are in progress in Peking are expected to be concluded in September. The amount for the new loan proposed by Japan is Yen 6,500,000, while China demands $10,000,000. There being a fear that the capital may be used for other purposes than the railway, the negotiations are delayed. The Railway is reported already to have spent silver $6,500,000.

**Railways in Japan.**—According to a recent report the total mileage in the islands of Japan is 5,768 miles of state railways and 1,672 miles private railways. In Chosen or Korea the Government railway is 1,060 miles, while the private railway has only 110 miles.

The south Manchurian Railway has 701 miles, the Formosan Railway 320 miles and the line of private railway in Formosa is 261 miles. There is a railway of 60 miles in Sagbalien.

If to these, the Shantung Railway and the Chinese Eastern Railway are added the total length of Japanese owned Railways will be over 10,000 miles.

**New Cars for Japan.**—Japanese Government Railways have taken in hand a wholesale repairing of goods cars in anticipation of the congestion of railway goods consequent upon dearth of ships' hold space. The repair of altogether 3,500 goods cars is expected to be completed by October. An order for 1,000 new 15 ton goods cars to be finished by April next year has also been placed with private factories.

As a result, the carrying capacity of the Northern lines will be enlarged from 800 tons a day to 1,200 tons a day, and the usual congestion of cargo on those lines will be completely relieved. However, the connection service between the Kobe-Shimonoseki and

the Kyushu lines will be still inadequate for the carrying of the ever-increasing cargo coming from the new industrial centre in Fukuoka and district to the main land of the Empire.

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**Criticise Chosen Railway.**—The Chosen Koron (Korean Critic), a monthly periodical edited in Japanese, in its September issue, treats at full length the Chosen Railway Administration. Dozens of pages are devoted to scathing criticisms of the Chosen Railway. The running expenses, etc., which have been kept from the knowledge of the public with a painstaking effort in order to cover up how poor the Railway returns were, are given as under:—

According to the statement of account for the fiscal year of 1913, the per mile per diem average earnings of the Japanese Railways were as follow:—

| | |
|---|---|
| South Manchuria Railways ........... | 87.95 |
| Imperial Government Railways ...... | 56.82 |
| Private Railways ........................... | 41.00 |
| Chosen Railway .............................. | 19.09 |

The earnings of the Chosen Railway were by far the smallest and represented only 21.6 per cent of those of the S. M. Railway, 48.6 of those of private railways, and 33.6 of Imperial Government Railways.

Next, the article alleges, the working expenses of the Chosen Railway were inversely heavy, the running mile costing 20.83 sen which is more than four times as much as the Imperial Government Railway costs. Allowances should be made for the narrow gauge of the Japanese railways but comparison may be made with the S. M. Railway which is of standard gauge, as is the Chosen Railway. The S. M. Railway laid out only 9.4 sen per running mile for the same year. This is all the more remarkable because even the S. M. Railway, which is reported to be maintained with a liberal hand, required only 45.1% of the current expenses of the Chosen Railway.

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**F. M. S. Extend Railway Shops.**—The Federated Malay States Railway are planning a large extension, costing over a quarter of a million dollars, to the workshops at Sestul, to deal with the increase in rolling stock. Messrs. D. G. Robertson, Ltd., are the contractors. This is one of the first large contracts given out by the F. M. S. Government since the commencement of the war.

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**Shanghai Tramways Receipts.** — The following is the traffic return of the Shanghai Tramways for August, 1916, and for eight months ended August 31, 1916, with figures for the corresponding periods last year:—

| | August, 1916 | August, 1915 |
|---|---|---|
| Gross Receipts... | Mex. $129,803 | Mex. $113,851 |
| Loss by currency depreciation ... | 34,425 | 31,084 |
| Effective Receipts | 95,378 | 82,766 |
| Percentage of loss by currency depreciation ............... | 27.99 | 28.87 |
| Car miles run ... | 330,194 | 295,376 |
| Passengers carried ............... | 5,901,451 | 5,165,526 |
| | 8 months 1916 | 8 months 1915 |
| Gross Receipts... | 985,047 | 859,838 |
| Loss by currency depreciation ... | 259,727 | 230,572 |
| Effective Receipts | 725,320 | 629,266 |
| Percentage of loss by currency depreciation ............... | 27.99 | 28.55 |
| Car miles run ... | 2,442,921 | 2,200,895 |
| Passengers carried ............... | 43,852,997 | 37,879,492 |

**Siam Railway Traffic Receipts.**—For June the broad gauge lines' receipts were as follows:—

| | Approximate Year 2459 | Actual Year 2458. |
|---|---|---|
| Passengers | Ticals 177,000 | Ticals 174,959 |
| Goods | 196,000 | 179,207 |
| Others | 10,470 | 10,369 |
| Total | Ticals 383,470 | Ticals 364,535 |

The Total from April to June 1916 was Ticals 1,323,275 as against Ticals 1,335,844 for 1915.

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**Higher Tram Fares in Tokyo.**—A month has passed since the Tokyo Municipal Tram Service increased its fares. This increase of fares by one sen has resulted in an increase of revenue but a decrease in the number of passengers during July, as compared with the corresponding month last year. Following is a table showing the receipts for every 10 days of the month compared with those of last year:

| | 1915 Yen | 1916 Yen |
|---|---|---|
| 1—10 July ..................... | 251,378 | 235,960 |
| 11—20 July ..................... | 260,544 | 266,887 |
| 21—31 July ..................... | 234,282 | 244,727 |
| Total ..................... | 746,404 | 750,575 |

The average daily receipts in July this year were 24,287 yen and 24,087 yen a day in July last year.

The Municipal Electric Bureau estimated its July receipts at 669,272 yen, and the actual receipts were in excess of the estimate by 51,303 yen. The number of passengers, however, has shown a great decrease, as may be seen from the following comparative table:

| | 1915 | 1916 |
|---|---|---|
| 1—10 July.................. | 7,373,793 | 5,644,016 |
| 11—20 July.................. | 7,616,950 | 6,160,010 |
| 21—31 July.................. | 7,026,449 | 5,654,196 |
| Total.................. | 22,017,192 | 17,458,222 |

The daily average was 563,169 passengers in July this year, while there were 710,232 passengers a day in July last year. The real effect of the change upon the traffic cannot be ascertained for a few months later, because the old tickets are yet in use, and will be valid till the end of August. It is reported that in July about 28 per cent of the tickets punched were old ones.

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**Veto Tram Line to Osaka.**—The Japanese Government has rejected the application filed by Mr. Yujiro Tachikawa and other business men for the construction of a high speed electric railway between Osaka and Tokyo on the ground that its completion would affect the revenue of the Tokaido Main Line of the State Railways.

## ROADS

**New Highway in Peking.**—A Washington report says that Dr. Reinsch has advised the Department of State that an American company is the pioneer in North China in building a road for the operation of a motor-truck and passenger-motor line from Peking to the Summer Palace. Dr. Reinsch's report says:

"Under the terms of an agreement for road construction just consummated with the Governor of Peking and in return for furnishing a loan of $100,000 Mexican an American company has been granted an exclusive franchise for 20 years to operate motor freight and passenger services upon the road to be constructed. The highway will extend from the City of Peking to the Western Hills (Summer Palace) by way of the Marco Polo Bridge, and it is expected that its construction, by making the Hills directly and readily accessible to Peking, will lead to the development of suburban residence areas in that region. It is understood that the building of this highway is only the first step in an extensive plan of public road construction in Chihli Province."

## SHIPPING

**Tsingtau to be Open Port.**—The port of Tsingtau, which now is under the Japanese Military Administration, has been open to Japanese and British merchantmen only, but now that things have been quite restored to normal at that port and trade with Japanese and China coast ports has been markedly enlivened, it has occurred to the authorities concerned that it will aid the development of the trade to open the port again to the world's merchantmen, excepting, of course, German and Austrian vessels. A stout protest has been raised by a Japanese steamship company interested in the Dalny-Tsingtau service and also by some merchants at the two ports on the ground that the foothold of Japanese shipping and trade established there might be prematurely weakened. The Tokio Government has recently given instructions to the Tsingtau Garrison to investigate the actual conditions prevailing, and the matter is expected to be discussed at a Cabinet council in the near future. The entry of the Russian Volunteer Fleet steamer into Tsingtau has been allowed under special conditions, and Japanese vessels under foreign charter, the China Merchants S. N. Co.'s steamers, the Standard Oil Co.'s tank steamers, etc., also use the port.

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**Minnesota Reported Sold.**—A cable from America, reporting the sale of the Minnesota, former Great Northern liner, has been received by the Osaka Shosen Kaisha in Tokyo. The cable stated that a British company had purchased the ship for $3,000,000. While in service, the Minnesota was the largest ship carrying the American flag on the Pacific, having a tonnage of 32,000. The new British owners will put the vessel in service on the Atlantic, carrying coal from New York to England. The Toyo Kisen Kaisha was negotiating some time ago for the purchase of the Minnesota, but the deal failed on account of the price asked.

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**Japanese Ships Abroad.**—According to the investigations by the department of communications, Japanese steamers in foreign waters at the end of August were 308 in number (817,641 tons), of which 99 vessels (233,889 tons) were under direct control by owners, and 209 vessels (583,792 tons) were under charter by others, including 46 vessels (152,863 tons) under foreign charter.

The South Manchuria Products Co., Dairen, maintained by Messrs. Suzuki & Co., of Kobe, placed orders some time ago for three cargo vessels of 12,000 tons d.w. with the Mitsubishi Shipbuilding Yard, Nagasaki. With the prospective completion of one of the vessels ordered from the Mitsubishi, Nagasaki, Messrs. Suzuki & Co. have decided to establish an independent shipping company capitalized at 2,000,000 yen under the style of Teikoku Kisen Kaisha (Imperial Steamship Co.)

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**New Trans-Pacific Line Opened.**—A steamship service between Seattle, Kobe, and Vladivostok, which has recently been opened by a Japanese steamship company, the Shosho Yoko, commonly known to the Chinese and foreigners as the Sung Chang Company, having its head office in Tokyo and a branch

at Dairen, Mr. T. Yamamoto, a millionaire shipowner, proprietor. It has had an auspicious start. The Company has already dispatched the s.s. Yesan Maru, 4,600 tons, and the s.s. Kageshima Maru, 4,566 tons, and has chartered three more vessels specially for this service. On the outward trips the vessels will carry miscellaneous goods from Kobe for Seattle and will bring, as return cargoes, munitions for Vladivostok. From Vladivostok and Dairen they will ship beans, bean oil, etc., direct to Seattle and sometimes to Kobe, subject to transhipment there to Japanese and foreign steamers for the destination.

**Schooner for Island Trade.**—Atkins, Kroll & Co., of San Francisco, who operate a line of sailing vessels in the South Sea Island trade, have added another vessel to their fleet, having purchased the American schooner *Ethel Zane*, of 407 tons net. She will continue on the run to Guam, Manila, Papeete and Samoa. She was built at Eureka in 1891 and is 165 ft. long with a beam of 36.5ft.

**Propose Siam-Manila Line.**—Steps have been under way for some months looking toward the establishment of a direct shipping line between Bangkok and Manila, according to an announcement by Executive Secretary De Veyra. Both the Siamese and the Philippine insular governments are doing everything in their power to carry out the project. According to Mr. De Veyra the commercial relations between these two ports have considerably strengthened but owing to lack of tonnage merchants in both places have become more or less discouraged. As soon as the amount of cargo the local merchants would be able to furnish each month has been learned Bangkok will be notified and the plans for direct shipment brought to a conclusion as quickly as possible.

**Strike Costly for Japanese Co.'s**—The 50 days longshoremen's strike on the western coast of the United States which terminated on July 23, was a costly affair for three Japanese shipping Companies. According to investigations by the authorities concerned, the loss sustained by the Nippon Yusen Kaisha amounted to Y.252,000, including port dues, tonnage dues, and other incidental charges, making an average of Y 5,500 per diem. Adding to the above the losses sustained by the San Francisco liners, the O.S.K Tacoma liners and tramp steamers belonging to various companies, the total will reach a considerable figure. The N.Y.K. liners *Inaba Maru* and *Tatsuno Maru* which were to have sailed from Seattle on July 6, for their return trip to the Far East, were held up at Seattle on account of the strike.

**New Dock for Chemulpo.**—A scheme is on foot among Japanese capitalists to establish a dockyard company at Chemulpo. The prospectus of the projected company has just been made public. The promoters comprise Chemulpo, Seoul and Wonsan businessmen. The capital of the company will be 150,000 yen. The company will undertake building and repair of ships, construction and sale of machinery, and various other works.

**Extend Hikoshima Dockyard.**—The Mitsubishi Company has decided to enlarge its dockyard on Hikoshima, Shimonoseki Straits. Application has been made to the Government for permission to reclaim 25,000 tsubo of land. The company plans a wharf for the accommodation of large steamers. At present the docking capacity of the dockyard is limited to 4,000-ton vessels and the improvements contemplated will permit the repair of much larger ships.

**Spanish Mail Still to Run.**—Contrary to the general impression in Manila shipping circles to the effect that Compañia Trasatlantica steamers on the Philippine run would be discontinued, Captain Jose Sabater of the Legaspi brought news that not only will all the four vessels now remaining with the company continue to ply between Spain and the Philippines, but one new 11,000 ton steamer of the most modern type now being built at Cadiz will also be added to the number. The revocation of the decision of withdrawal, however, according to Captain Sabater was only due to the efforts of the Marquis of Comillas, president of the company, who strenuously opposed it for patriotic reasons and the clamors of the Spanish press against the abandonment.

**China Mail buys Nile.**—The China Mail Steamship Co., the Chinese-owned American line of one ship, the *China*, has bought the s.s. *Nile*, of the Pacific Mail. The *Nile* is on the British registry and was requisitioned by the Government during the early stage of the War. It is larger than the *China* by 800 tons and has accommodation for 140 first, 50 second, and 400 steerage passengers.

**M. B. K. to Start New Line.**—Availing itself of the great strides made in Japan's trade with Australia and India since the war, the shipping department of the Mitsui Bussan Kaisha is now contemplating the inauguration of a regular monthly steamship service to Australia and India. The new service probably will begin early next month, according to the manager of the shipping department.

**T. K. K. to Build, not Buy.**—Report of arrangements made by the Toyo Kisen Kaisha, for the purchase of two steamers, each to cost 2,600,000 yen, was vigorously denied by Mr. R. Asano, director of the T.K.K. He said the report was groundless. Mr. Asano added that the T.K.K. was badly in need of more steamers, but rather than buy them, he said, the Company would wait and build them at the new dockyard which is planned by Mr. S. Asano, his father, and president of the Company. The latter is pushing the plans for the establishment of the new shipbuilding yard, to be built at a cost of 5,000,000 yen.

**Japan-New Zealand Line.**—The first ship on the Nippon Yusen Kaisha's Japan-New Zealand line, the Akita Maru, commanded by Captain U. Tanaka, has left Yokohama for Wellington. The decision of the N.Y.K. to open a steamship line to Wellington was reached after repeated applications had been made by Japanese merchants.

The Akita Maru sailed direct for Sydney, which she expected to reach in about twenty days. Included in her cargo was an exceptionally heavy consignment of Japanese toys of various kinds which will be the Christmas presents of many children in New Zealand. Before the war, New Zealand was almost entirely dependent upon Germany for toys.

Having been built at the Mitsubishi Dockyard and Engine Works at Nagasaki in March of this year, the Akita Maru is a new ship. She was originally designed for domestic freight services. The Akita Maru will call at Sydney, Melbourne and some other Australian ports.

**Philippine Coaster Sold.**—The Philippine inter-island steamer Nuertra Señora de la Pez, owned by Miguel Ossorio of Manila, has been sold to a Norwegian Shipping firm for 280,000 pesos, delivery to be made to the new owners in October. All details of the transaction have been closed, it is stated, and all that is necessary to complete the deal is the formal authority of the board of public utilities commissioners for the sale. This authority, it is expected, will be granted as a matter of course, to judge from the action taken regarding similar petitions in the past.

**Build Yacht for King of Siam.**—The Kawasiki Shipbuilding Yard has contracted with a representative of the Siamese Government to build a yacht for the Imperial Household. The engine used will be that of an old Siamese cruiser, brought to Kobe recently.

**Titan to Leave Pacific.**—The Blue Funnel steamer Titan, one of the big ships on the trans-Pacific services of that line, after many years of service between Hongkong and Seattle, has been withdrawn from her present run, and will be operated between China, Japan and the United Kingdom. The Titan will be replaced in the trans-Pacific trade by the steamer Protesilaus, of the same fleet, which has been plying between the United Kingdom and the Orient since it was withdrawn from the Seattle-Hongkong route about sixteen months ago. The Protesilaus sailed from Yokohama recently.

**Five More Japan Lines.**—For some time past the Osaka Chamber of Commerce has been engaged in drafting a scheme for new steamship services in Chinese and South Sea waters, and also to Africa and America. The Chamber recently memorialised the Government on the advisability of opening five new steamship services. It is proposed to open a service along the China Coast with Shanghai as starting-point, and another to the South Sea Islands with Singapore as the central base. A third line is to start at Singapore to Saigon and Bangkok; a fourth between Singapore and Sydney, Melbourne, Adelaide, and Java; and the fifth from Singapore via the Cape of Good Hope, to the eastern coast of South America, New York and Panama.

**U.S. Busy Building Ships.**—A continued expansion of shipbuilding in American yards is shown by builders' returns to the Bureau of Navigation, which record the number of steel merchant vessels building or under contract to be built in private plants of the United States on June 1 as 372, with a total aggregate gross tonnage of 1,147,534. This compares with 368 vessels of 1,129,014 gross tons on May 1, and is the highest total reported since the war demand began. The number of vessels completed during May was the largest recently reported, thirteen, as against six in April, five in March and six in February.

**Java Line Expanding.**—The Java-China-Japan Line, which maintains many services chiefly in Oriental waters and also a trans-Pacific monthly service, has just increased its capital to 15,000,000 Florins, as a preliminary to buying more vessels for service in the South Seas and China waters.

**Yone Maru Sold for £350,000.**—The sale of a Japanese steamer to a British firm has set a new record. The Yone Maru, 7,300 tons, which was recently launched at the Mitsubishi dock, Nagasaki, was sold by Mr. Sudzuki to a British firm Wednesday for £350,000. While this may be a record for new ships, no end is yet apparent to the rise in values, for second hand boats now fetch prices that would have been considered extravagant for new vessels a couple of years ago. Even very old craft command more than their original cost.

Twelve months ago steamers were being sold at an average rate of £7 12s. per ton, but latterly sales have been on the basis of £20 12s. per ton—a jump of 171 per cent. Prices have ranged up to nearly £40 per ton for-two-year old ships, and even vessels 30

years old have fetched £27 per tons. The profits made on sales are so large that many of the boats have changed hands several times during the past couple of years.

Thus, one ten-year old steamer which was sold for £26,200 in 1914, was disposed of for £100,000 last year, and has lately been knocked down again for £140,000. Another vessel—20 years of age—fetched £36,500 last August, £78,000 last January, and has now realised £101,000. A third ship, built in 1891, which was priced at only £7,800 in 1912, sold for £21,000 last year, and yet again for £62,000 quite recently.

Four other craft, the youngest ten years of age, which together were disposed of for £177,000 in 1915, have recently fetched £355,500. Two other examples may be given. One twenty-seven-year old boat, which was sold for £45,000 in 1913, has just been disposed of for £100,000, and one eighteen-year-old craft, which realised £20,000 in 1914, has now changed hands for £155,000.

The above representative sales relate only to steamers, but sailing ships can supply equally astounding illustrations of the phenomenal rise in values. In 1915 the average rate per ton realised was about £4 11s., but this year the mean has been around £9 9s., an increase of 107 per cent. Twenty year-old ships and over have commanded £13 per ton, whilst even craft built in the seventies have fetched from £4 to £6 per ton.

**Japanese Shipping Losses.**—The number of Japanese steamers which have fallen victims to German submarine raids together with such others as are supposed to have been torpedoed by enemy submarines, since the first victim *Yasukuni Maru* was sunk last November up to August 10th, on which date the s.s. *Tenmei Maru* was torpedoed, totalled 8 with aggregate gross tonnage of 39,048, including 4 registered in the Kwantung Leased Territory. The ships destroyed were:

| | Tons | Owners |
|---|---|---|
| Yasukuni... ... ... | 5,118 | Suzuki & Co. |
| Yasaka ... ... ... | 12,000 | N. Y. K. |
| Kenkoku ... ... | 2,376 | Mr. Hashimoto |
| Taietsu ... ... ... | 3,091 | Yamashita S. S. Co. |
| Kohina ... ... ... | 3,040 | Murai S. S. Co. |
| Tenmei ... ... ... | 3,300 | Hakuyo S. S. Co. |
| Hokoku ... ... ... | 4,723 | Suzuki & Co. |
| Senju ... ... ... | 4,340 | Tatsuma & Co. |

It may be mentioned that the last mentioned two steamers are still missing, the former while on her way to Europe and the latter in the Mediterranean, and that general supposition prevails that both were torpedoed by enemy submarines, all the crew on board sharing their fate.

The amount of loss to the insurance companies, Japanese and foreign, with which the eight vessels were insured, is estimated roughly at Y10,000,000.

**Wreck of the Chiyo Maru.**—The work of taking into pieces the wreck of the s.s. *Chiyo Maru* stranded off Hongkong is progressing at a fair pace. Already the whole of the machinery has been removed. The second sale by auction of the iron material thus recovered will be held shortly.

**T.K.K. Pays 15 per cent.**—The Toyo Kisen Kaisha held the meeting of its directors on September 5 at 2 p.m at its Tokyo branch office building to confer about the business results during the first half of this year. It has been decided that ordinary dividends shall be 12 per cent with the special at 3 per cent, making the total of 15 per cent. The distribution of profit follows:

| | Yen |
|---|---|
| Profit ... ... ... ... ... ... | 2,736,000 |
| Carried from the previous term | 83,000 |
| Total ... ... ... ... ... ... | 2,819,000 |

Which will be divided as under:

| | Yen |
|---|---|
| Official reserve ... ... ... ... | 140,000 |
| Ordinary dividend (at 12 per cent.) ... ... ... ... ... | 666,000 |
| Special dividends (at 3 per cent.) ... ... ... ... ... ... | 166,000 |
| Dividend equalization fund ... | 700,000 |
| Special cancellation fund of the cost of steamers ... ... ... | 1,000,000 |
| Pension fund of employees ... | 70,000 |
| Carried to next term ... ... ... | 76,000 |

Profit is obtained by deducting from gross profit such expenses as various taxes, working expenses, cancellation fund of steamers' cost for 450,000 yen, repairing fund for 100,000 yen and steamer readjustment fund for 370,000 yen.

What is called steamer readjustment is the fund allotted for the adjustment of cancellation account of steamers' cost, which were outstanding on account of the depression of freight market some years ago, and, since the year before last, this new item was created. In the last term 600,000 yen was used for the same purpose while, during this term, the remaining 370,000 yen will be cancelled. The gap in the finance of the above company will be made good by the above means, which is a matter of congratulation for the company.

Special cancellation means the cancellation of steamers' cost beyond limit stipulated in the company's association. In fact, cancellation makes the basis of business stronger. Hence such steps as above. Profit during this term increased to 2,730,000 yen, whereas it was no more than 1,190,000 yen in the last term.

The gross receipts of the company during this term are said to have been about 7,300,000 yen, or 1,000,000 yen more than in the preceding term. The chief cause of this increase in revenue is that the company's San Francisco liners were filled to capacity with cargo, both in outward and homeward trips. The shortage of space caused by the withdrawal of the Pacific Mail liners also helped the T. K. K. business. Another factor that contributed to the increase of income was that the present tariff rate for the San Francisco service is 20 per cent higher, while that for the South American service has been nearly doubled.

**New Oriental Steamship Company.**—San Francisco advices state that articles of incorporation have been filed there by the San Francisco-Hongkong Steamship Company. It has a capital of $1,000,000 and purposes to construct motor ships to operate on the Pacific.

**Sabang Shipping at Standstill.**—According to the annual report of the Sabang Harbour and Coaling Station Company shipping was practically at a standstill during the whole year. The Dutch lines, however, continued to call uninterruptedly at the port in the ordinary way. In the last part of the year shipping traffic experienced the favourable influence of the closing of the Panama Canal. The special traffic that has, in consequence of the war, developed between the East Coast of North America and Vladivostok, and which found its way through the Panama Canal, was thereby compelled to follow the eastern route, which has resulted in an increase of the shipping at Sabang.

**P. I. Shipowners Fight Free Mail Law.**—Whether the Philippine board of public utilities acted in accordance with law in ordering Inchausti and company and other shipowners to continue carrying Philippine mail to ports touched by their vessels in the Philippine islands free of charge, or whether the utility board exceeded its authority in the matter, has been threshed out in the Philippine supreme court on a petition filed by Inchausti and Company.

In support of their stand the petitioners urge that "the performance of the mail service so required involves the rendition of services which are arduous, extensive, and costly at the expense of your petitioners; that the performance of said service by the petitioners subjects the latter to repeated and grave annoyances, trouble and expense, and greatly hinders, hampers, and interferes with the prompt dispatch of the vessels of the petitioners, and causes to said petitioners, grave loss and injury; that section 309 of act 2657 and customs administrative circular No. 627 afforded no authority for the exaction of said services without compensation in that the same were, and are invalid, as being unjust and unreasonable and confiscatory, a deprivation of private property without due process of law, a denial of the equal protection of law, taking of private property for public use without due compensation, all contrary to and in violation of the constitution of the United States and its amendments, and to the act of congress of July 1, 1902."

## FINANCE

**Mukden Currency Question.**—The Chinese banks in Fengtien, Mukden Province, are withdrawing from circulation their bank notes as a preliminary to the adoption of the new large dollar standard in lieu of the small silver coin standard. The notes said destroyed by the Three Eastern Provincial Banks, the Heilungkiang Provincial Bank, the Industrial Bank, the Frontier Development Bank, etc., amount to S.Y12,000,000, and according to the latest rates, the difference between silver and notes has been narrowed down to about S.Y2 per S.Y100.

The whole of the Chosen Bank loan amounting to Y2,000,000 has been delivered to the Mukden Government, and an arrangement has been made amongst the Chinese banks, to seal the packets of bank notes redeemed by each Bank in the presence of the representatives of the four other Banks. The Bank authorities hope that the redemption work will be completed in two more months, and the proposed adoption of the large dollar standard as ordered by Mil.-Commander Chang-tso-lin will then go into effect.

**Shansi Bankers Combine.**—A new bank under the name of Chung-hua Yinghong has been organized in Peking. The capitalists of the bank are chiefly native bankers from Shansi and its object is to introduce modern banking methods into the famous Shansi banks or remitting houses in Peking and the Provinces. The capital of this new bank is said to be $10,000,000 most of which was subscribed by Shansi remitting houses in the Capital.

**Four Millions Salt Revenue Paid.**—Owing to the handing over of the sum of $4,000,000 by the Five Power Group Bankers to the Chinese Government on Sept. 7 the various official organs, the troops and policemen in Peking have been paid half in cash and half in notes of the Bank of China and the Bank of Communications, for August, after the payment of the coupons of the Peking-Hankow and Tientsin-Pukow Railways. The Chinese members of Parliament were paid in cash at the rate of $400 monthly per member because most of them refused to receive bank notes. Mr. Strauch of the Salt Inspectorate has returned from Szechuan and other Provinces and Sir R. Dane will pay a visit to Inner Mongolia and other salt-producing and consuming districts in North China shortly. In spite of the European War and the internal strifes in China, the incomes from salt revenue have been very satisfactory for the last two or three months.

**The Abolition of the Likin.**—Mr. Sun Pao-chi, Director-General of the Customs

Directorate, has had an audience with the President concerning the proposed abolition of the Likin inter-Province Customs dues in lieu of the increase of the Maritime Customs duties. According to the opinion of Mr. Sun, the total receipt of Likin is from 70,000,000 to 80,000,000 dollars per annum and in view of the perplexing condition in the collection of the Likin taxes in the various Provinces, the abolition cannot be carried out without proper preparation by foreign and Chinese experts.

**China's Provincial Taxes.**—The Ministry of Finance has apportioned the amount of monthly remittances to the Central Government required from the different provinces as follows:—Kiangsu, Chekiang, Hupeh, Chihli and Honan each shall contribute a monthly remittance of $300,000 to the Central Government; Kiangsi, Hunan and five others will be responsible for $250,000 per month, while the amount expected from the "indigent" provinces is to vary from $150,000 to $100,000.

**China's Administrative Expenditure.**—After serious reduction of administrative expenditure of the Central Government, it now requires $3,500,000 per month. An amount of $1,300,000 is required for various organs; $1,500,000 for troops under direct control of the Central Government, and $700,000 for Police and Imperial House Expenditure. As no remittances have been received from the provinces, the Central Government has found great difficulty in bridging over the present financial trouble.

**Japan Takes 70 Million Yen Russian Bonds.**—The protracted negotiations which have been in progress between the Russian and Japanese Governments for an issue of Russian bonds have been satisfactorily concluded and The Japan Advertiser states on reliable authority that the amount of the issue is seventy million yen in Russian treasury bonds for one year. The bonds will bear interest at the rate of six per cent and the participating banks will receive a commission of one and a half per cent.

The issue is necessary in order to liquidate Russia's large payments to Japan for Government supplies of one kind and another. The last issue of Russian treasury bonds in Japan was made in February of this year when fifty million yen were issued at six per cent, this rate including the bankers' commission of one per cent. The bonds on that occasion were issued to the public at five per cent and the response was naturally small. The money market is now in an easier condition and as the terms offered are more attractive there is every reason to expect that the bonds will be found acceptable by the investing public. It is understood that the Japanese Government are considering the advisability of issuing a local loan at an early date in order to absorb some of the surplus money which is now available. The present remarkable prosperity of the country makes it practically certain that both of these issues will be readily absorbed.

Despite the general prosperity reported from Japan, the financial situation of the government will be little better than in pre-war years. The *Japan Times* states that the authorities in the Finance Department have just declared that the Budget estimates of the individual Departments now under examination may undergo some fluctuations, but there still may be, after all retrenchment, an increase of 60,000,000 yen in new appropriations. Moreover, they say again, the reserve appropriations for the year 1917-18 must be increased by 3,000,000 to 5,000,000 yen because the shortage of the usual appropriations has been felt very keenly so far. This year, for instance, all the appropriations are expended and the Government will be forced to ask for some additional credit in the Winter session of the Imperial Diet. In this connection it is learned that there is a grave difficulty in the way of the Government in adjusting the increased appropriations to the limited resources available and but for the restriction of some important items in the draft estimates, it cannot be easily overcome.

Though in the statement of the financial authorities the increase in new demands is estimated at 60,000,000 yen that figure is only the minimum after all reductions legally necessitated are made from the total, and if the Navy Bill be maintained it will surely be more than the estimated 60,000,000 yen or less.

The new resources at the disposal of the Government are estimated at 44,950,000 yen. As temporary revenue, it is given out, the Government will have 1,000,000 yen as carried over from last term, 15,500,000 yen from the sale of three warships to Russia, 1,350,000 yen from the sale of the Paper Mill at Oji, 6,000,000 yen as returned by the Teikoku Sanshi Kaisha as net profit, 5,000,000 yen saved in the course of this fiscal year, and sums either received in excess over estimates or left unemployed during the present fiscal year. Especially, the last two items are apparently expected by the authorities to be very big—10,000,000 yen and 2,000,000 yen respectively.

Besides, the Government is inclined to estimate the natural increment in revenue at 7,000,000 yen to 8,000,000 yen for the year 1917-18, which is the only permanent new source of increased revenue for the Government. The reserve set aside by the Government against the war-influenced shortage in revenue for the present fiscal year at nearly 11,000,000 yen also will be employed as a resource available for the year 1917-18.

Thus the total increment in the Government resources available for the year 1917-18 will come to 44,950,000 yen, but that sum cannot be set aside for the year in its entirety, because the Government has no other funds to draw on for the maintenance of war activities for the year 1917-18, the supplementary appropriations for the present fiscal year, and the excess in expenditure over estimates for the present year. Accordingly, the new appropriations for the year 1917-18 must either be reduced by more than 20,000,000 yen or be defrayed out of some receipts other than the ordinary and extraordinary items in the revenue Budget.

The increase in the Government's revenues for the next fiscal year will reach 10,000,000 yen according to Mr. Ichiki, Director of Account Bureau in the Finance Office. The figures, however, do not include probable increase in revenue from taxes of direct kind and profit from industries under the Government's management.

**Korean Revenue 59 Millions.**—The estimates of the Government-General of Chosen (Korea) for the next fiscal year are expected to be submitted to the Department of Finance by the end of this month. The revenue is likely to be put in the neighbourhood of Y59,000,000.

**401,700,000 yen Invested by Japan.**—According to Government estimates, 401,710,000 yen has been invested in Japan since the outbreak of the war. Of this amount 117,470,000 yen was devoted to the establishment of new companies, 213,190,000 yen for the increase of capital and the extension of manufactories and 71,030,000 was applied to debentures and loan accounts.

Eighty per cent of the total amount—301,480,000 yen—was invested in such industries as spinning, chemical work, mining, brick manufacturing, shipping and shipbuilding and other lines boomed by the war. Railway and electric works commanded 52,510,000 yen, while money used for banking and insurance is put at 47,700,000 yen.

There have been few new undertakings, but great extensions were made in existing enterprises. Industries on a small scale, undertaken by private individuals, have sprung up in various parts of the country. A feature of the new war trade is the number of dyestuffs factories which have been started.

**Power Co. Borrows 6,000,000 Yen.**—A loan of 6,000,000 yen has been concluded between the Kinugawa Water Power Company and a syndicate of Osaka bankers at 7 per cent interest. The loan will remain un-redeemed for three years and then be redeemed in seven years.

**Singapore Branch for Yokohama Bank.**—The Yokohama Specie Bank has decided to establish a branch office at Singapore owing to the tremendous increase of Japanese trade in the Peninsula. Mr. Otsuka, former sub-manager of the branch office at Shanghai, was appointed manager and the new office was opened Tuesday, Sept. 5.

**May Send Japanese Bonds to America.**—In view of a recent London telegram that the British Government has decided to borrow Japanese Government bonds from the public for a period of five years, a financial authority in Tokyo explains that of all the Japanese Government bonds of British issue the first and second 4½ per cents, the second four per cents and the five per cents can be "mobilized" to be sent to the United States as collateral for the British loan in the United States. The interest on these bonds is payable also in New York, and they can be regarded for financial purposes as a part of the foreign securities which the British Government started mobilizing at the end of last year.

The method for the mobilization of the Japanese securities is not mentioned in detail in the London telegram referred to, but it is probable that the method adopted for the mobilization of the American securities, that is, the Government either purchases the securities, or borrows them, will be applied in this case. The Japanese Government bonds of British issue now available for mobilization are as follows:

| | Yen |
|---|---|
| First 4½ per cents ... ... | 259,000,000 |
| Second ,, ... ... | 260,000,000 |
| Four ,, ... ... | 244,000,000 |
| Five ,, ... ... | 224,000,000 |
| Total .. ... ... ... | 987,000,000 |

**Bank of Taiwan Holds Term Meeting.**—The Bank of Taiwan held a general meeting of shareholders at its Tokyo branch office building, on Sept. 1, when the undermentioned distribution of profits was submitted for approval. Mr. M. Tatsuno, whose term has expired, was re-elected Auditor.

| | Yen |
|---|---|
| Gross profits during this term ... | 7,804,659.13 |
| Gross loss ... ... ... ... ... ... | 6,928,091.66 |
| Net profits... ... ... ... ... | 876,567.47 |
| Carried from the previous term... | 255,771.29 |
| Total profits ... ... ... ... | 1,132,339.76 |

The profit was distributed as under:

| | |
|---|---|
| Loss covering fund... ... ... ... | 150,000.00 |
| Averaging fund of dividends ... | 30,000.10 |
| Special reserve ... ... ... ... ... | 20,000.00 |
| Bonuses ... ... ... ... ... ... | 45,000.00 |
| Dividends ... ... ... ... ... ... | 625,000.00 |
| Carried to next term ... ... ... | 262,339.76 |

**Bank of Japan Statement.**—The Bank of Japan held its sixty-eighth general meeting of shareholders in August. Below are given the accounts of the bank during the first half of this year:

The profits during the first half of this year were 4,676,644 yen, showing an increase of 27,642 yen as compared with the preceding term. Particulars are as follows:

| | 1st half of 1916 Yen | 2nd half of 1916 Yen |
|---|---|---|
| Profit ... ... ... ... ... | 4,676,644 | 4,649,001 |
| Regular instalment fund.. | 1,125,000 | 1,125,000 |
| Reserve fund ... ... ... | 50,000 | 50,000 |
| Reserve fund for property | 10,000 | 10.000 |
| Bonuses for officers and entertainments ... ... | 182,000 | 161,099 |
| Second instalment fund... | 1,125,000 | 1,125,000 |
| Carried forward to next term ... ... ... ... ... | 1,734,644 | 1,728,000 |

The reserve fund at the end of this term is 30,390,000 yen, in addition to reserve for property amounting to 345,000 yen, making a total of 30,735,000 yen.

The balance of convertible notes during the term was 429,330,674 yen a decrease of 807,336 yen as compared with the previous term.

There was an enormous increase in the Government's deposits, which now stand at 226,467,726 yen, besides railway deposits of 15,936,258 yen at the end of the term.

The national loan interest account amounted to 58,481,846 yen during the previous term, but at the end of this term, it had decreased to 22,197,743 yen. The actual amount of the national account at the end of the term was 53,292,448 yen, which is an increase of 9.340,-000 yen principally due to railway debentures issued.

The note and discounts accounts at the end of the last term were 34,93,700 yen, which decreased to 15,345,000 yen during this term. Money kept in foreign countries at the end of this term was 323,019,001 yen, which is an increase of 56,000 yen. The specie account carried over to this term was 161.896,076 yen, which had increased to 174,263,236 yen by the end of this term.

In the loss and gain account the net profits, not including the amount carried over from the previous term, were 2,948,042 yen, the greater part of which was kept in the head office

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**20,000,000 Pesos for Philippine Islands.** —The bonded indebtedness of the Insular Government is P10,000,000 at the present time, according to Acting Insular Auditor I. B. Dexter, and with the passage of the Jones Bill there will be an additional amount of P20,000-000 available for bond issues. The conclusion was reached by the auditor after reading the Bil which provides that the bonded indebtedness shall not exceed P30,000,000. The present bond issue of P10,000,000 comes under the classification of "Public works and permanent improvements" and it is believed by high officials that this will be included in the allowance made by the bill.

The amount that will be left available can be used up with little trouble, according to general belief. The first issue that will be floated, it is believed, will be for the purchase of the Manila Railroad, for which an amount slightly exceeding P8,000,000 will be required. Other issues that are contemplated are for sugar and copra centrals, while it is possible that more money will be needed for Insular public works.

The issues on Friar lands are considered aside from those of the Insular Government for general uses, and will not be included in the 30,000,000 pesos allowed for Insular bond issues. The amount covering the Friar Land bonds is P14,000,000. Other bond issues, not connected with the Insular allowance are, the City of Manila water and sewer supply bonds, amounting to P8,000,000 and the City of Cebu flotations amounting to P250,000.

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**P. I. Postal Bank Rate 6 Per Cent.**—The postal savings bank investment board has been authorized by opinion of the attorney general, to discount retirement gratuities granted to officials and employees of the Philippine government under the provisions of the Osmena act. The board has decided to adopt a rate of six per cent on all such discounts.

**Japanese Oppose Bank in Philippines.**—Some time ago a representative was sent to the Philippines by the management of the Yokohama Specie Bank to investigate local business conditions and to make recommendations as to the advisability of establishing a branch office in Manila. The object was to further Japanese trade and to assist Japanese clients in general banking transactions resulting from import and export business. After having collected a fair amount of figures and statistics from different sources, the bank representative solicited the opinion of the leading Japanese merchants. After being informed that the proposed Manila branch of the bank would adhere to the general policy of the head office and thus limit its business to exchange and clearance transactions, the local Japanese were almost unanimous in their advice against the contemplated move, pointing out that local banking facilities were more than sufficient for the purpose.

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**F.M.S. Postal Savings Bank.**—Evidence of prosperity among the labouring classes in the Federated Malay States during the past year is given by the annual report of the Posts and Telegraphs Department. The value of postal orders, money orders and telegraphic money orders issued in 1915 amounted to £578,547 against £569,861 in 1914. This represents largely money sent by Indian and Chinese labourers on the rubber plantations and in the tin mines to their families in India and China. At the end of the year there were 7,558 depositors in the Government Savings Bank with £75,108 to their credit, against 7,143 depositors and £73,403 in 1914.

The number of letters, postcards, packets and parcels posted and delivered was 17,371,-512, an increase of 426,287 on the figures of 1914. During the year 355,360 telegrams were dispatched and 368,684 received, and the number of subscribers to the telephone increased by 44 to 1,117, with a corresponding increase of revenue. On 31st December, there were 2,226 miles of telegraph and telephone line and 9,849 miles of overhead wire in the Federated Malay States, of which 7,298 miles were telephone wires. In addition there were 26¼ miles of underground telephone cables, containing 2,239 miles of wire, single line. These figures do not include the wires maintained by the Railway Department for its own use. The Posts and Telegraphs Department also owns 242 miles of telegraph wire in Johore. There are now 90 Post Offices at which officers of the department are employed, and 38 places where postal business is transacted by station masters and others. The net revenue of the department was £80,676 and the expenditure £102,943. Five of the European members of the staff, on leave, hold commissions in the army.

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**Pasig Asks Loan for Market.**—The municipal president of Pasig, Rizal, Philippines, accompanied by three members of the municipal council of that town, paid an official visit to Manila to urge upon the insular government authorities the expediency of granting a loan of P50,000 to construct a sanitary market at that town.

The executive secretary informed the officials that the government was not in a position to make the loan asked for at this time.

The officials are not inclined to wait, however, and it is understood that an appeal will be made to the Philippine National Bank for a loan. The officials of Pasig state that they will be able to produce ample security for the loan.

## MINES AND METALS

**Zinc Refining in Japan.**—The zinc refining industry in Japan is growing rapidly, such firms as Furukawa and Takata having already taken up zinc refining. Some weeks ago it was announced that a company with a capital of 2,500,000 yen will be formed on the joint stock basis for zinc refining, the promoters of the company including Messrs. K. Otani, K. Ono, and K. Abe of Yokohama and prominent business men in Tokyo, Osaka, and Niigata. Up to 1910, all the zinc that Japan required was imported. The zinc refinery as an industrial enterprise in Japan owes its origin to the founding of the Mitsui Zinc Refinery in Miike, Kyushu, in March, 1910. In the same year the Osaka Zinc Refining Company in Osaka and the Nippon Zinc Electric Refining Company in Isojima, Niigata Prefecture, were started.

The outbreak of the European war stopped the supply of German and Belgian zinc and this has greatly encouraged the industry in Japan. The annual output of the three companies above-mentioned has increased to a total of 20,000 tons, or two-thirds of Japan's requirements. About 10,000 tons are being imported at present. The war has increased the consumption of zinc, and it is roughly estimated that the annual consumption of the world is now 1,200,000 tons, while it was a little over 1,000,000 tons in 1911.

As to Japan's resource in zinc ore, it is said that there are wonderfully rich veins in all parts of Japan, and the resources are considered unlimited. Up to 1910, zinc ore containing less than 40 per cent of zinc was thrown away, and only the finer ore containing above 40 per cent of zinc was exported to Germany or Belgium at about 20 yen a ton. This was because Japanese miners had no knowledge of refining processes.

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**Japan Miners Lack Explosives.**—The shortage of dynamite and other explosives is causing considerable inconvenience to the mining industry and some mines have had to shut down. The manufacture of explosives has been monopolized by the military arsenals and the miners, contractors and gun-powder dealers have had to obtain supplies from the arsenals. In 1906, the military authorities, seeing the increase in the demand for dynamite for use in the mining industry, commenced manufacturing dynamite for this particular purpose. It was arranged that the goods be sold through Mr. Kasuke Shibuya and two others. Those requiring dynamite have had to buy from the three agents. The stock for industrial purposes is so short that the goods which the three agents obtain from the arsenals at 30 yen a case is now quoted in the market at 80 to 90 yen. The effect of the rise in the price is rather insignificant in the case of copper and zinc mining, because these metals have also risen in price, but the effect is bad in the case of gold and silver, which are rather stationary in their prices. Already some gold mines run on a small scale have been temporarily abandoned.

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**Japan Smelter Fume Case.**—An agreement has been arrived at, says the "Nagasaki Press," between the Sumitome family of Osaka, who own the Shisakajima Copper Refinery in Shikoku, and the inhabitants of that neighborhood, whereby compensation is to be guaranteed for the destruction which has been occasioned during the past several years to crops. The agreement stipulates, according to the suggestion of the Governor of Ehime prefecture, that compensation shall be paid by the owners of the refinery at the rate of 100.000 yen per annum, while a special contribution of 250,000 yen is to be made in three yearly instalments commencing this year. The quantity of minerals to be refined is to be limited during the 40 days' critical period of the rice and other cereal crops, operations being entirely suspended during 10 of the 40 days. The agreement is effective for the period from August 24th to 31st December, 1918.

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**Japan Makes Iron Pipe.**—As regards the iron piping wanted in connection with the extension of the Dairen Waterworks, the local

Government authorities have arranged to procure the necessary pig iron from the Government Steel Works at Edamitsu. The manufacture of pipes of the purchased iron has been contracted for by three iron works, at the rate of Y40 a ton, and the pipes are to be delivered by the end of February next year. The pipes will weigh 2,350 tons in all.

**Korean Tungsten Boom.**—During April and May last 1070 applications for permission to work mines in the Korean peninsula were filed with the Government-General. During June, 300 additional applications were received. The number of such applications is, however, gradually decreasing, and from this it seems that some of the people are inclined to judge that enthusiasm for mining in Korea has now subsided. According to a local paper, says the Seoul Press, such a view is evidently a mistaken one. It is true that no such great number of applications as was received during April was received during May and June, but at the same time it must not be overlooked that the applications received during April related to tungsten mines. The high quotation for the mineral maintained during the month induced many unprofessional people to apply for permission to work tungsten mines. Owing to the fall in price of tungsten, the fever has recently subsided among amateur mining men, and applications for permission to work tungsten mines have also decreased quite considerably. This principally accounts for the recent decrease of the number of applications for permission to work mines in Korea. On the other hand, the kind of mining applications has recently varied, showing a great contrast to April, when as mentioned above, applications were almost limited to tungsten mines alone. Permissions for working gold, iron, alluvial gold and other important minerals is of late being sought. This means that the mining industry in Korea is steadily on the way to development. Side by side with this fact, it may also be mentioned that mining men living in Japan have recently become interested in mining in Korea. Many of them have sent experts to the peninsula, with a view to investing.

**Japan's Export of Copper.**—During the first half of this year the shipments of copper from Japan to Russia, England, and other countries amounted in value to 26,242,000 yen, the figures showing an increase of 5,054,000 yen, as compared with the corresponding period of last year.

**Samshui Antimony Plant.**—A plant for manufacturing antimony regulus from ore imported from Kwangsi was erected on Fraser Mill in the port, but no shipments were made before the end of the year.

**Kiungchow Tin Mines.**—The exportation of tin ore from Nodoa, first mentioned in China trade reports of 1909, continues to grow, but as the mine is worked by native methods, progress is naturally slow. The output goes to Singapore. Of the two consignments sent there during the year, the first, which was of good quality and value, realised $54 a picul; the second—of much poorer quality—only realised $36. The total export for the year was 230 piculs, valued at Hk. Tls. 6,217.

**Russia's Iron and Steel Trade.**—According to a statement in the Russian Press, the total quantity of pig iron smelted in Russia in 1915 amounted to 224,970,000 pouds (1,000 pouds=16 tons), as compared with 264,133,000 pouds in 1914. The total quantity of semi-manufactured iron and steel produced amounted to 251,387,000 pouds, as against 294,015,000 pouds in 1914. Of finished iron and steel produced, the total quantity manufactured in 1915 amounted to 199,437,000 pouds, as compared with 240,032,000 pouds in 1914. Owing to the occupation of Russian Poland by the enemy there are no figures for this country for 1915 in respect of pig iron and semi-manufactured products, but 10,000 pouds of finished iron and steel are included in the report for 1915, as against 17,332,000 pouds in 1914.

**Philippine Gold Exports Increase.**—The amount of gold bullion exported from the Philippine islands during the month of July just ended totalled 8,006.32 ounces, valued at P205,936, according to a statement given out at the bureau of customs. The gold exportation was 1,319.32 ounces more than for the corresponding month of 1915, which was 6,687 ounces, with a total value of P191,510. Comparing the two figures in their money value, the Philippine islands last month exported P14,426 more gold than during the same month last year.

While in 1915, only British ships were engaged to transport gold from the islands, last month's record shows that American vessels carried the bulk of the bullion exported, while Japanese steamers rank second in the carrying trade.

**Gold Mining in Philippines.**—The importance of the gold mining industry has steadily increased since the passage in 1902 of the Philippine bill which put in effect a code of mining laws, but the first year in which the production reached any consequence was 1907, when the value of the gold extracted amounted to P187,647. The most rapid increase occurred between the years 1911 and 1912, when the production of gold increased from P379,906 to P1,140,000. During the past three years mining companies declared their incomes as follows:

| Year | No. of companies | Gross Income | Net Income |
|---|---|---|---|
| 1913 | 7 | P1,565,393.58 | P519,400.76 |
| 1914 | 12 | 2,429,571.86 | 883,294.66 |
| 1915 | 14 | 2,612,620.70 | 761,444.50 |

Of the forty-two mining companies listed, which includes companies formed for the removal of iron, copper, oil, asphalt, stone, etc., fifteen were reported as having gross incomes, eight as having net incomes, and the balance as having no income, a number of these latter companies being reported as not active.

The leading gold producing district is Aroroy, on the island of Masbate, where there are three successful quartz mines, the Colorado, Syndicate, and Keystone. The second district in point of production is Paracale in the province of Ambos Camarines. Here the production is at present limited to dredging, although there has been considerable development in quartz mining and it is expected that there will be producing mines in 1917. There are now eight dredges operating in the district.

The Benguet district formerly took the lead in point of gold production, but in 1910 typhoons practically destroyed the operating plants. A new plant recently completed in that district, however, is now adding heavily to the gold production for 1916. The only hydraulicing plant in the islands is on the Cansuran property in the province of Surigao. Large areas of placer ground exist in Mountain, Nueva Ecija, Tayabas and Bulacan provinces, in the island of Mindoro, and along the Agusan and Tubay rivers in Mindanao. A considerable percentage has been tested and is reported to be valuable enough for payable dredging operations.

**Philippines Tax on Mines.**—The internal revenue ad valorem tax of one and one-half per cent on the output of mines, collected for the first time in 1915, amounted during that year to P18,822.66, and during the first six months of 1916 it amounted to P10,671.92. From July 1, 1915, to June 30, 1916, this tax amounted to P25,612.89.

**F.M.S. Tin Exports.**—An official cablegram from Kuala Lumpur gives the advance figures of the export of tin from the Federated Malay States for the month of June as 3,435 tons against 3,729 tons in May last, and 4,048 tons in the corresponding month last year. The total export for the six months of the current year is 21,725 tons, against 23,318 tons in 1915 and 24,902 tons in 1914.

**Tin Mining in Siam.**—At present tin operations in Takuapa are in the hands of the Chinese. The output from the district has for the last few years slightly exceeded 500 tons annually, but it has declined since the commencement of the war owing to the low price the metal has at times commanded. During the year ended 31st March, 1915, 407 tons of metallic tin were recovered while the amount for succeeding nine months was 252 tons. Some years ago a Danish company obtained a concession at Pong, some 500 acres in extent, for mining purposes. A subsidiary company was formed in London to work this area and others at Huey Yawt in Monthon Puket and at Nong Pet near Ronphibun in the adjoining Monthon of Nakon Sritamarat. This company expected its bucket dredge to arrive at the end of April, 1916, but, owing to difficulties of transport between Takuapa and Pong, it will not be possible to commence mining operations before April, 1917. The ground is said to average 1 lb. of tin oxide to the cubic yard.

Pangnga, like Takuapa, is mainly devoted to the production of tin, of which over 800 tons have been recovered during each of the last two years. For the nine months ended 31st December last over 950 tons of metallic tin were produced, a considerable increase thus being shown. Taimuang, some 40 miles from the town of Pangnga, is peopled almost entirely by Chinese, who are engaged in mining operations. The output of tin from the Muang of Pangnga is likely to increase in the future, whilst that from Taimuang is expected to remain stationary for the next three years after which a rapid decline is anticipated. Considerable attention is now being given to the development of the tin-mining industry at Tung Maprow, which is also comprised in the Muang of Pangnga.

**Indo-China's Mineral Output.**—The Bullions Economic del Indo-Chine gives the following summary of mining activity in French Indo-China for the past two years, the metric tonne of 1,000 kilograms or 2,204 pounds being used:

| | 1914 Tonnes | 1915 Tonnes |
|---|---|---|
| Zinc ... ... ... ... | 19,562 | 33,335 |
| Antimony ... ... ... | 883 | 630 |
| Tin and Tungsten ... | 216 | 397 |
| Copper ... ... ... | | 67 |
| Lead ... ... ... ... | 16 | 91 |
| All other ... ... ... | 19 | 15 |
| Total ... ... | 20,696 | 34,535 |

The destination of the mineral products exported in 1915 is as follows:

Zinc to France, 17,903 Tonnes; to U.S.A., 7,825 Tonnes; to Japan 7,602 Tonnes:

Antimony to France, 630 Tonnes; as well as all the tin, tungsten and lead. The copper went to Liverpool.

**The Seoul Mining Company.**—The following results were obtained from the Seoul Mining Company's operations for August, 1916.

| | |
|---|---|
| Tons Crushed .................... | 16,625 tons |
| Value Bullion Recovered ...... | Yen 52,554.00 |
| Value Concentrates Recovered | 239,142.00 |
| Total Receipts (approx.)... | Yen 291,696.00 |
| Operating Expenses (approx.) | 115,000.00 |
| Operating Earnings (approx.) | Yen 176,696.00 |

**Three Coal Seams Discovered.**—There are three seams so far discovered: the main-seam, middle-seam, and north-seam, the main seam being divided into upper and lower leaf.

Mining at present is confined to the main-seam and its approximate section is as follows:

Roof... ... Shale.

Coal ... ...17 feet 6 inches. Upper Leaf.
Clay ... ... 1 foot to 2 feet.
Coal ... ...12 feet to 18 feet. }
Grit ... ... 1 foot to 2½ feet. } Lower Leaf.
Coal ... ... 4 feet to 6 feet. }

Two haulage inclines, designated north and south mines respectively, follow the coal at a grade of 1 in 4½ in the upper leaf of the main seam, and the system of working is pillar and stall, in panels.

In the south mine the present length of the incline is 900 feet, the vertical depth at face 260 feet, and the length of No. 1 level 1,100 feet, while in the north mine the present length of incline is 1,030 feet, and the vertical depth at face 262 feet. The present plant and mine capacity is 800/1000 tons daily, but as already said, the output at present is about 400 tons daily. The coal is at present marketed in three sizes, round, smalls and through coal, and a recent analysis made by Mr. Benedict Kitto, F.I.C., F.C.S., gave:—

| | | |
|---|---|---|
| Moisture... ... ... ... | 14.00 | per cent. |
| Ash ... ... ... ... ... | 2.70 | ,, |
| Fixed Carbon ... ... | 43.00 | ,, |
| Volatile Matter ... ... | 40.30 | ,, |
| | 100.00 | |
| Contains Sulphur... ... | 0.31 | per cent. |
| Calories ... ... ... ... | 6.160 | ,, |
| B.T.U. ... ... ... ... | 11.088 | ,, |
| Evaporative value ... | 11.4 | lb. |

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**Pakhoi Manganese Ore.**—Of good augury at the present juncture are the shipments for the first time in any quantity of maganese ore, the deposits of which are worked by the Yu Ch'in Mining Company, though as yet in a primitive fashion, near Nata, in the Pakiaowan district, and thence shipped to Pakhoi, a distance of some 250 li. The two consignments in February and December, 1915, respectively were shipped to Wakamatsu in Japan and amounted to 3,902 tons in all.

## ARMY AND NAVY

**China's Naval Improvements.**—The Ministry of Marine has submitted a scheme of naval improvement to the Cabinet. It includes three measures:—

(1) To clear away the silting near the Taku entrance for a distance of about six miles with a width of about 200 ft. Estimated cost about $600,000 to be met out of the salt revenue of the Changlu district.

(2) To construct a naval station at Hulutao. Mercantile marine to be forbidden to frequent that island so as to facilitate the work.

(3) To extend naval education by the establishment of a Naval University at Tientsin, high naval colleges at Nanking and Foochow, and middle naval schools at Hsingshan and Yentai (near Ningpo and Chefoo respectively).

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**Japanese Replace French Troops.**—Japanese troops have taken charge of the sections of the Peking-Mukden railway line, formerly guarded by the French troops. Forces of Japanese soldiers are now stationed at the new station at Tientsin and the station at Yangtsun, both of which were formerly guarded by the French.

**Military Expense of Southern China.**—The amount demanded of the Chinese Government as the Military expense of the Hukuo-chun since its first rising at Yunnan has reached about $20,000,000 as follows:—Yunnan, $7,000,000; Chunwuyuan, 3,000,000; Tsai Ao, 3,000,000; Li Li-chun, 2,000,000; Liu Hsien-shi and others, 5,000,000. There is no bill sent from Kwangsi as yet and it is outside the above total.

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**China's Military Expenditure.**—According to a report from authoritative quarters, the military expenditure for the present year is estimated at $136,715,786, exclusive of incidental expenses. The sum is distributed to various military organs and troops as follow:—

(1) $23,847,280 for the Ministry of War and other military organs under the direct control of the Ministry of War. (2) $1,621,309 for the Board of General Staff and organs under its direct control (3) $82,903,220 for upkeep of the troops in the provinces. (4) $13,747,277 for various military organs in the provinces.

The above figures constitute almost one-third of the total expenditure in this year's budget. It may be remarked that the naval expenditure is only one-twentieth of the military expenditure.

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**China's Troops Increased.**—Now that disturbances in China are almost brought to an end, the authorities at Peking are contemplating the readjustment of the whole army. But nearly 200,000 troops having been newly enlisted in consequence of the Yunnan rising, the task proves to be no easy undertaking. For the sake of reference, says the *China Advertiser*, we here give the number of men in uniform whom China had prior to the late Revolution, by the side of the troops now in the service.

| | Before | Now |
|---|---|---|
| In Chihli (including Jehol, Sakhar and Suiyuan) | 82,000 | 152,500 |
| ,, Shantung ... ... ... ... | 15,600 | 27,000 |
| ,, Shansi ... ... ... ... | 14,500 | 28,700 |
| ,, Honan ... ... ... ... | 34,600 | 49,500 |
| ,, Kiangsu ... ... ... ... | 43,500 | 110,600 |
| ,, Kiangsi ... ... ... ... | 20,900 | 18,000 |
| ,, Anhui ... ... ... ... | 21,300 | 31,000 |
| ,, Hunan ... ... ... ... | 19,500 | 62,000 |
| ,, Hupeh ... ... ... ... | 19,300 | 70,000 |
| ,, Chekiang ... ... ... ... | 14,700 | 47,800 |
| ,, Fukien ... ... ... ... | 5,000 | 43,000 |
| ,, Shensi ... ... ... ... | 14,800 | 20,000 |
| ,, Kansu ... ... ... ... | 13,800 | 15,000 |
| ,, Szechuan ... ... ... ... | 17,000 | 64,100 |
| ,, Kwangtung ... ... ... | 38,800 | 150,900 |
| ,, Kwangsi ... ... ... ... | 8,200 | 55,700 |
| ,, Yunnan ... ... ... ... | 21,400 | 34,000 |
| ,, Kweichow ... ... ... ... | 12,100 | 43,000 |
| ,, Fengtien ... ... ... ... | 28,500 | 31,300 |
| ,, Kirin ... ... ... ... | 9,000 | 12,000 |
| ,, Hailungkiang ... ... ... | 16,000 | 18,000 |
| ,, Sinkiang ... ... ... ... | 8,000 | 17,000 |

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**Naval Replenishment Appropriation.**—The Department of Finance has privately decided after an exhaustive consideration to approve of the total appropriation of Y254,000,000 for the naval replenishment programme in consideration of its important bearings upon the national defences.

An earlier report states that Japan will spend 47,000,000 yen for the construction of new warships alone in the next fiscal year, if the plans recently made public by Mr. Taketomi, Minister of Finance, go through. This amount represents an increase of 10,000,000 yen over last year's appropriation, because of the new naval program which is to go into force.

Mr. Taketomi says that the authorities have decided to mention in the budget for the next fiscal year the whole program of warship construction, a portion of which was approved by the Imperial Diet in the last session. Mr. Taketomi does not give the total amount of expenditure called for in the new naval construction program, nor does he tell from what sources the Government will get the money for the new naval program.

Referring to the sinking fund question, the Minister of Finance says that the Government's plan is to cut down its debt by 30,000,000 yen in the next fiscal year, but at the same time the Government is ready to redeem a larger amount if the condition of the market offers a favorable opportunity as in the current year. He says that in this case, the Government will raise a domestic loan for the redemption of foreign debt as this year. He says that the total amount of new appropriations in the next fiscal year will be about 60,000,000 yen.

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**Japanese Cruiser Lost.**—The Japanese armored cruiser Kasagi, which ran aground in the Straits of Tsugaru late in July, has broken in two and all hope that she will be saved is gone. Operations have been commenced to remove all her guns and other equipment. After this is finished her hull will probably be sold. The Kasagi was built in Philadelphia and was launched October 24, 1898. Her displacement was 4,760 tons, and her speed 22.5 knots. She carried two 8 in. guns, ten 4.7 inch guns and twelve 3-inch guns. She was dropped from the active service list five years ago.

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**To Free Grafting Admiral.**—Mitsugoro Fuji, former Rear Admiral of the Navy, who was involved in the famous bribery case known as the Seimens Schukert, will soon be set free from the Tokyo jail, where he has served two-thirds of his sentence. His term was reduced on the occasisn of the Coronation last November. Kazu Matsumoto, former Vice-Admiral, and Kwanmo Sawasaki, former captain of the service, who also were imprisoned in connection with the bribery case, were freed last year.

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**New Japan Dreadnought.**—The Eastern News Agency reports: It is decided that the battleship Ise, which is under construction at the Kawasaki Dockyard at Kobe, will be launched on November 12. She is a sistership of the battleship Fuso and is of 36,000 tons displacement, with a spend of 22 knots. The main armament consists of twelve 14-inch guns, while there are four machine-guns and 32 guns of various calibers, including six-inch guns.

The design is completely of Japanese origin, but improvements have been effected to the armor and other details in accordance with lessons obtained from the European war and also the latest improvements have been made as to the consumption of water in the boilers, the storing of drinking water and the loading of fuel from experience obtained by the Imperial Japanese navy while in the South Seas. Both the *Ise*, 36,000 tons, and her sistership *Hyuga*, now building at the Mitsubishi Dockyard, will be commissioned to duty at the Yokosuka and Sasebo Naval Stations respectively.

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**Japanese Squadrons Maneuver.**—The three squadrons of the Imperial navy finished their year's programs in the first half of September, and then formed a combined fleet for maneuvers to be held in the waters from Kyushu up the Tokio Bay. The maneuvers will last till the early part of October. Admiral Yoshimura, commander of the First Squadron, has been appointed commander-in-chief of the combined fleet.

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- F. Reddaway & Co.

**Asbestos Goods**
- Andersen, Meyer & Co., Ltd.

**Asphalt Block Filler**
- Standard Oil Co.

**Ball and Tube Mills**
- Edgar Allen & Co.

**Automobile Tires**
- Firestone Tire and Rubber Co.

**Banks**
- Bank of China
- Bank of Communications
- Banco Español Filipino
- Chartered Bank
- Deutsch-Asiatische
- Hongkong and Shanghai Banking Corp
- International Banking Corp.
- Yokohama Specie Bank.

**Barbed Wire**
- U. S. Steel Products Co.

**Bearings (Railway Car)**
- Andersen, Meyer & Co., Ltd.
- T. H. Symington Co.

**Bedsteads**
- Simmon Mfg. Co.

**Belting**
- Andersen, Meyer & Co., Ltd.
- F. Reddaway & Co., "Camel Hair," etc.
- Shanghai Machine Co.

**Blasting Powder**
- Andersen, Meyer & Co., Ltd.
- Dupont de Nemours.
- Rendrock Powder Co.

**Bleaching Plants**
- Mather & Platt, Ltd.

**Blowers**
- Andersen, Meyer & Co., Ltd.
- Frank L Strong Machinery Co.
- Matthews and Yates, Ltd.

**Boilers (Internally Fired)**
- S Freeman & Sons, Mfg. Co.

**Boilermakers**
- Babcock & Wilcox, Ltd.
- Shanghai Dock & Engineering Co.
- Taikoo Dock & Engineering Co.

**Boiler Tubes**
- Andersen, Meyer & Co., Ltd.

**Boiler Fittings**
- Andersen, Meyer & Co., Ltd.
- Babcock and Wilcox
- hewan, Tomes and Co.

**Brass and Bronze Tubing**
- Andersen, Meyer & Co., Ltd.
- Broughton Copper Co., Ltd.

**Bridge-Builders**
- Strauss Bascule Bridge Co.
- White & Co., Inc., J. G.
- Shanghai Dock & Engineering Co., Ltd.

**Bridge Materials**
- United States Steel Products Co.

**Building Materials**
- American Rolling Mill Co.
- W. H. Anderson & Co.
- Crittall Mfg. Co.
- Hayward's Ltd.

**Cables, Telephone, Telegraph Supplies**
- Andersen, Meyer & Co., Ltd.
- General Electric Co.
- W. T. Henley's Telegraph Works Co., Ltd.

**Cables**
- Andersen, Meyer & Co., Ltd.
- Shewan, Tomes & Co.

**Cableways**
- Andersen, Meyer & Co., Ltd.
- Lidgerwood Mfg. Co.

**Carbide**
- Canada Carbide Co.

**Carriage Door Locks**
- Jos. Kaye and Sons Ltd.

**Cars and Trucks (Railway)**
- American Car & Foundry Co.
- Andersen, Meyer & Co., Ltd.
- Shewan, Tomes and Co.

**Car Wheels and Axles**
- Andersen, Meyer & Co., Ltd.
- United States Steel Products Co.

**Cattle Guards**
- Fairbanks, Morse & Co.

**Cement**
- Anderson & Co., W. H.
- Green Island Cement Co., Ltd.

**Cement Machinery**
- Andersen, Meyer & Co., Ltd.
- Austin Drainage Excavator Co.

**Centrifugal Pumps**
- Andersen, Meyer & Co., Ltd.
- Drysdale & Co.
- Worthington Pump Co.

**Chain Grate Stokers**
- Babcock & Wilcox, Ltd.

**Chimneys**
- Babcock & Wilcox Ltd.

**Chromium Steel**
- Bohler Bros. & Co., Ltd.

**Circuit Breakers**
- Andersen, Meyer & Co., Ltd.
- General Electric Co.
- Westinghouse E. & M. Co.

**Cloth (Emery)**
- London Emery Works.

**Cloth Finishing Plants**
- Mather & Platt, Ltd.

**Coal Handling Machinery**
- Andersen, Meyer & Co., Ltd.
- Babcock & Wilcox Ltd.

**Coal Mining Co.'s**
- Kailan Mining Administration
- Peking Syndicate, Ltd.
- South Manchuria Railway Co.

**Compressors, Centrifugal**
- Andersen, Meyer & Co., Ltd.
- General Electric Co.

**Concrete Mixers**
- Andersen, Meyer & Co., Ltd.
- Austin Drainage Excavator Co.

**Concrete Reinforcement**
- Andersen, Meyer & Co., Ltd.
- Shewan, Tomes and Co.
- U. S. Steel Products Co.

**Condensing Plants**
- Andersen, Meyer & Co., Ltd.
- Worthington Pump Co., Ltd.

**Contractors, Electrical**
- Andersen, Meyer & Co., Ltd.
- Mather & Platt, Ltd.
- Shanghai Dock & Engineering Co. Ltd.
- Shewan Tomes & Co.
- Frank L. Strong Machinery Co.
- Siemens China Co.

**Contractors, (General)**
- Bohler Bros. & Co.
- Frank L. Strong Machinery Co.
- Shanghai Dock & Engineering Co. Ltd.
- White & Co. Inc., J. G.

**Contractors Supplies**
- Austin Drainage Excavator Co.
- Bucyrus Co.

**Consulting Engineers**
- Andersen, Meyer & Co., Ltd
- Gest, G. M.
- White & Co., Inc. J. G.

**Conveyors**
- Babcock & Wilcox Ltd.

**Copper Tubing**
- Broughton Copper Co., Ltd.

**Corrugated Iron**
- American Rolling Mill Co.

**Counting Machines**
- Andersen, Meyer & Co., Ltd.

**Couplers**
- Andersen, Meyer & Co., Ltd.
- McConway & Torley Co.

**Cranes**
- Andersen, Meyer & Co., Ltd.
- Babcock & Wilcox Ltd.

**Crushers**
- Andersen, Meyer & Co., Ltd.
- Lehigh Car, Wheel and Axle Wks.

**Culverts, Corrugated Iron**
- American Rolling Mill Co.

**Diamond Drill Boring**
- Andersen, Meyer & Co., Ltd.
- Peking Syndicate, Ltd.

**Diving Apparatus**
- A. J. Morse & Son

**Door Locks**
- Jos. Kaye and Sons Ltd.

**Drag Line Excavator**
- Anderson, Meyer & Co., Ltd.
- Lidgerwood Mfg. Co.

**Drawing Instruments**
- Andersen, Meyer & Co., Ltd.

**Dredgers**
- Bucyrus Company
- Middleton & Co., Ltd.
- Priestman Bros. Ltd.
- Shanghai Dock & Engineering Co., Ltd.

**Dry Batteries**
- Andersen, Meyer & Co., Ltd.

**Drydocks**
- Hongkong and Whampoa Dock Co.
- Mitsu Bishi Dockyards & Eng. Wks
- Shanghai Dock and Engineering Co.

**Dyeing Plants**
- Mather & Platt, Ltd.

**Economizers**
- Babcock & Wilcox Ltd.

**Electric Hoists**
- Andersen, Meyer & Co., Ltd.
- General Electric Co.
- Lidgerwood Mfg. Co.

**Electric Lighting Plants**
- Andersen Meyer & Co., Ltd.
- Arnhold, Karberg & Co.
- General Electric Co.
- Siemens China Co.
- Shanghai Machine Co.
- Shanghai Dock & Engineering Co., Ltd.
- Shewan, Tomes & Co.
- Frank L. Strong Machinery Co.
- U. S. Steel Products Co.
- Western Electric Co.
- Westinghouse E. & M. Co.

**Electrical Supplies**
- Andersen, Meyer & Co., Ltd.
- Arnhold, Karberg & Co.
- Babcock & Wilcox
- General Electric Co.
- Jardine, Matheson & Co.
- Mather & Platt, Ltd.
- Shewan, Tomes & Co.
- Siemens China Co.
- Shanghai Machine Co.
- Shanghai Dock & Engineering Co., Ltd.
- U. S. Steel Products Co.
- Western Electric Co.

**Elevators**
- Anderson, Meyer & Co., Ltd.

**Emery Wheels, Cloth & Paper**
- London Emery Works,

**Engines**
- Andersen, Meyer & Co., Ltd.
- Shanghai Dock & EngineeringCo., Ltd.

**Engines (Gas & Crude Oil)**
- Fielding and Platt, Ltd.

**Evaporators**
- Royles Ltd.

**Excavators and Elevators**
- Andersen, Meyer & Co., Ltd.
- Austin Drainage Excavator Co.
- Priestman Bros. Ltd.
- Shanghai Dock & Engineering Co., Ltd

**Expanded Metal**
- William Jacks & Co.

**Explosives**
- Andersen, Meyer & Co., Ltd.
- Du Pont de Nemours & Co.
- Jardine, Matheson & Co.
- Rendrock Powder Co.

**Fan Blowers**
- Andersen, Meyer & Co., Ltd.
- Drysdale & Co.
- Matthews and Yates, Ltd.

**Feed Water Heaters**
- Andersen, Meyer & Co., Ltd.
- Babcock & Wilcox, Ltd.

**Ferro Manganese**
- U. S. Steel Products Co

**Files**
- Bohler Bros. & Co., Ltd.

**Filters (Mechanical)**
- Mather & Platt, Ltd.
- Candy Filter Co.

**Firebrick**
- W. H. Anderson & Co.
- Kailan Mining Administration

**Fire Prevention Apparatus**
- Mather & Platt, Ltd.

**Filament Lamps**
- Andersen, Meyer & Co., Ltd.
- Frank L. Strong
- Siemens China Co.
- Westinghouse E. & M. Co.

**Flat Turret Lathe**
- Jones & Lamson Mchy. Co

**Folding Chairs**
- Simmons Mfg. Co.

**Food Products**
Anderson & Co., W. H.

**Forwarding Agents**
W. H. Anderson and Co.

**Fuses and Fuse Blocks**
Andersen, Meyer & Co., Ltd.
General Electric Co.
Westinghouse E. & M. Co.

**Galvanized Roofing**
American Rolling Mill Co.
U. S. Steel Products Co.

**Gas Engines**
Andersen, Meyer & Co., Ltd.
Mather & Platt. Ltd.
Worthington Pump Co., Ltd.

**Gasoline Lighting Plants**
Andersen, Meyer & Co.

**Gears, Silent**
Andersen, Meyer & Co., Ltd.
General Electric Co.

**Generators, Electric**
Andersen, Meyer & Co., Ltd.
General Electric Co.

**Gold Dredges**
Bucyrus Co.

**Graphite Paint**
J. Dampney & Co.

**High Speed Engines**
Drysdale & Co.

**Hoisting Engines**
Andersen, Meyer & Co., Ltd.
Lidgerwood Mfg. Co.

**Horse Shoes**
U. S. Steel Products Co.

**Hose**
F. Reddaway & Co., Fire Hose "Sphincter Grip," Armoured Hose, etc.

**Hotels**
Chosen Railways
South Manchuria Railway.

**Ice Machinery**
Andersen, Meyer & Co., Ltd.
Vulcan Iron Works

**Insurance**
Andersen, Meyer & Co., Ltd.
Stevenson & Co., Ltd., W. F.

**Ironfounders**
A. F. Craig & Co.

**Iron Sheets (Rustproof)**
American Rolling Mill Co.

**Job Printers**
Commercial Press

**Journal Boxes**
Andersen, Meyer & Co., Ltd.
T. H. Symington Co.

**Knitting Machines**
Andersen, Meyer & Co., Ltd.
Shewan, Tomes and Co.

**Lanterns and Lamps**
Andersen, Meyer & Co., Ltd.

**Locks**
Joseph Kaye & Sons, Ltd
Shewan, Tomes & Co.

**Locomotives**
American Locomotive Co.
Andersen, Meyer & Co., Ltd.
Baldwin Locomotive Co.
Lima Locomotive Co.

**Locomotive Speed Indicator and Recorder**
Baldwin Locomotive Works
Hasler Telegraph Works.

**Locomotive Headlights**
Pyle-National Electric Co.

**Logging Machinery**
Lidgerwood Mfg. Co.

**Lubricants**
Albany Lubricating Co.
Standard Oil Co.
W. H. Anderson & Co.

**Lumber Dealers**
Jardine, Matheson & Co.
Norton Harrison Co.
Shewan, Tomes & Co.

**Machinery Merchants**
Andersen, Meyer & Co., Ltd.
Frank L. Strong Machinery Co.
Schuchardt & Schutte.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.

**Machine Tools**
Andersen, Meyer & Co., Ltd.
American Tool Works Co.
Jones & Lamson Mchy. Co.
Schuchardt and Schutte.

**Marine Engines**
Andersen, Meyer & Co., Ltd.
Fairbanks, Morse & Co.
W. F. Stevenson & Co., Ltd.

**Manganese Steel**
Bohler Bros. & Co., Ltd.
Edgar Allen & Co.

**Manila Rope**
Johnson Pickett Rope Co

**Measuring Instruments**
Andersen, Meyer & Co., Ltd.
General Electric Co.

**Meat Products**
W. H. Anderson & Co.

**Mechanical Rubber Goods**
F. Reddaway & Co.

**Metal Windows**
Crittall Manufacturing Co.

**Meters, Flow-Air, Gas and Water**
Andersen, Meyer & Co., Ltd.
General Electric Co.

**Mill Machinery**
Andersen, Meyer & Co., Ltd.
Shanghai Dock & Engineering Co., Ltd.

**Mine Locomotives**
Andersen, Meyer & Co., Ltd.
General Electric Co.

**Mine Prospecting and Development**
Andersen, Meyer & Co., Ltd.
Peking Syndicate, Ltd.

**Mining Machinery**
Bucyrus Co.
Goulds Manufacturing Co.
Melchers & Co.
Shanghai Dock & Engineering Co., Ltd.
Shewan, Tomes & Co.

**Motor Omnibus**
Hurst Nelson and Co., Ltd.

**Motors**
Andersen, Meyer & Co., Ltd.
General Electric Co.
Shanghai Dock & Engineering Co., Ltd.

**Motor Launches**
Andersen, Meyer & Co., Ltd.
Shanghai Dock & Engineering Co., Ltd.

**Motor Spirits**
Standard Oil Co.

**Motor Tyres**
Firestone Tire and Rubber Co.
F. Reddaway & Co.

**Motor Vehicles**
Andersen, Meyer & Co., Ltd.
Commercial Car Co.
Fairbanks Morse & Co.

**Oil Break Switches**
Andersen, Meyer & Co., Ltd.
General Electric Co.
Westinghouse E. & M. Co.

**Oiled Cloths and Papers**
Micanite and Insulators Co., Ltd.

**Oil Engines**
Andersen, Meyer & Co., Ltd.
Fairbanks, Morse & Co.

**Oilwell Casing and Tubing**
U. S. Steel Products Co.

**Ozone Machines**
Siemens China Co.

**Packings**
F. Reddaway & Co.

**Paints, Oils and Varnish**
Albany Lubricating Co.
Standard Oil Co.

**Paper (Emery)**
London Emery Works.

**Photo-Engravers**
Commercial Press

**Piling (Sheet Steel)**
U. S. Steel Products Co.

**Placer Dredges**
Bucyrus Co.

**Power Plants**
Andersen, Meyer & Co., Ltd.
Frank L. Strong Machinery Co.

**Printing Machinery**
Jardine, Matheson & Co.
Shewan, Tomes Co.

**Pulleys and Shafting**
Dodge Mfg. Co.

**Pulleys (Steel)**
Schuchardt & Schutte
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.

**Pulverizers**
Andersen, Meyer & Co., Ltd.
Lehigh Car, Wheel and Axle Works.

**Pumps**
Anderson, Meyer & Co.
Drysdale & Co. Ltd.
Fairbanks, Morse & Co.
General Electric Co.
Goulds Manufacturing Co.
Jardine, Matheson & Co.
Joseph Evans & Sons
Mather & Platt, Ltd.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
Shewan, Tomes & Co.
Worthington Pump Co.

**Pulverizing Mills**
Andersen, Meyer & Co., Ltd.
Lehigh Car, Wheel and Axle Wks.

**Radial Drills**
American Tool Works Co.

**Railroads**
Chinese Government Railways
Chosen (Korea) Railways.
South Manchuria

**Railroad Supplies**
Andersen, Meyer & Co., Ltd.
American Locomotive Co.
Andersen, Meyer & Co.
Arnhold, Karberg & Co.
Baldwin Locomotive Works.
Fairbanks, Morse & Co.
Jardine, Matheson & Co., Ltd.
Lima Locomotive Works.
McConway & Torley Co.
Pyle-National Electric Co.
Robert Dollar Co.
T. H. Symington Co.
Shewan, Tomes & Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.

**Rail Anchors**
William Jacks & Co.

**Railway Signals**
Railway Signal Co.

**Refrigerating Machinery**
Andersen, Meyer & Co., Ltd.
Vulcan Iron Works.

**Reinforced Concrete Construction**
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.

**Rheostats**
Andersen, Meyer & Co., Ltd.
General Electric Co.

**Road Machinery**
Western Wheeled Scraper.

**Road Rollers**
Andersen, Meyer & Co., Ltd.
W. F. Stevenson and Co.

**Roofing Materials**
American Rolling Mill Co.
W. H. Anderson & Co.
Norton & Harrison.
U. S. Steel Products Co.

**Rope Manufacturers**
Johnson-Pickett Rope Co.
Shewan, Tomes & Co.
U. S. Steel Products Co.

**Rotary Converters**
General Electric Co.

**Rotary Dryers**
Lehigh Car, Wheel and Axle Wks.

**Rubber Tires**
Firestone Tire and Rubber Co

**Safes**
Andersen, Meyer & Co., Ltd.
W. H. Anderson & Co.
Mustard & Co.
Shewan, Tomes & Co.

**Safety Valves**
Andersen, Meyer & Co., Ltd.

**Saw Mill Machinery**
Andersen, Meyer & Co., Ltd.

**Sewer Pipe & Tile**
W. H. Anderson & Co.

**Sheet Steel**
U. S. Steel Products Co.

**Shipping Agents**
Shewan, Tomes & Co
Stevenson & Co., Ltd.

**Shipbuilding and Repairs**
Fiat-san Giorgio Ltd.
Hongkong & Whampoa Dock Co., Ltd.
Mitsu Bishi Dock and Engineering Works
Shanghai Dock and Engineering Co., Ltd.

**Steam Hoists**
Andersen, Meyer & Co., Ltd.
Lidgerwood Mfg. Co.

**Steam Turbines**
Andersen, Meyer & Co. Ltd.
General Electric Co.

**Steel Windows**
Crittall Mfg. Co., Ltd.

**Steel Works**
Bohler Bros. & Co., Ltd.
U. S. Steel Products Co.

**Stokers**
Babcock & Wilcox Ltd.

**Stretchers**
Simmons Mfg. Co.

**Structural Steel**
Bohler Bros. & Co.
Shanghai Dock & Engineering Co., Ltd.
U. S. Steel Products Co.

**Superheaters**
Babcock & Wilcox Ltd.
Schmidt Superheating Co.

**Tanks**
Shanghai Dock & Engineering Co., Ltd
U. S. Steel Products Co.

**Telephones**
Anderson, Meyer & Co.
Kellogg Switchboard & Supply Co.
The Western Electric Co.
Westinghouse E. & M. Co.

**Textile Machinery**
Andersen, Meyer & Co., Ltd.

**Tiles and Bricks**
Green Island Cement Co., Ltd.
Kailan Mining Administration.

**Tin Dredges**
Bucyrus Co.

**Tin Plates**
American Rolling Mill Co.
U. S. Steel Products Co.

**Tools**
American Tool Works Co.
Shanghai Machine Co.
Shanghai Dock & Engineering Co., Ltd

**Tool Steel**
Bohler Bros. & Co. Ltd.
U. S. Steel Products Co.

**Towers, Cooling**
Worthington Pump Co., Ltd.

**Track Gauges and Levels**
Andersen, Meyer & Co., Ltd.
Fairbanks, Morse & Co.

**Tramcars**
Andersen, Meyer & Co., Ltd.
Hurst, Nelson & Co. Ltd.

**Tramway Equipment**
Andersen, Meyer & Co., Ltd.

**Tramway Supplies and Specialties**
Andersen, Meyer & Co., Ltd.

**Transformers, Electric**
Andersen, Meyer & Co., Ltd.
General Electric Co.

**Trucks**
Andersen, Meyer & Co., Ltd.
Commercial Car Co.

**Tube Mills**
Edgar Allen & Co.

**Tungsten Steel**
Bohler Bros. & Co., Ltd.

**Turbines**
Escher, Wyss.

**Turbine Pumps**
Andersen, Meyer & Co., Ltd.
Worthington Pump Co., Ltd.
Mather and Platt.

**Turbines, Steam**
Andersen, Meyer & Co., Ltd.
General Electric Co.

**Turbo-Blowers**
Andersen, Meyer & Co., Ltd.
General Electric Co.

**Turret Lathes**
Jones and Lamson Mchy. Co.

**Valves**
Andersen, Meyer & Co., Ltd.
Shewan, Tomes & Co.

**Vanadium Steel**
U. S. Steel Products Co.

**Ventilating Apparatus**
Andersen, Meyer & Co., Ltd.
Shewan, Tomes & Co.

**Water Softeners**
Babcock & Wilcox Ltd.

**Waterworks Equipment**
Andersen, Meyer & Co., Ltd.
Edgar Allen & Co. Ltd.
Worthington Pump Co.

**Weaving Machinery**
Andersen, Meyer & Co., Ltd.
Shewan, Tomes & Co.

**Welding Outfits, Electric Arc.**
General Electric Co.

**Wheels (Emery)**
London Emery Works.

**Windmills**
Fairbanks, Morse & Co.

**Windows Steel**
Crittall Mfg. Co.

**Wireless Telegraph Apparatus**
Andersen, Meyer & Co., Ltd.
Siemens, China.

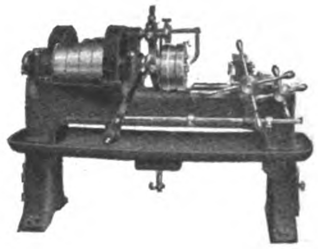
**Wire Nails**
U. S. Steel Products Co.

**Wire Rope and Cables**
Bohler Bros. & Co., Ltd.
U. S. Steel Products Co.

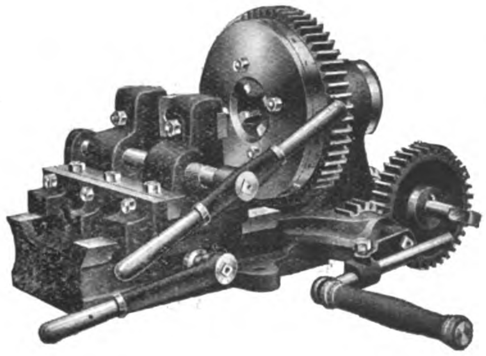
**Wood Working Machinery**
Andersen, Meyer & Co., Ltd.
American Tool Works Co.
Shanghai Dock & Engineering Co., Ltd

**Wrenches**
Trimont Mfg. Co

# Modern Screwing Machines



The illustration opposite shows our 2 in. size Single Head Patent Automatic Screwing Machine, which is one of a complete line of Single and Multiple Head Bolt Screwing Machines embodying the very latest labour-saving features and devices. It has Hand and Automatic Releasing Motion to the Die Head, Automatic Closing Device, Die Adjustment whilst in motion, etc. We claim that the Patent Steel Die Head these machines are fitted with is the most solid, simplest and best Releasing Die Head on the market. The Dies are operated mechanically. Springs with their attendant troubles, or other delicate mechanisms, do not enter into the construction in any way.



The illustration below shows our improved Universal Screwing Machine, which will screw Pipes, Bends and Short pieces up to 2 in. diameter, and Bolts when required up to 1½ in. diameter. This type of machine is also made for working by Power as well as by Hand, and in several larger sizes for dealing with Pipes up to 8 in. diameter. Of the 2 in. size illustrated we have during the last few years supplied over 2,500 machines, amongst which are many repeat orders.

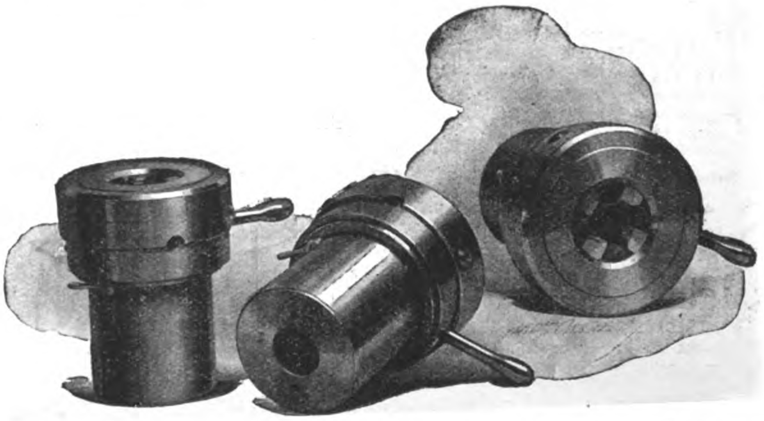
*We will mail you a copy of our illustrated and descriptive Catalogue on request.*

**Joshua Heap & Co., Ltd.,**

**ASHTON-UNDER-LYNE, ENG.**

# THE NO. 4 HARTNESS AUTOMATIC DIE.

**This die has a wide range, covering standard threads from ¼ inch to 1¼ inches diameter.**



**It will safely cut threads as fine as 32 per inch on all diameters within its range.**

It is provided with roughing attachment which may be set to give roughing and finishing cuts without disturbing the finish diameter. This die is suitable for general turret lathe and screw machine use. It is especially adapted for use in automatic screw machines, owing to the compactness of its design.

**Shanks to fit any size or make of machine within its range furnished without extra charge.**

***Catalogue and descriptive literature sent post free on request.***

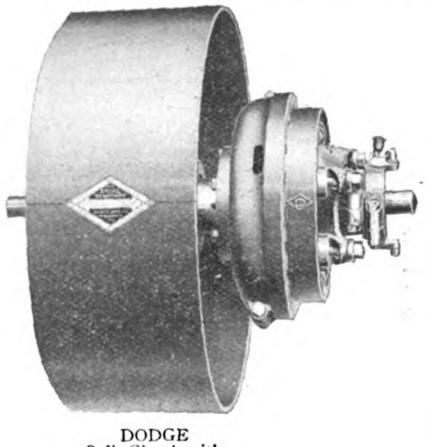
**JONES & LAMSON MACHINE COMPANY,**

97 Queen Victoria St., London, England. :-: Springfield, Vermont, U.S.A.

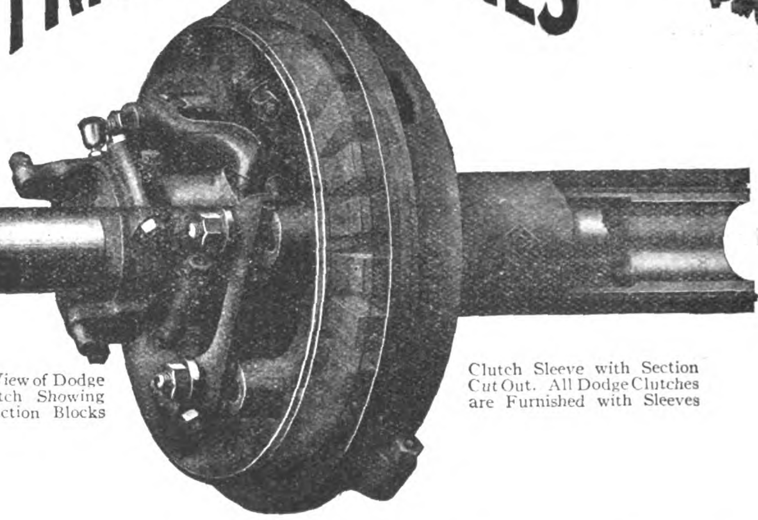
Cable Address: "Turretorum" London. Cable Address: "Turret" Springfield, Vt.

# DODGE

# FRICTION CLUTCHES



DODGE
Split Clutch with
Dodge Standard
Split Pulley
Mounted on
Clutch Sleeve



Phantom View of Dodge Split Clutch Showing Wood Friction Blocks

Clutch Sleeve with Section Cut Out. All Dodge Clutches are Furnished with Sleeves

DODGE
Split Clutch with
Dodge Gear
Mounted on
Clutch Sleeve

*Cable Address*
"DODSACO—
NEW YORK"

*Codes Used*
WESTERN UNION
LIEBERS and ABC

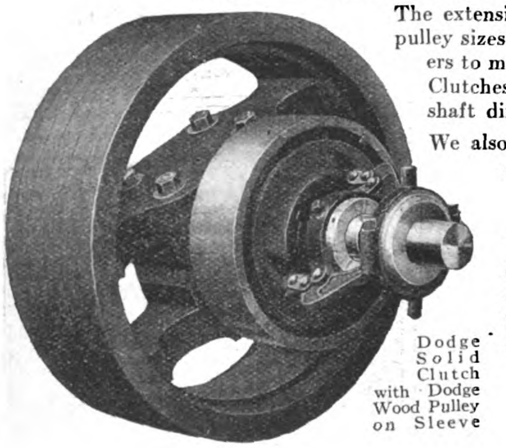
DODGE Friction Clutches are made in both solid and split types and in all sizes. Through their wonderful adaptability to operating requirements, their ease of adjustment and control, their great strength and durability, and because of the low cost of renewing friction members from material available everywhere, Dodge Clutches have maintained a leadership so far advanced as to have remained unquestioned during thirty years.

The extension sleeve, with which all Dodge Clutches are provided, permits changing pulley sizes in service without disturbing clutch mechanism, and also enables our dealers to meet every requirement from a comparatively small stock of clutches. Dodge Clutches are also manufactured in the form of cut-off couplings for driving one shaft directly from another.

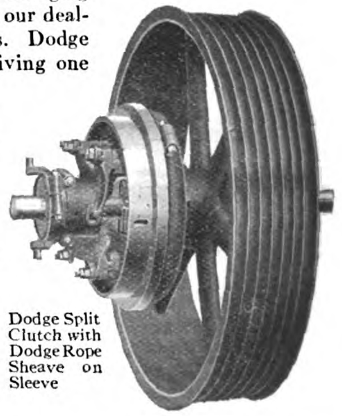
We also manufacture, in all stock sizes, Iron and Wood Pulleys, Ball and Socket Self-Oiling Bearings, Hangers, Shaft Couplings, and

*"Everything for the mechanical transmission of power"*

We maintain large and complete seaboard stocks for prompt export shipment. Our thirty years' experience in manufacturing and packing machinery for export insures safe delivery. Complete transmission installations (rope or belt drives) we design to meet your requirements or build accurately to your specifications.



Dodge Solid Clutch with Dodge Wood Pulley on Sleeve



Dodge Split Clutch with Dodge Rope Sheave on Sleeve

WE HAVE AN ATTRACTIVE OFFER FOR RESPONSIBLE DEALERS IN SECTIONS WHERE WE ARE NOT AT PRESENT REPRESENTED

**CATALOGUES PREPAID ON REQUEST**

## DODGE SALES AND ENGINEERING CO.

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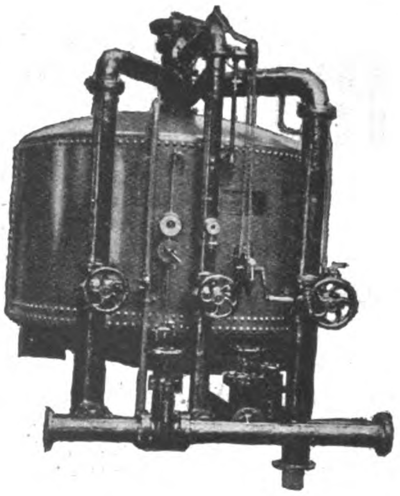

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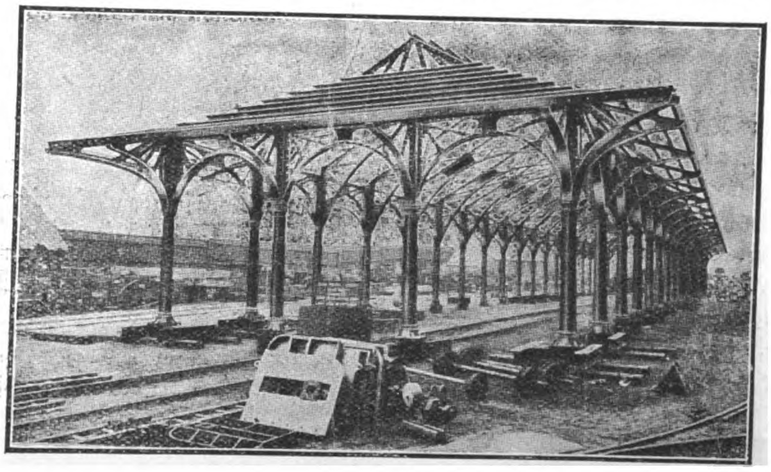

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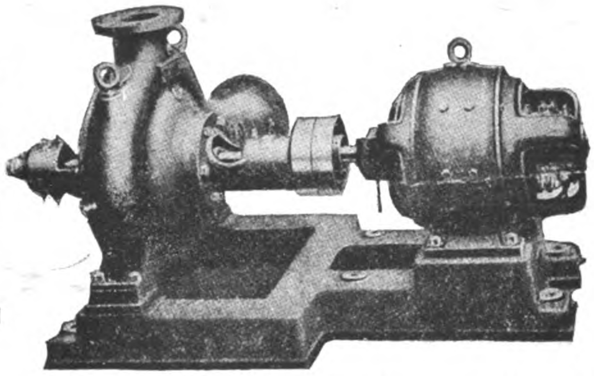

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WE manufacture Turbine Pumps (for high and low lifts), Centrifugal Pumps, Medium Lift Pumps, High-lift single-chamber Pumps, and High-lift Multi-chamber Pumps. Any Capacity—Any Head—Any Speed.

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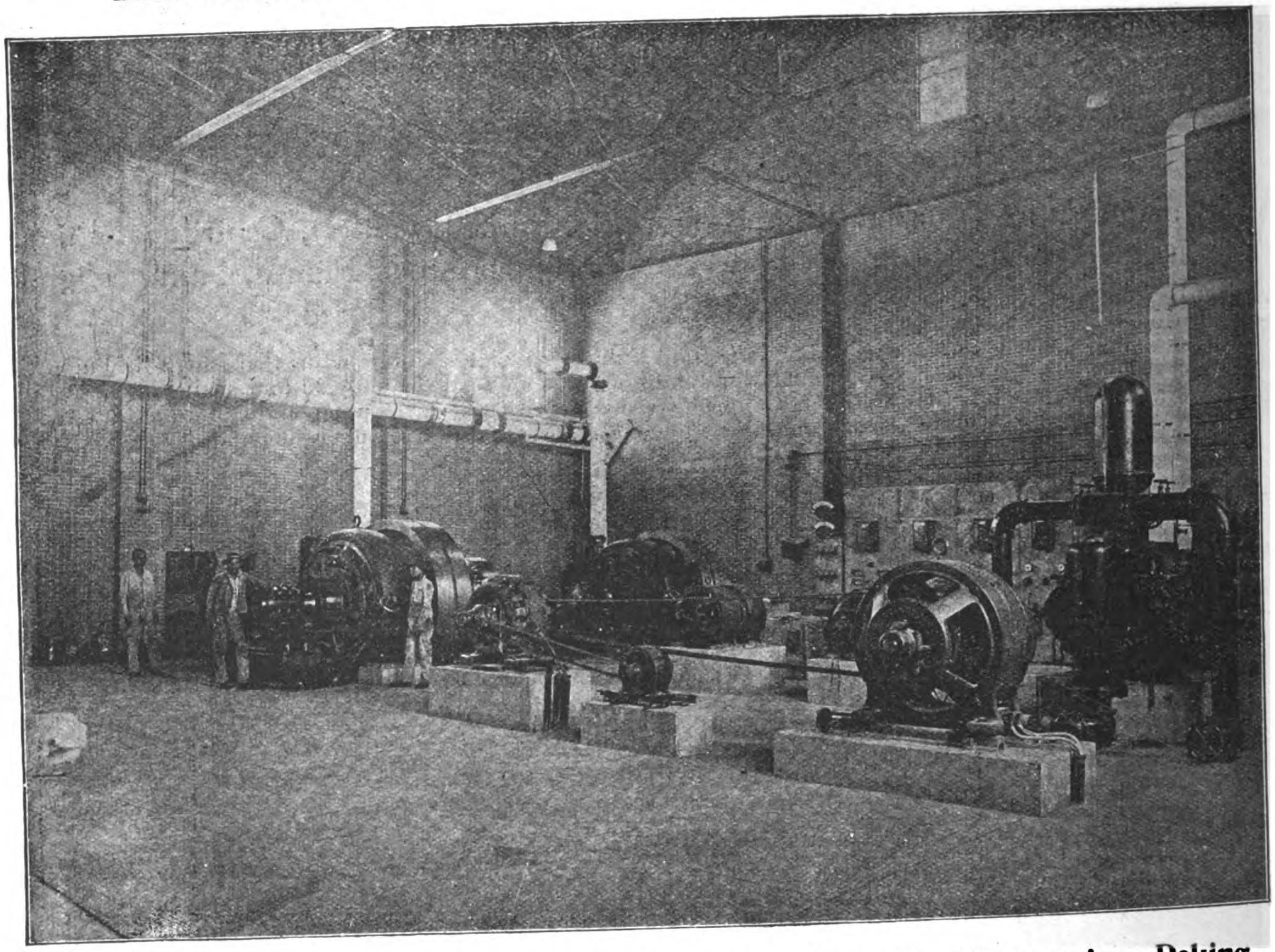

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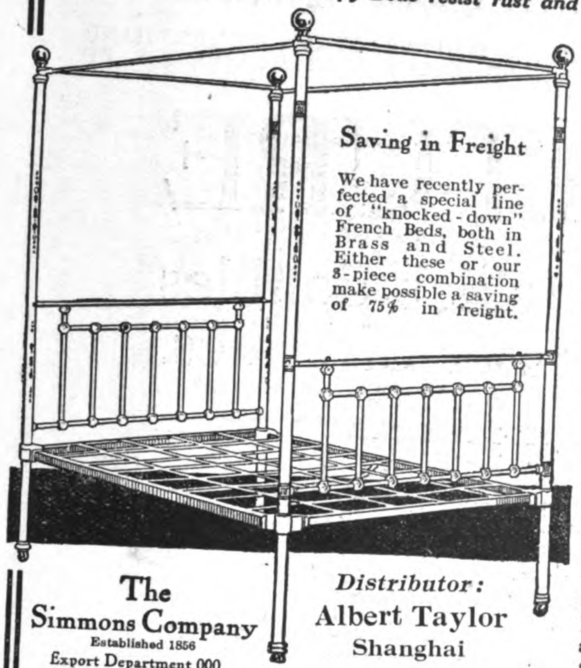

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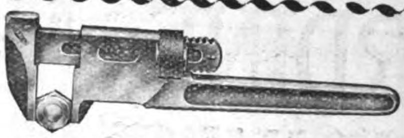

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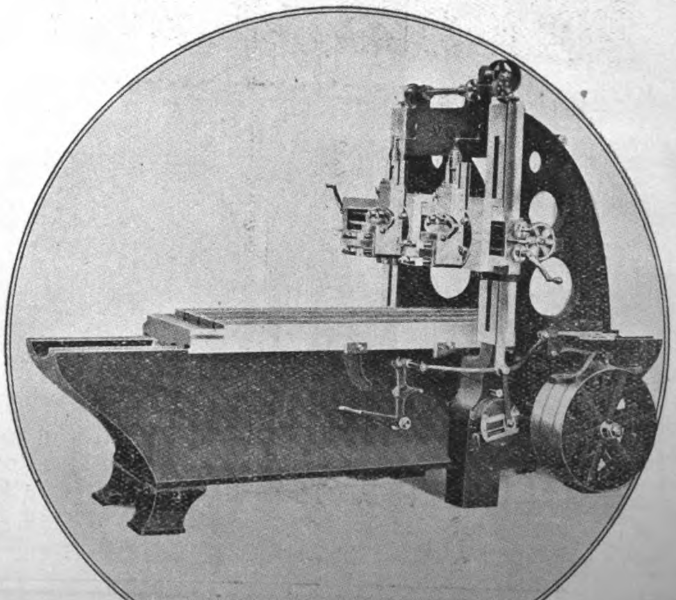

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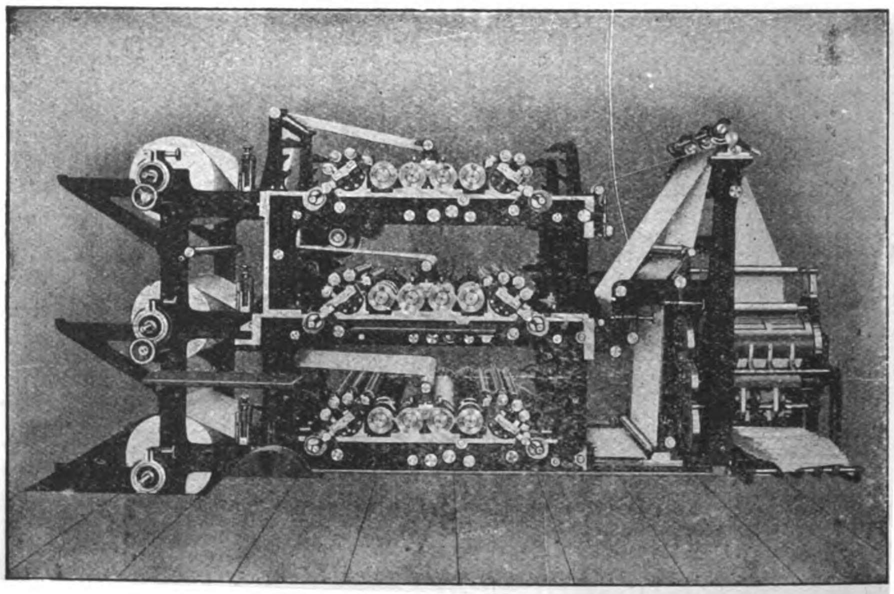

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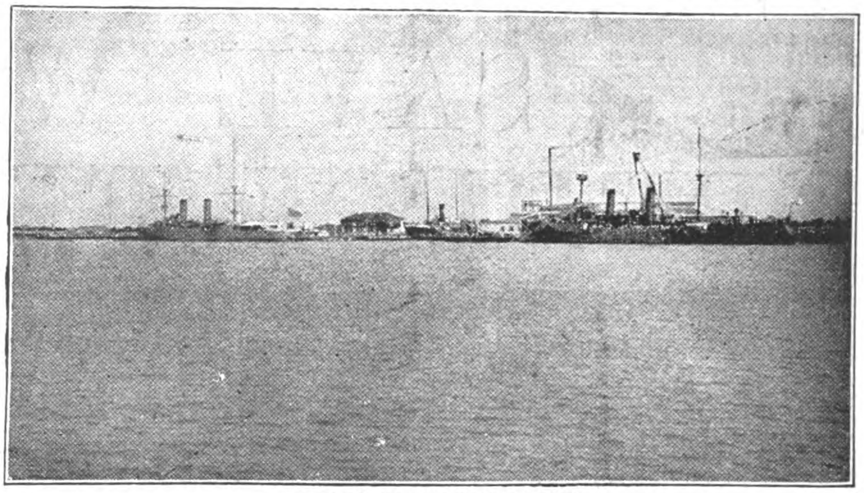

VIEW OF INTERNATIONAL DOCK
showing "M. S. Dollar" in Dock and the Chinese Cruisers "Hai Chi" and "Hai Yung" alongside Dock Co's. Wharf.

## Boilermakers, Dock Proprietors, Shipbuilders, Engineers and Electricians

**FIFTEEN REVENUE CRUISERS BUILT FOR THE QUARTERMASTER'S DEPARTMENT U. S. ARMY—MANILA, P. I.**

**The Model was exhibited at St. Louis Exposition and awarded the Gold Medal in 1904**

**The Sea-going Salvage-vessel "General Weeks" 148 feet long Built for the same Department, in 1910**

**Low Pressure Hot Water and Steam Heating Installations**

The Docks are five in number, ranging in length from 355 feet to 532 feet on the Blocks, and breadth of entrance from 53 feet to 77 feet, with a depth of water on the sill of from 16 feet to 24 feet.

The Dock charges are the most moderate in the Far East

The Company's Yards and Docks cover 96 acres. The Water Frontage is about 1½ miles in length. Wharves and Pontoons are arranged where steamers can moor during repairs; and slips for hauling up small vessels are provided. Sheer legs capable of lifting 65 tons are placed at the various Docks.

The extensive Shipbuilding yards and workshops, lit by Electric Light, are provided with the latest improvements, such as traveling cranes of 60 tons' capacity, hydraulic and pneumatic machinery and tools.

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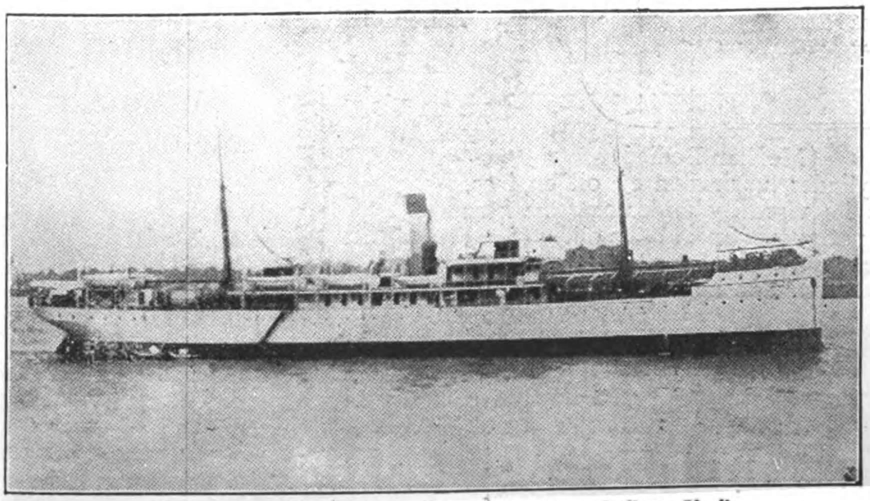

U. S. ARMY TRANSPORT "MERRITT" 300' 0" × 45' 0" × 28' 3"
Built for United States Government in 1912.

**PARTICULARS OF DOCKS**

Able to accommodate any vessel that can reach Shanghai

| Names | Length on Blocks | High Water | |
|---|---|---|---|
| | | Breadth of Entrance | Depth of water on Sill |
| Cosmopolitan D-ck | 532 feet | 77 feet | 24 feet |
| International Dock | 528 ,, | 77 ,, | 23 ,, |
| New Dock . . . | 450 ,, | 74 ,, | 21 ,, |
| Old Dock . . . | 399 ,, | 53 ,, | 16 ,, |
| Tunkadoo Dock . | 350 ,, | 67 ,, | 18 ,, |

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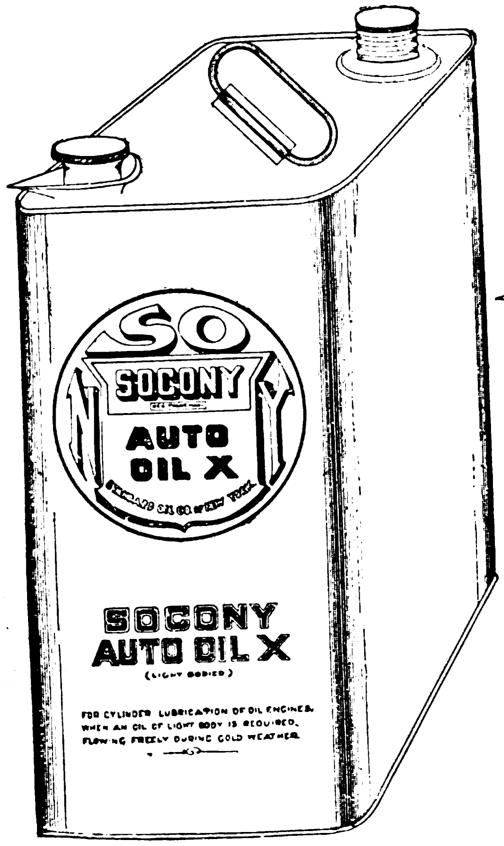
**Do not waste it.**




(Light Bodied)
For cylinder lubrication of oil engines when an oil of light body is required flowing freely during cold weather.

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For cylinder lubrication of oil engines. It holds its viscosity under extreme heat and will not gum. Should this oil be found insufficient in body for the tropics we recommend our Socony Auto Oil XXX.

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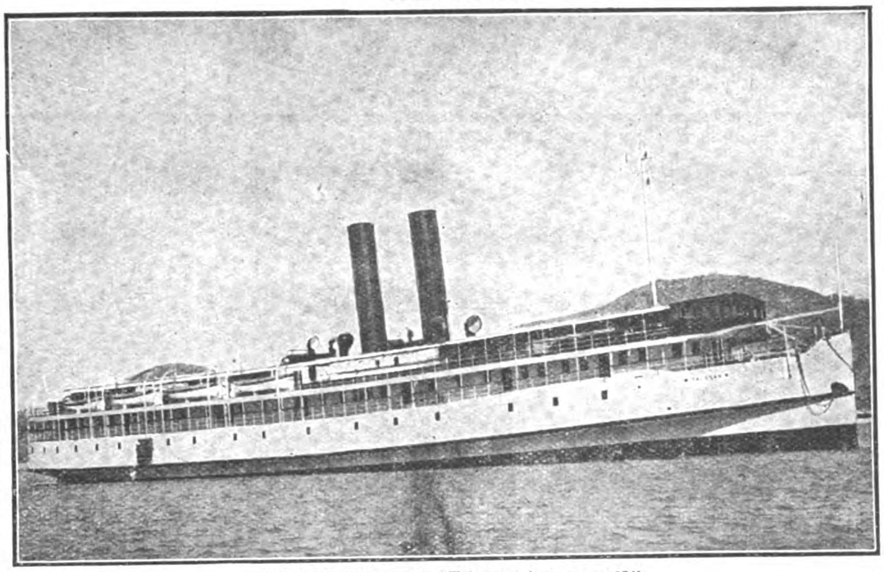

TWIN SCREW RIVER STEAMER "TAI SHAN"

Length 290 ft. Breadth 53 ft. Depth 12 ft., fitted with Compound Surface Condensing Engines for a speed of 14.7 knots.

Built and engined complete by the HONGKONG & WHAMPOA DOCK CO., LTD. for the HONGKONG, CANTON & MACAO STEAMBOAT CO. LTD.

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| *Name of Dock or Slip* | *Length on Keel Blocks* | *Entrance Breadth* | *Depth Over Sill at Ordinary Spring Tides* | *Rise of Tide* | |
|---|---|---|---|---|---|
| | | | | *Springs* | *Neaps* |
| **KOWLOON** | *Feet* | *Feet* | *Feet* | *Feet* | *Feet* |
| No. 1 Dock, Kowloon . . . | 700 | { 86 ft. top / 70 ft. bottom } | 30′ | 7′ 6″ | 3 |
| No. 2 Dock, Kowloon . . . | 371 | 74′ | 18′ 6″ | 7′ 6″ | —— |
| No. 3 Dock, Kowloon . . . | 264 | 49′ 3″ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 1, Kowloon . | 210 | 60′ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 2, Kowloon . | 220 | 60′ | 12′ | 7′ 6″ | —— |
| **TAI-KOK-TSUI** | | | | | |
| Cosmopolitan Dock . . . . | 466 | 85′ 6″ | 20′ | 7′ 6″ | —— |
| **ABERDEEN** | | | | | |
| Hope Dock . . . . . . . . | 430 | 84′ | 23′ | 7′ 6″ | —— |
| Lamont Dock . . . . . . . | 333 | 64′ | 16′ | 7′ 6″ | —— |

Please Address Enquiries to the Chief Manager, R. M. DYER, B. Sc., M.I.N.A., Kowloon Dock, Hongkong.

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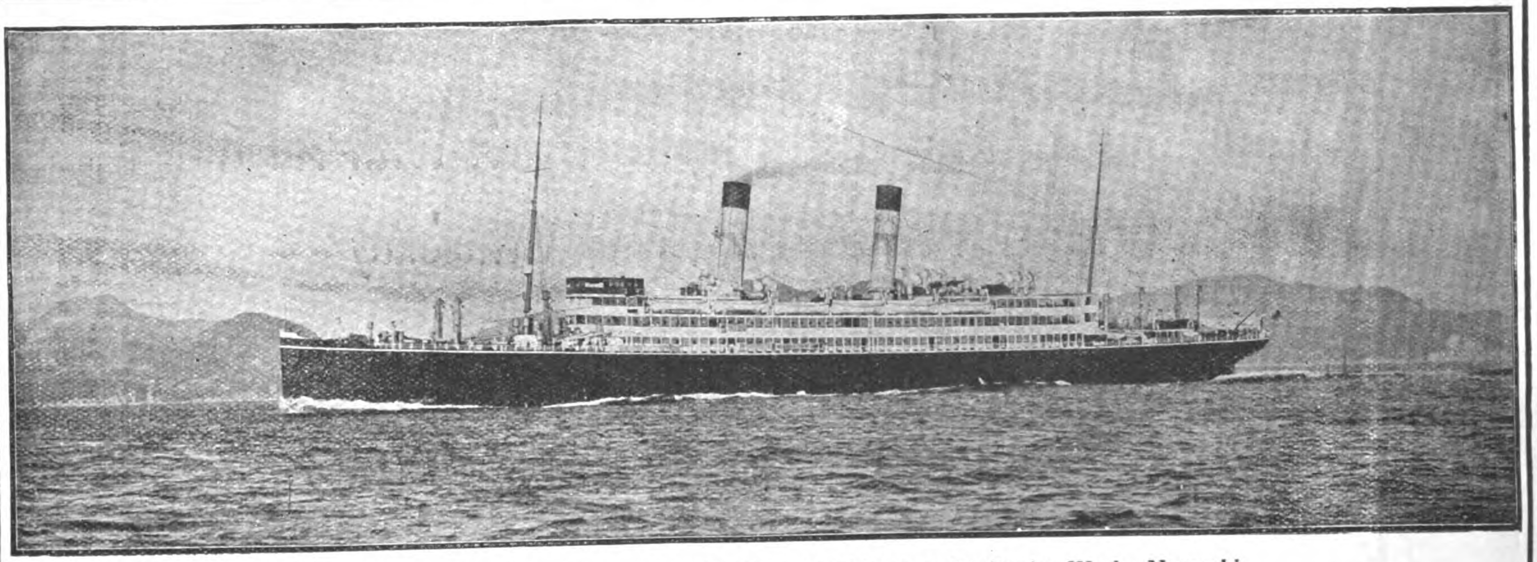

The "Tenyo Maru," built and engined by the Mitsu Bishi Dockyard & Engine Works, Nagasaki.

# MITSUBISHI DOCKYARDS & ENGINE WORKS, NAGASAKI

**DOCK No. 1.**

| | | |
|---|---|---|
| Extreme Length . . . . | 523 | Ft. |
| Length on Blocks . . . . . | 513 | " |
| Width of Entrance on top . . | 88 | " |
| " " " " Bottom | 77 | " |
| Water on Blocks at Spring Tide | 26½ | " |

**DOCK No. 2.**

| | | |
|---|---|---|
| Extreme Length . . . . . . | 371 | Ft. |
| Length on Blocks. . . . . . | 360 | " |
| Width of Entrance on top . . | 66 | " |
| " " " " Bottom. | 53 | " |
| Water on Blocks at Spring Tide | 22 | " |

**DOCK No. 3.**

| | | |
|---|---|---|
| Extreme Length . . . . . . | 723 | Ft. |
| Length on Blocks . . . . . | 714 | " |
| Width of Entrance, top . . . | 99½ | " |
| " " " Bottom. . | 83½ | " |
| Water on Blocks at Spring Tide | 34½ | " |

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**With Special Facilities for Handling the Heaviest Castings and the Repairing or Building of Ships, Engines and Boilers Also Electrical Work.**

**LARGE STOCK OF MATERIAL, AND FITTINGS ALWAYS ON HAND**

**The Powerful Salvage Steamer "Oura-Maru" (712 Tons, 700 I. H. P.) Equipped With Necessary Pumps And Gear, is Always Ready at Short Notice.**

# "Pegasus!" Motor Spirit

*(Brand Name)*

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sold in The Far East

is packed in tins and boxes

at our refineries in the

United States of America.

This method of packing

enables us to deliver to you

**In Its Original Package, A Motor Spirit With All Its Original Power—Producing Efficiency**

## STANDARD OIL COMPANY OF NEW YORK

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PHILIPPINE ISLANDS, INDO-CHINA, AND SIAM.

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## WATER-TUBE STEAM BOILERS

SUITABLE FOR ALL INDUSTRIES, AND FOR BURNING ANY KIND OF FUEL

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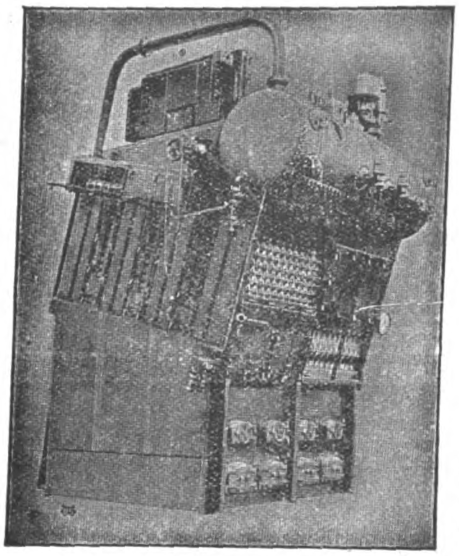

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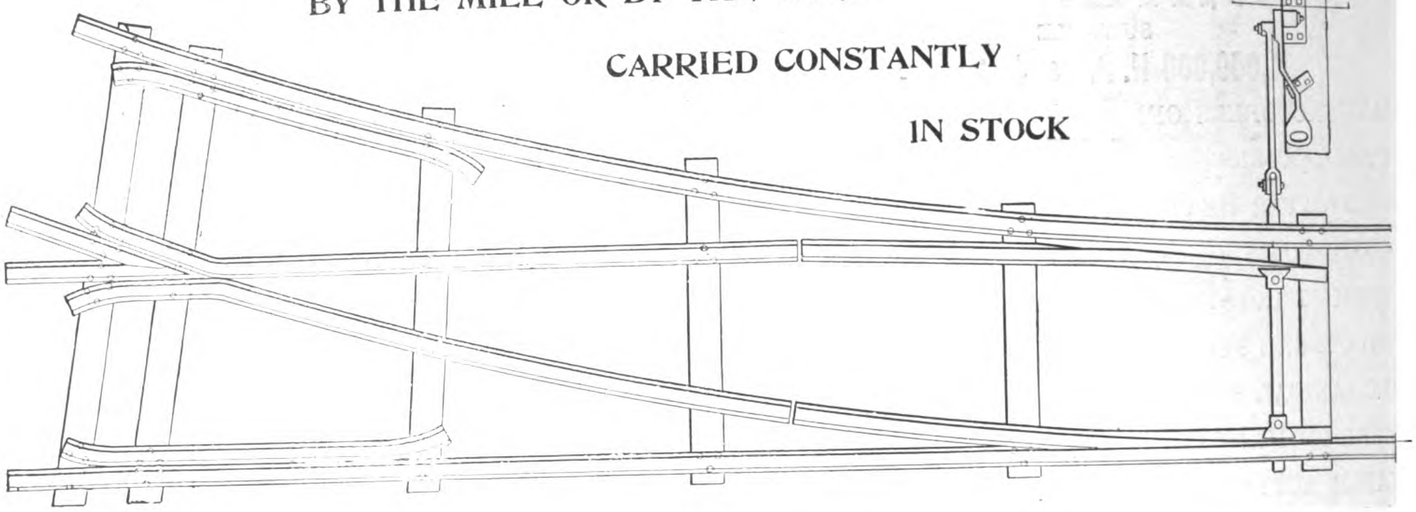

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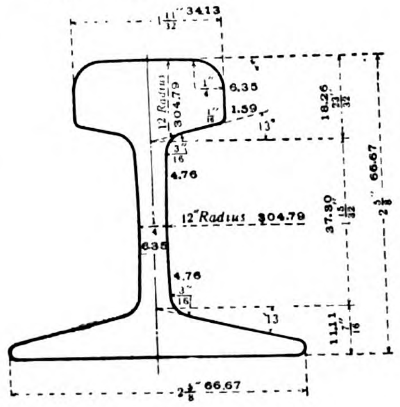

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50.4 meters of single track per tonne.

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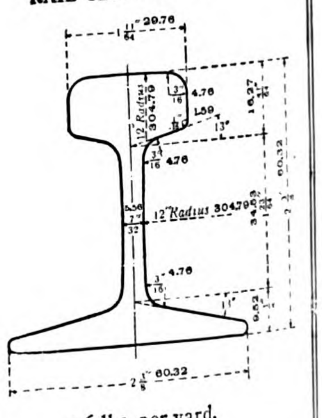

16 lbs. per yard.
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15.88 tonnes per kilometer of single track.
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62.97 meters of single track par tonne.

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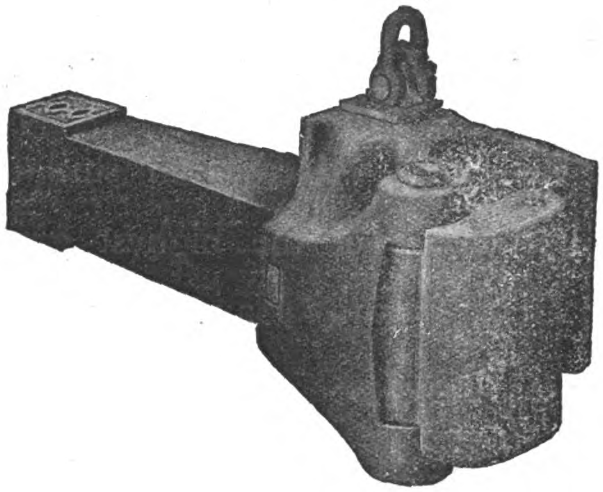

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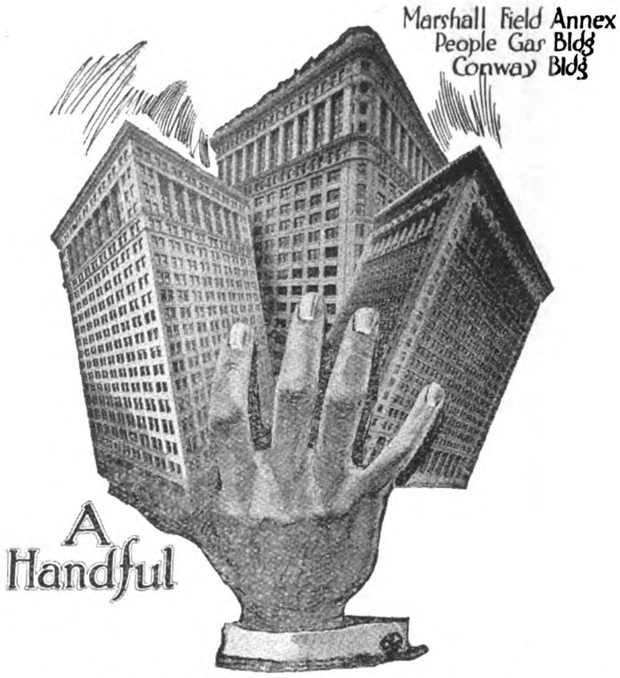


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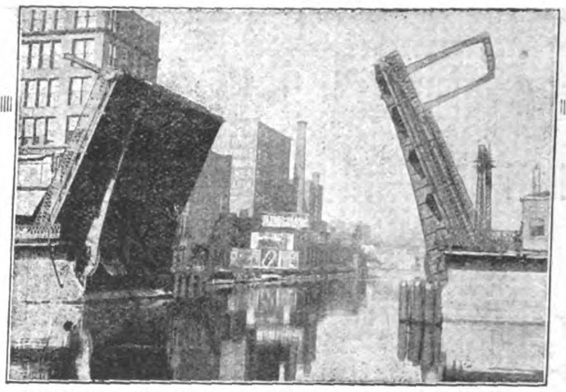

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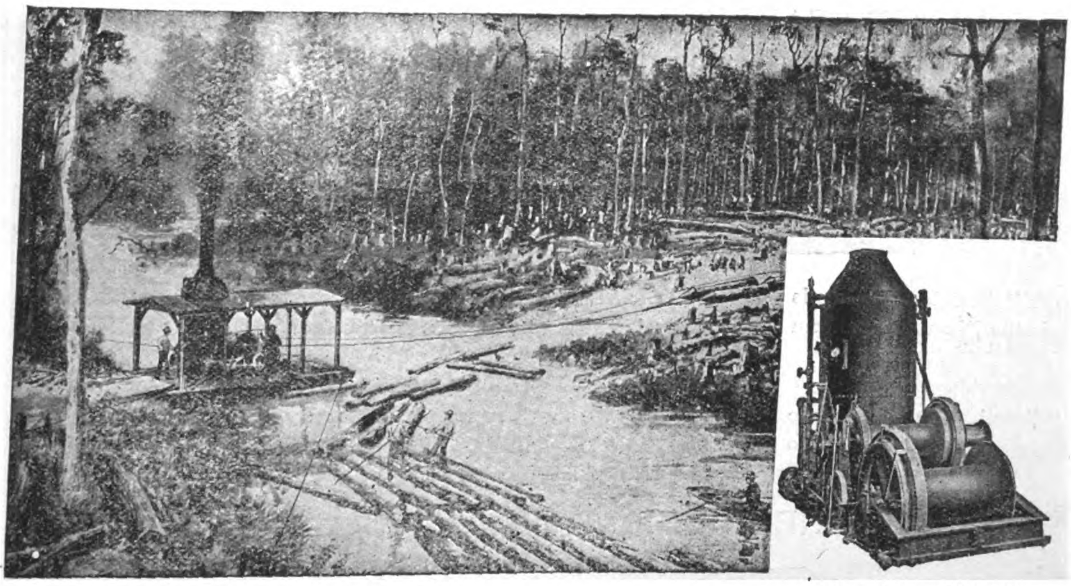

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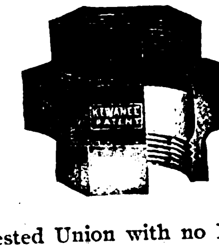


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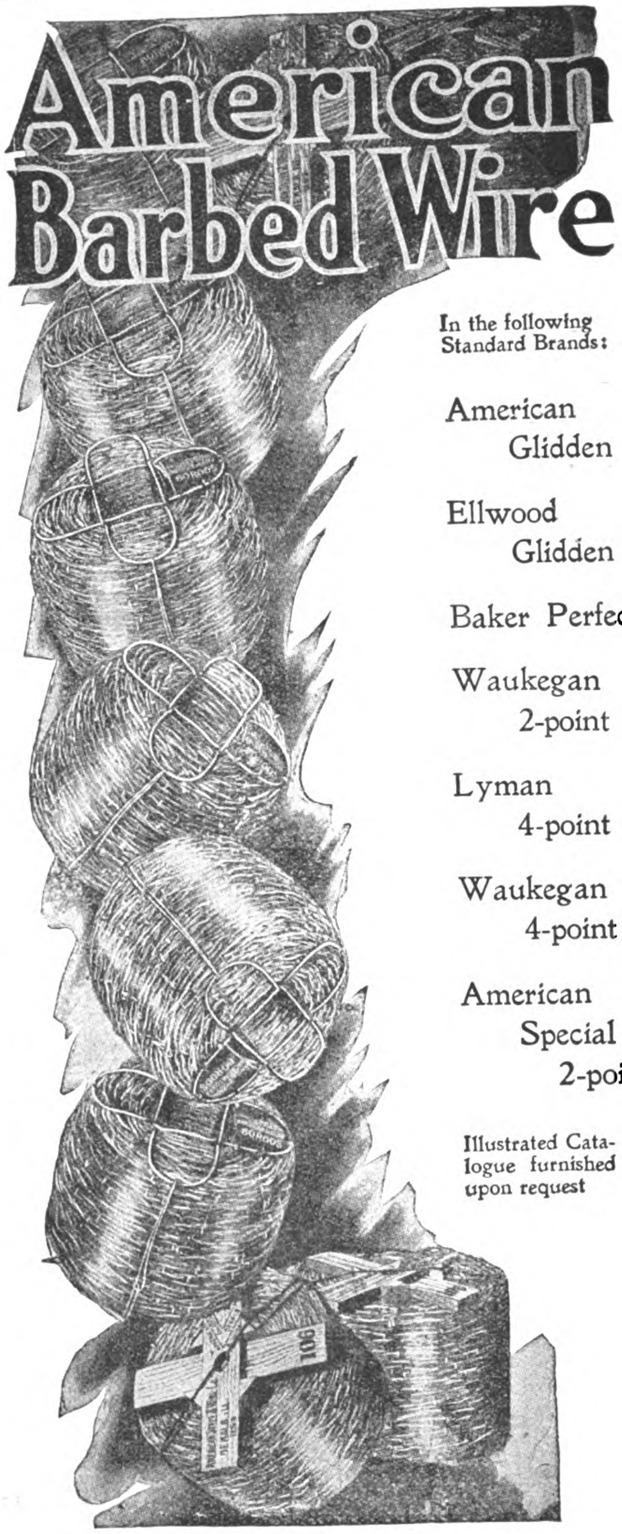


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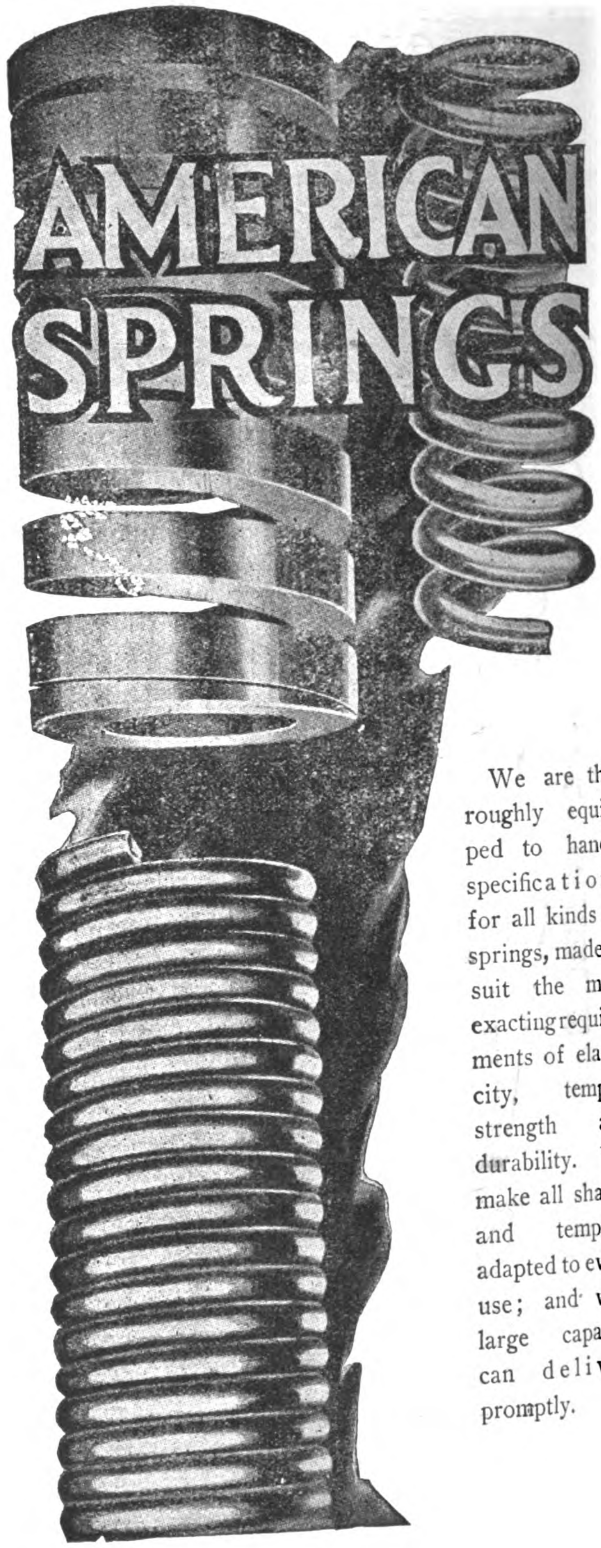


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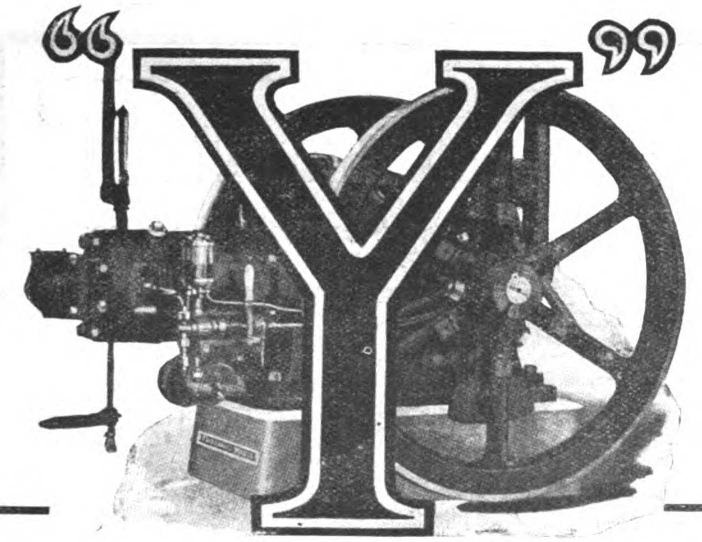

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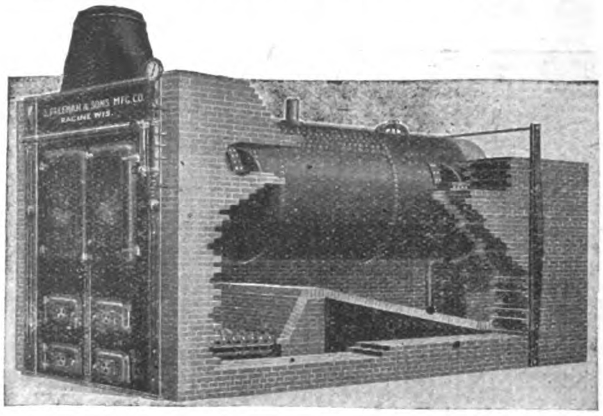


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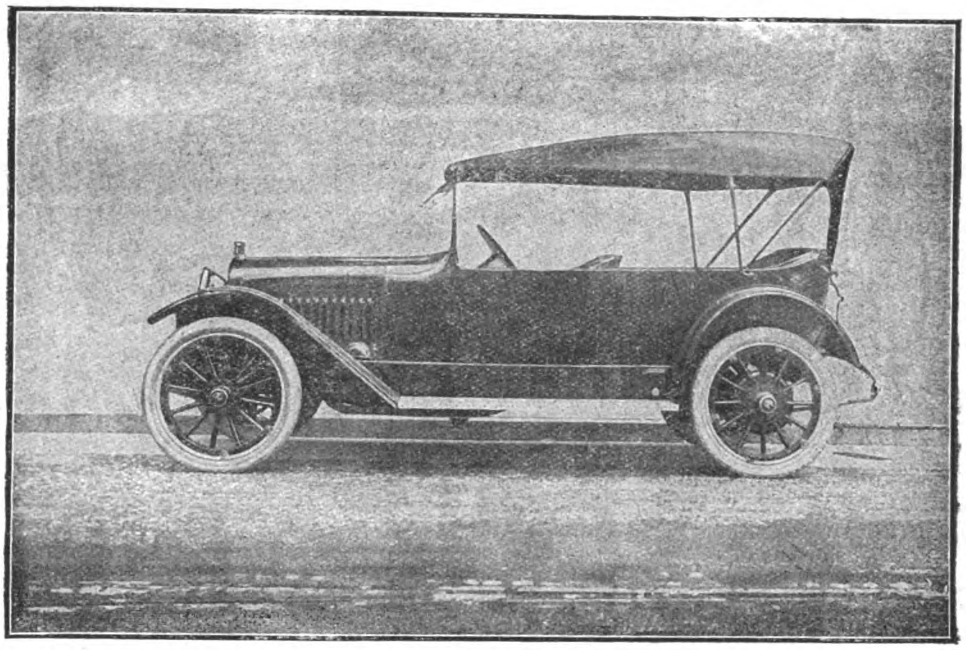

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事半工倍物美

左圖爲亞美利根牌之活擺鑽機鑽三吋之闊十四吋深之實體鋼質每分鐘可轉九十次速率之轉柱用以鑽物僅需添進萬分之七十二吋

亞美利根牌之活擺鑽機並無弱點因材料精美且建造黏實故生力頗大

美國各大工廠均奉亞美利根牌爲活擺鑽機之模範故購用之且不待商酌而逕源源定購其效力之大可想而知矣

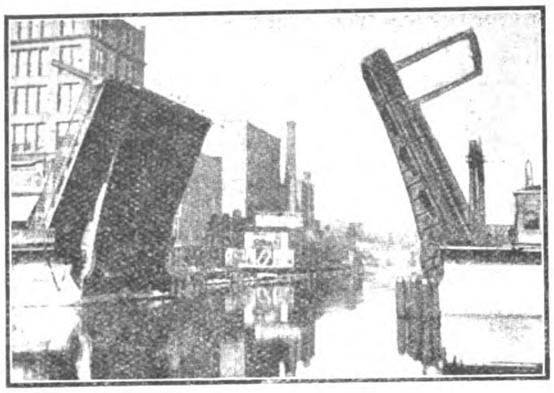
諸君若欲知最近時之活擺鑽可來信示知以便將說明書奉贈

本公司亦造車床刨機具形機鑽機等物

本公司開設美國辛辛耐的省

# 美國屈氏吊橋公司廣告

The Strauss Bascule Bridge Co.



本公司專造搖汽筒空樞吊橋及直接升降各橋專爲康莊鐵道以及可航行之海道而立計全地球所造者不下一百五十具最長最大之跳開橋其建築仿法悉本于司屈氏之圖樣即小而至于居家之過街及裝飾品用之物亦取法于司屈氏

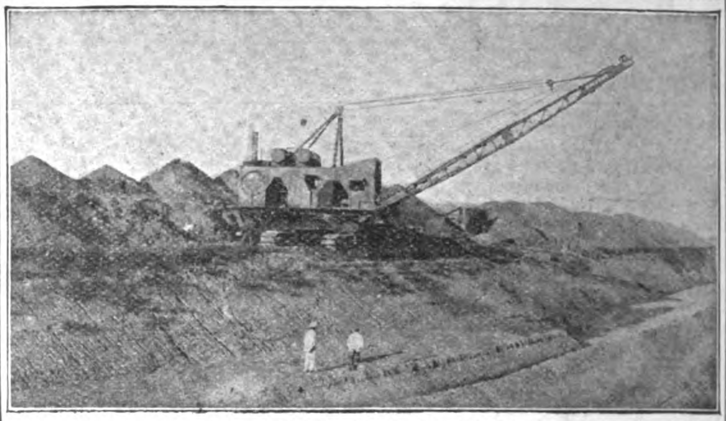
諸君若欲照片樣本可來函索取無不寄奉

本公司總行開設美國芝加可省南米西干通路第一百另四號

本公司擬在遠東聘請代表

# 白賽老氏公司廣告

Bucyrus Dragline Excavators & Co.



諸君欲關水利請用白賽老氏之聯結鏈挖鑿機

此圖爲第十四號白賽老氏聯結鏈挖鑿機有六十呎之機杠及二立方碼之桶挖鑿俄國高加索司之老河者細閱此圖則該機乃裝置於牽拉機上以便運動此機之生火力用油用柴均可

此機爲俄政府所有之物

白賽老氏聯結鏈挖鑿機專備挖掘陰溝疏通河道裝卸礦苗存積物及開金礦裝載石子建造世界各處之鐵道

是項機器用汽用電用油均可使其運動

本公司亦造各種大小之汽鏟電鏟挖泥機及聯結鏈挖鑿機器

總公司開設美活司考信

分公司　英國韋思名司得　暹羅國及馬來聯邦

# 費耳庭栢來脫公司廣告

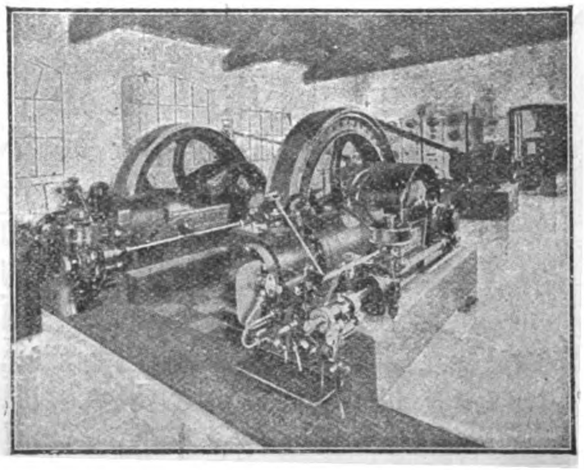
Fielding & Platt, Ld.

本公司創始於一千八百六十八年

本公司亦造生油汽機半狄色耳平形式之機器其用油與狄色耳同

自十一匹輪盤馬力至一百六十四輪盤馬力

此項機器無庸水注入



此爲電氣房內裝有費耳庭吸力煤氣汽機及生油汽機兩相並立之圖

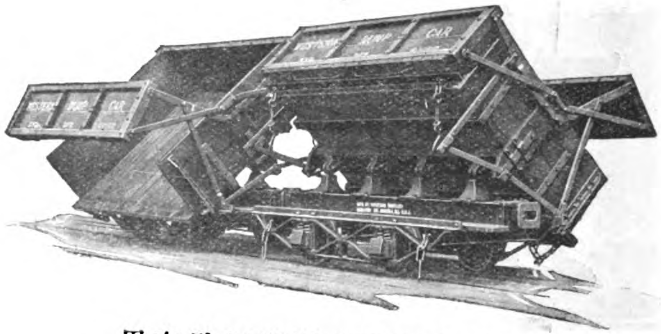
製造吸力煤氣汽機及全副機件用白煤或焦煤均可業於此者不下數千人汽機自十一匹輪盤馬力至三百匹輪盤馬力

本公司亦造橋樑底標量制器俱單輪及第三軸枕平衡曲拐

# 西方輪軸剷物機公司廣告

WESTERN WHEELED SCRAPER COMPANY

此爲六立方碼之車以驢兩頭拖拉在污泥天工作之圖



此圖爲西方五碼卸貨車爲人所重視曾經試驗實有效用

機器較省於人工此人所共知也本公司之西方卸貨車可省却人工不少可爲諸君省費諸君曷勿試用之

諸君欲興築土工以及挖鑿等事若欲事半功倍除非用西方卸貨車因價廉而物美故也且該卸貨車可隨工作之大小而製成之自半立方碼至三十方碼○其大號者卽以空氣卸貨爲建造鐵道最有價值之機器開鑿巴拿馬運河用此機器有九百輛之多○其小號者則專以卸輕巧之貨物用小汽機拖拉甚爲便宜卽用牛馬亦較一工人卸貨快速易辦也上圖爲本公司之一碼半西方車正在卸貨以驢子拖拉一千二百呎

西方卸貨車全球著名亦爲全球所購用諸君若欲知詳細請來信索取圖樣可也

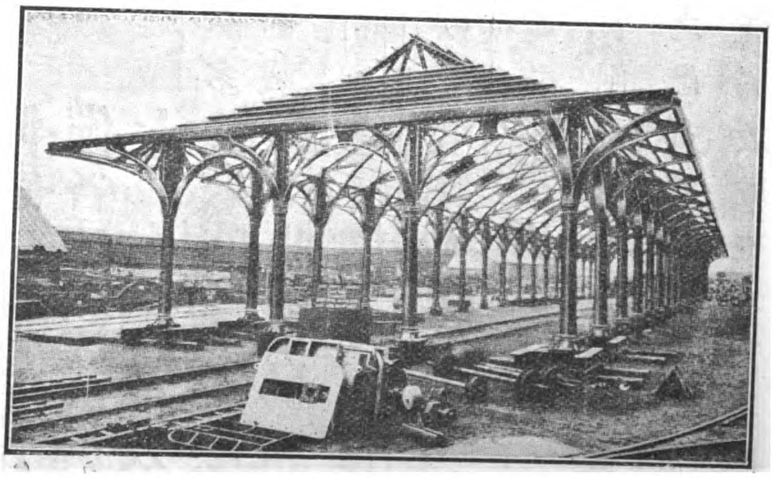
本公司開設美國伊立省奧列羅拿



# 海特雷脫生公司廣告

Head, Wrightson & Co., Ltd.

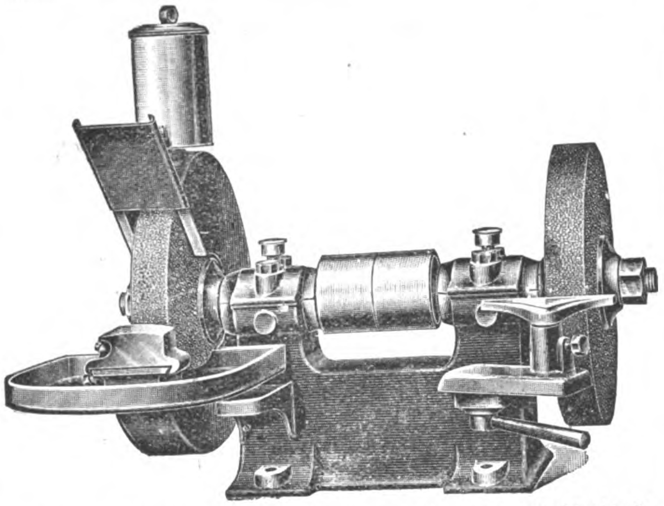
本公司有大廠三所專造煤礦場及各礦場所用之物及裝煤船貨車起重機風箱冶汽爐船塢門等橋坑總齒輪鋼質貨車



屋頂煙筒油池之類此圖乃香港之車站其屋頂爲本公司所建造本公司爲英國大廠之一每年出鑄件十萬噸出機器一萬七千噸且爲中國印度日本包辦各項工作

## 倫敦愛茂來工廠有限公司廣告

The London Emery Works Co., Ltd.



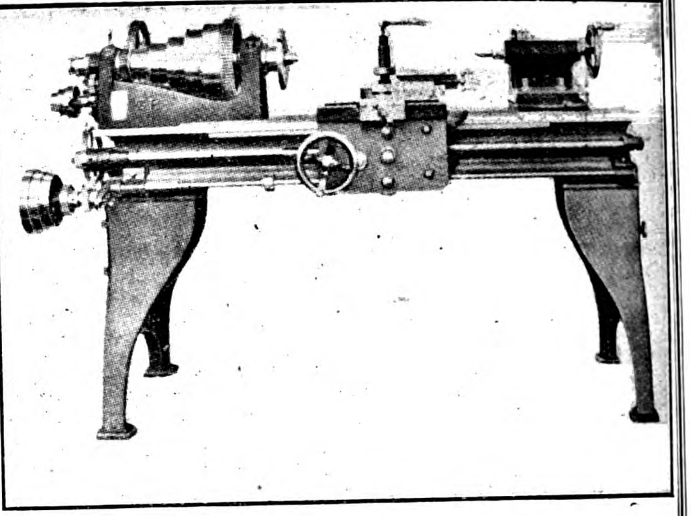
此圖爲雙頭愛茂來機式磨機其全體均爲生鐵所製軟鋼磨心直徑一寸其軸枕均爲白色金屬類磨心傍有緊鬆之滑車排於左者可磨潮濕之物因配有水槽碗架蓋頭及墜俱右邊則配有普通磨件尚有最好質地之地球牌愛茂來輪盤兩俱大十二吋厚一吋半

此項磨機亦可大十四吋厚二吋及大十六吋厚二吋之輪盤

若欲知圖樣或說明書可來函索取

工廠開設英京倫敦土丁南英雄工廠

## 用電氣以節耗費



電氣一物利用甚溥用以裝修各項機器非特工作較人力爲速而耗費亦可節省因其出貨多而成事易也凡各機器廠欲裝置電氣馬托或鑽頭磨刀機無論活動與否均可使之流利活潑所需電力或交流或直流及電鎊之多寡均當隨意裝配賜顧諸君幸垂鑒焉

德國蜀赫廠啓

Schuchardt & Schütte

## 勒克洛炸藥

又名勃辣司丁泡特係**開山開礦用**

**最大爆力之炸藥**其質共有二類一硬質一流質兩種未參合時分裝二處決無炸裂之患并無須多費存放在火藥棧倉內祇置放乾爽地方不論何處均極相宜此藥參合後**較之別種炸藥更爲穩當**藥粉裝法用一布捲筒對徑六分或至二寸長六寸半或至八寸爲度卽可應用製造廠林洛泡特公司在美國紐約華爾街一百零六號

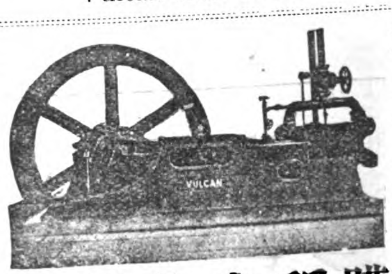
Rendrock Powder Co.

美國舊金山

## 瓦爾根製冰機器廠

Vulcan Iron Works

圖爲製冰機之一種



**本廠專造各式製冰機器運銷各地蒙購辦諸君謬加推譽稱爲靈便合用本廠自當精益求精以期仰副　雅意現在製備各種新式機器或大或小花樣俱全如**花色繁多不及備載**欲取閱樣本函索卽奉特此佈告**

電碼 "Vulcan" San Francisco

# 交通銀行廣告

## BANK OF COMMUNICATIONS

本銀行資本一千萬兩專辦銀行一切交易各項存款無論定期活期其利息均照議給付并滙劃中國各處以及押款等事

總行開設**北京**

分行**東三省** 牛莊 奉天 長春 吉林 哈爾濱 遼陽 蓋平 孫家台 鐵嶺 錦縣 新民屯

**直隸** 北京 天津 張家口 保定 海甸 順德 唐山 北通州 豐鎮 勝芳 石家莊

**山西** 大同 陽高

**陝西** 澠池

**山東** 濟南 濟寧 棗莊 烟台 德州

**河南** 開封 焦作 周家口 漯河 道口 彰德 鄭州 信陽州 洛陽 鄱陽

**江蘇** 上海 蘇州 無錫 鎮江 揚州 浦口 板浦 徐州 清江浦

**浙江** 杭州 寧波

**安徽** 蕪湖 蚌埠

**江西** 九江

**湖北** 漢口 宜昌 沙市

**湖南** 常沙 益陽 衡州 湘潭 常德 寶慶

**廣東** 廣東

特別處新列后 **熱河** **歸化** **香港** **新加坡** **大連** 等等地方

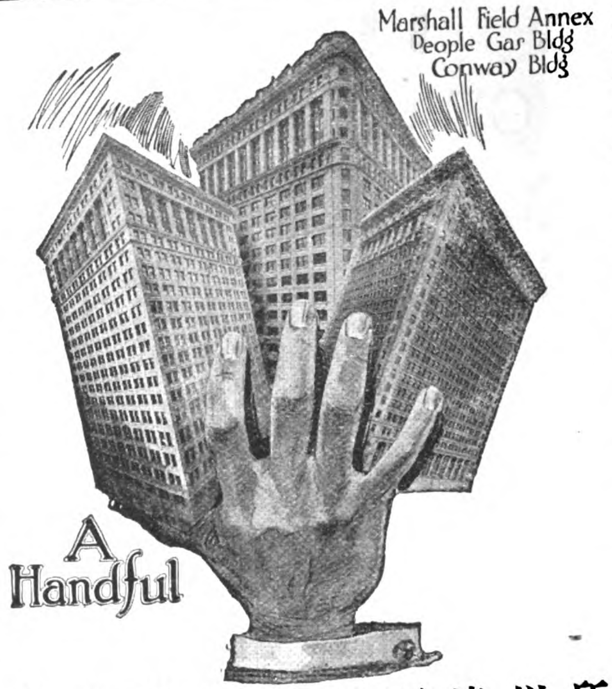
總經理 張思仁 史拉克

副經理 徐寶琪 仝啓

# 西北展張鐵片公司廣告

North Western Expanded Metal Co.

本公司製造哪白兒展張鉄片專爲近世築造之鋼屋內部所用以上之圖爲美國芝高哥城最大最新近之大廈其內部及底盤均爲本公司所製之哪白兒展張鐵片條板所造蓋以之作底盤其價甚廉以之作墻則耐久因哪白兒牌之條板爲惟一之建築品且爲全球所公認推爲內外建築特別品之標準若用於熱帶處所用以作墻及天花板底則更相宜蓋其性耐久而

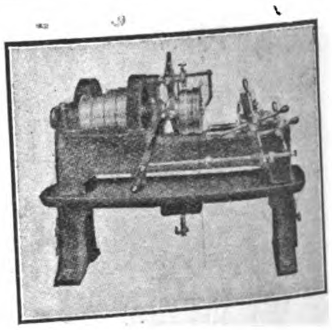



不曲且不笨重易於運輸且避水患此項展張鉄片條板業經由五洲各大建築家實地試驗防熱避風火暴雨等危險實爲建築家所不可少之物

今敬告建築家若欲建造房屋無論何時何地何物先請察驗哪白兒牌之展張鉄片條板本公司備有說明書請來函索取可也

# 英國約書亞西潑有限公司

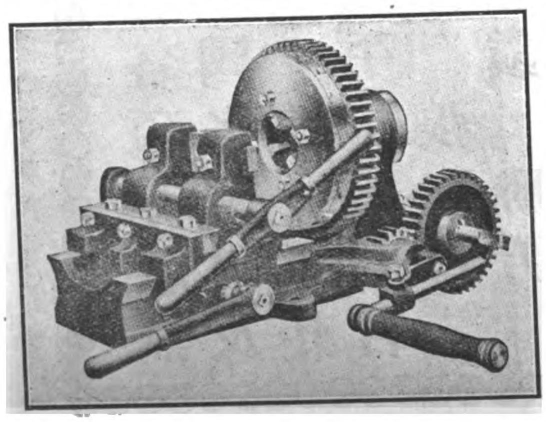
Joshua Heap & Co., Ltd.



本公司專造製螺絲機器此圖爲二吋單頭自動製螺絲機器爲多頭製螺絲機器之一曾註册立案爲近世最省工力之機器備有柄頭及自動開機連於螺形頭上及自動關機并配製螺絲各俱無不靈動

本公司所出之註册鋼質螺絲模型爲市上所罕有蓋質地堅實螺絲板易於拆卸且全體皆爲良工所製並無發條或輕脆之料作摻雜其間

此圖爲改良通用之製螺絲機器可製螺絲管彎曲短小之件如對徑二吋大小之物或釘梢對徑二吋半等物均可製造近年來銷數已達二千五百架其大者如對徑八吋之物亦可製造此項機器電力與人力均適用若欲知詳細請來函索取目錄爲禱



# 橫濱正金銀行廣告

Yokohama Specie Bank, Limited

本銀行創設於紀元一千八百八十年總行開設日本橫濱資本日洋四千八百萬元收足資本日洋三千萬元公積日洋一千八百五十萬元英京倫敦各銀行如倫敦及司密夫聯合銀行倫敦聯會股票銀行及派耳銀行均爲本行之經理今將分行及經理處開列如下

安東縣　孟買　加耳谷塔　長春　大連　檀香山　香港　漢口　神戶　倫敦　來因司　遼陽　奉天　紐約　牛莊　長崎　大坂　旅順　北京　舊金山　東京　鐵嶺　天津　青島　哈爾濱　勞山及耳司

上海亦設分行　活支及定期存款利息均有銀兩洋圓均聽尊便　匯票可通日本高麗臺灣及中國各重要地方幷歐洲印度美洲各通商處所并辦理各種銀行所辦各事宜

經理科大麥啟

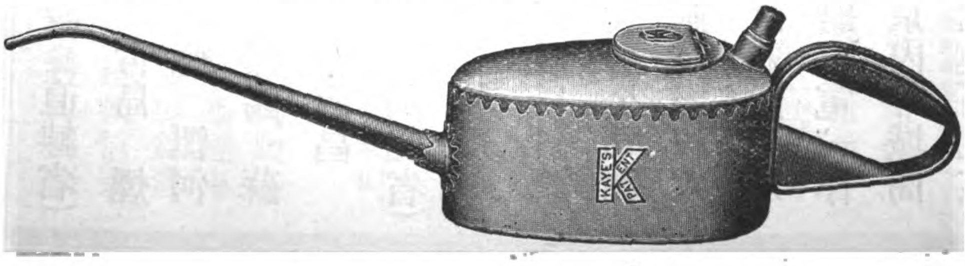


# 克耶鎖鍵工廠露佈

Joseph Kaye & Sons Ltd., Lock Works, Leeds.

本公廠專製車門鎖鍵滑門門門門精巧門鐶門鎖及門門等以應各種用品且製造鋸齒形無縫之純鋼油管承經註册專賣爲英國之出品供應於英國水軍者不下六萬只大西鐵路大北鐵路蘭克省及雅克省間之鐵路倫敦及西南鐵路南斐洲及印度國有之鐵路均用此純鋼油管盛油也倘承不棄請來信定購是幸

工廠開設於英國离池



# 中國銀行廣告

THE BANK OF CHINA

本銀行於民國元年奉　政府命令設立兩年以來信用昭著總行設於（北京）分設（直隸省）天津　保定　邢台　灤縣　唐山　滄縣　濮陽　邢縣　磁州（山東省）濟南　青島　煙台　藤縣　濟寧　周村　惠民　益都　臨淸　臨沂（河南省）開封　周口　彰德　漯河　信陽　道口（山西省）太原　運城　歸化城（江蘇省）上海　南京　鎭江　無錫　蘇州　揚州　清江浦（安徽省）安慶　蕪湖　大通　徐州　下關　蚌埠（江西省）南昌（福建省）福州　南台（浙江省）杭州　寧波　蘭谿　嘉興　湖州　溫州　紹興（湖北省）漢口　沙市　宜昌（廣東省）廣州　江門　汕頭　瓊州　韶州　潮州（東三省）奉天　營口　安東　錦縣　大連　鐵嶺　長春　吉林　哈爾濱　齊齊哈爾　等處享有發行鈔票代理國庫之特權並辦理匯兌買賣生金銀往來存款定期存款抵押放款貼現放款代各公司商號或個人收取本埠及他埠票據款項保存有價證劵及一切貴重物件至匯兌一項無論通商大埠蕞爾遐陬凡本行已經分設者均屬便利所收匯費無不格外克己以副光顧諸君之雅意再本行發行鈔票準備充足凡完糧納稅發俸放餉官款出納商民交易以及應付鐵路輪船郵電一律通用現爲便利商民行使本行鈔票起見特於北通縣（海甸鎭）設立兌換所並於本京內外城商店繁盛之區委託殷實商號代兌本行鈔票如有多數鈔票請逕向（西交民巷）本行兌換可也茲將代理兌換處所開列於下

▲▲注意▼▼（東四牌樓）寶源銀號（安定門）會源銀號（東珠市口）隆茂源銀號（騾馬市）恆裕金店（西河沿）仁昌金店（後門）永通誠布店（新街口）益泰成布店（西單牌樓）和順公布店（後門）平易銀號（西單牌樓）益大銀號（又珠寶市爐房十家）恆盛銀號　同元祥爐房　德順號　聚起號　祥瑞興記　源豐號　復聚號　萬興號　全聚厚記　聚盛源爐房　再本總行營業時間開列如下　陽曆四月一日起至九月底止每日上午九點鐘起至下午四點鐘止由陽曆十月一日起至三月底止每日上午十點鐘起至下午四點鐘止

# 英國海來司溫鋼公司廣告

Halesowen Steel Co., Ltd.

本公司專造鋼質砌機有HS牌號均爲自動機器脫力脫車床等等所製成若欲定做其尺寸不誤大小隨便現下存貨長自九呎至十呎若圓形或六角形或方形均可製造幷製各種輪軸不拘大小長短均可定造若承賜顧定購照式製成無不完美特別本公司每月出貨有二萬之數

本公司開設英國海來司溫

# 美國反白司公司廣告

Fairbanks-Morse Railway Motor Cars

本公司專造鐵路材料煤油馬達車手車推車自行車暨管煤棧轉盤活動橋抽機用煤油或礦蠟油或火酒均可

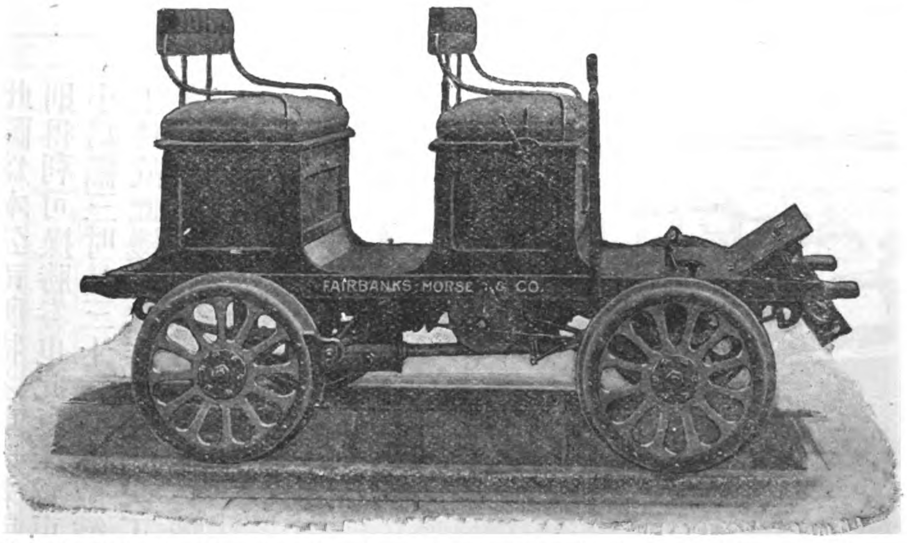
幷製軌道規水平尺牛欄軌道器俱以及各種材料

以上所列各種其製造之原料爲美國及他國幷各植民地之鐵道取之爲標準者也

請來索目錄第九五六RS

本公司開設美國芝加哥

經理處　上海信亨機器洋行　香港天祥洋行　小呂宋太平洋商務洋行　横浜安德烈哲治洋行　加力革培克列司督洋行




反白司煤油馬達車爲查閱鐵軌之用鐵路人員乘坐最爲合宜蓋此車駕駛甚易車架爲鋼質所製容四人長可隨意三十六吋或過此呎吋亦可

本公司製造煤油馬達車全部專爲查閱鐵軌信號分段以及橋規

# 華愛德公司

本公司代聘全球著名工程師專包辦並經理各種工程兼各式工程物料已歷有年所成效昭著爲各國官商各界所推許如蒙 惠顧請向下列各經理處接洽可也

美國紐約匯業處四十三至四十九號

英國倫敦克洛克路九號

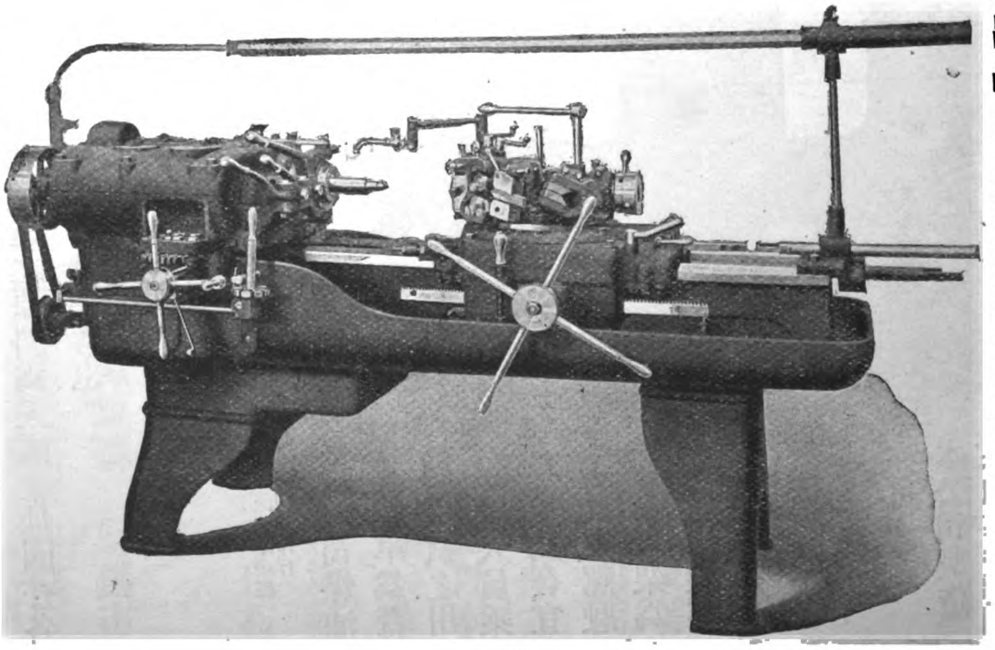
J. G. White & Company



# 羣司蘭姆生機器公司

Jones & Lamson Machine Company.

此圖爲本公司所特之車床若能習學此機完美則得利可操勝劵也此車床爲車塔平面機其大小爲闊三吋長三十六吋專做鐵條柄軸等各種工件故此機及其作用 能使工人幷機器加增出品 因用是項機器不必購用價值高貴之



小另件配製工作也

總之製造此種車床之目的 即費一文錢得一文錢之利於購者有莫大之利益

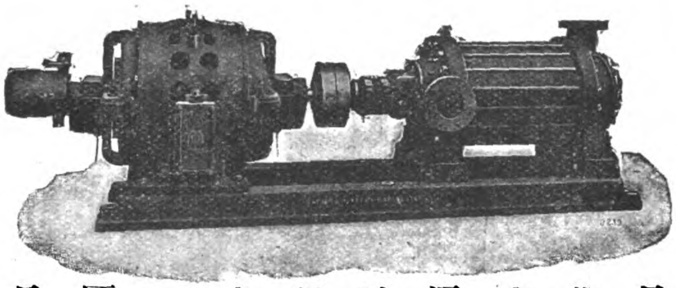
欲知詳細章程請來函索取不費郵資

本公司開設 美國活忙脫省司不林飛而特 英國倫敦維多利亞街九七號

# 麥脫拍來脫輪盤抽機公司

Mather & Platt, Ltd. Turbine Pumps.

輪盤抽機爲本公司所發明且已有四十年之經驗故所出之抽機愈製愈精購用者無不樂用且無論高低均適於用此項抽機之動力或由馬達小輪汽輪速率之汽機或皮帶或繩索之力均可抽動且一經試用則耐久非常不必再行查驗本公司所出之抽機通行於各處極多行試多年從未拆卸開視因本公司所製造之抽機美備洽意也此項抽機有自動壓勻之力裝製齊備且可增減機內之空穴價格便宜若欲購用而知詳細章程者請來函索取目錄上圖爲六筒之抽機　頭長六百十二尺每分鐘可吸六百五十加侖每分鐘可轉一千四百五十次則所動之力乃藉馬達也




# 交通部吉長鐵路客車時刻表

Kirin-Changchun Railway.

民國五年七月一日改訂

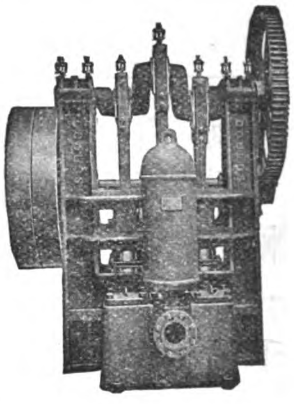
## 由長春頭道溝至吉林（下行車）

| 站名 | | 第一次 客車 | 第三次 客貨車 |
|---|---|---|---|
| 頭道溝 | 開 | 上午七·三〇 | 下午二·五〇 |
| 長春 | 到 | 上午七·三八 | 下午二·五八 |
| 長春 | 開 | 上午七·四二 | 下午三·〇五 |
| 卡倫 | 到 | 上午八·一三 | 下午三·二九 |
| 卡倫 | 開 | 上午八·一四 | 下午三·四二 |
| 飲馬河 | 到 | 上午八·四六 | 下午四·一五 |
| 飲馬河 | 開 | 上午八·四八 | 下午四·一八 |
| 下九臺 | 到 | 上午九·〇三 | 下午四·三三 |
| 下九臺 | 開 | 上午九·〇四 | 下午四·三八 |
| 營城子 | 到 | 上午九·一六 | 下午四·五〇 |
| 營城子 | 開 | 上午九·一八 | 下午四·五三 |
| 土們嶺 | 到 | 上午九·四〇 | 下午五·一八 |
| 土們嶺 | 開 | 上午九·五〇 | 下午五·二六 |
| 趙家店 | 到 | | |
| 趙家店 | 開 | 上午一〇·一〇 | 下午五·四五 |
| 樺皮廠 | 到 | 上午一〇·三一 | 下午六·〇九 |
| 樺皮廠 | 開 | 上午一〇·三三 | 下午六·一四 |
| 孤店子 | 到 | 上午一〇·四六 | 下午六·三〇 |
| 孤店子 | 開 | 上午一〇·四七 | 下午六·三三 |
| 九站 | 到 | 上午一一·〇三 | 下午六·四九 |
| 九站 | 開 | 上午一一·〇五 | 下午六·五三 |
| 吉林 | 到 | 上午一一·二五 | 下午七·一五 |

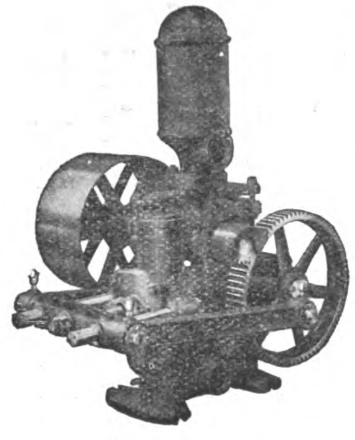
## 由吉林至長春頭道溝（上行車）

| 站名 | | 第四次 客貨車 | 第二次 客車 |
|---|---|---|---|
| 吉林 | 開 | 上午六·二〇 | 下午二·一五 |
| 九站 | 到 | 上午六·四二 | 下午二·三五 |
| 九站 | 開 | 上午六·四八 | 下午二·三七 |
| 孤店子 | 到 | 上午七·〇三 | 下午二·五三 |
| 孤店子 | 開 | 上午七·〇五 | 下午二·五四 |
| 樺皮廠 | 到 | 上午七·二三 | 下午二·〇七 |
| 樺皮廠 | 開 | 上午七·三〇 | 下午三·〇九 |
| 趙家店 | 到 | | |
| 趙家店 | 開 | 上午七·五八 | 下午三·三二 |
| 土們嶺 | 到 | 上午八·一六 | 下午三·五〇 |
| 土們嶺 | 開 | 上午八·二四 | 下午三·五六 |
| 營城子 | 到 | 上午八·四八 | 下午四·一八 |
| 營城子 | 開 | 上午八·五〇 | 下午四·二〇 |
| 下九臺 | 到 | 上午九·〇三 | 下午四·三三 |
| 下九臺 | 開 | 上午九·〇五 | 下午四·三四 |
| 飲馬河 | 到 | 上午九·二〇 | 下午四·四八 |
| 飲馬河 | 開 | 上午九·二三 | 下午四·五〇 |
| 卡倫 | 到 | 上午九·五五 | 下午五·一三 |
| 卡倫 | 開 | 上午九·五七 | 下午五·二四 |
| 長春 | 到 | 上午一〇·三一 | 下午五·五三 |
| 長春 | 開 | 上午一〇·三七 | 下午六·〇〇 |
| 頭道溝 | 到 | 上午一〇·四七 | 下午六·一〇 |

# 美國顧爾機器廠



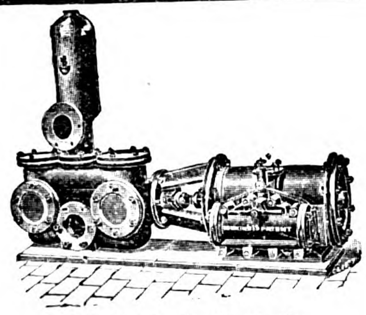
本廠開設已久爲中外各國所馳名專造各種大小抽水幫浦其三角抽水機爲尋常各廠家所最爲合用之機尙有如保險公司所用最爲靈巧便利之轉動抽水機此項機器甚爲輕便備爲消防之用尤爲合宜故凡保險公司俱有備置因其得輕便之利也其餘如自來水廠船廠各機器廠並礦井內外所應用之大小各式抽水機器無不俱全本廠係專造各項抽水幫浦故比他家式樣更多製造尤爲完善凡中外各國之賜顧者悉知本廠機件之精良造具之美備也欲知詳細情形請移玉至本行接洽可也



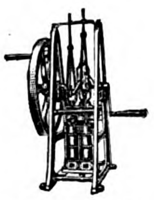
GOULDS PUMPS

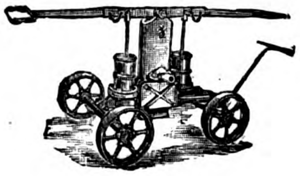
中國經售處上海圓明園路四號協隆慎昌洋行

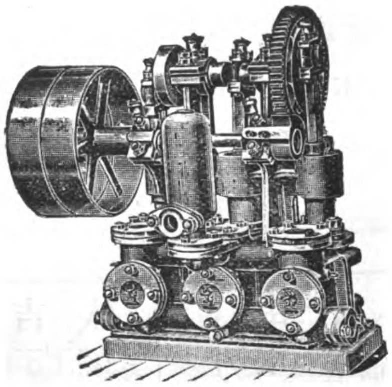
The Goulds Manufacturing Co.

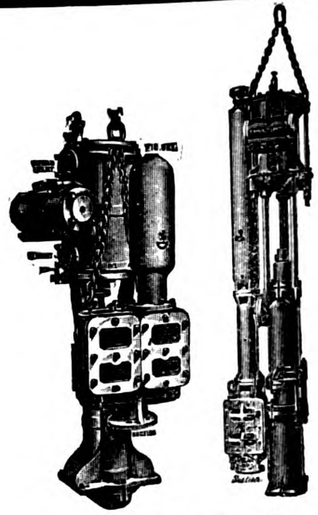


普通汽力抽水機









下垂抽水機
煤船煤礦所用

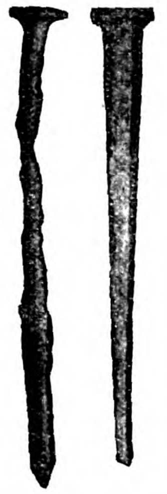
本公司製造各種抽水機專備工商各界採用各式全備不論使用何項動力如人工汽機皮帶風車水電各力之類均能適用如蒙函詢卽將東方目錄寄奉

英國華亨頓城
伊凡斯公司謹啓

Joseph Evans & Sons

# 美國展輾冶鐵工廠廣告

The American Rolling Mill Co.

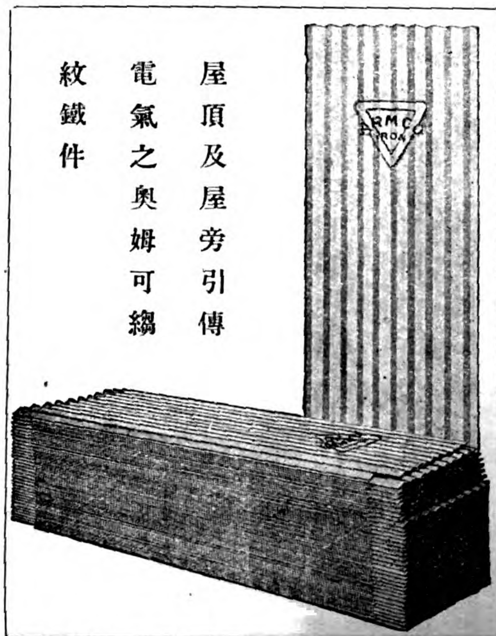


新舊兩鐵釘之比較方形熟鐵釘可用三十八年鋼鐵釘可用十一年

Agents for China
Chinese American Co.
1A Jinkee Road, Shanghai

ARMCO IRON

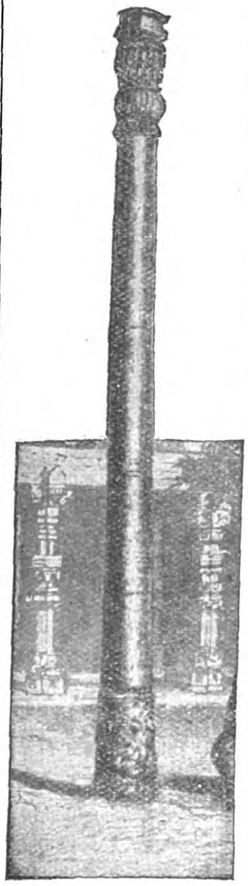
Agents for Philippine Islands
American Hardware &
Plumbing Co.
Manila, P. I.



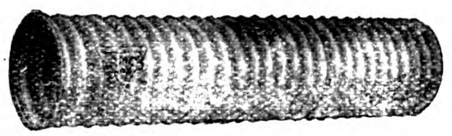

屋頂及屋旁引傳電氣之奥姆可縐紋鐵件

本工廠稟准國家立案爲萬國鐵廠所推許因所鑄之奥姆可鐵潔淨耐用夫鐵之爲物厥用甚大盡人皆知唯提煉不淨銹爛極易蓋異性之金類雜在一處一受空氣之潮濕即發動電流化合力而銹爛乃起與電瓶同一理也故雜質去淨銹生自緩又製造各鐵條鐵板時若質地不勻及有微孔等弊亦爲生銹之原本公司製煉各種鐵器提煉既極純淨製造又極精美稍有成分不足體質不淨者均摒棄重行提煉終以試驗及格爲度絕無苟且之弊本公司之宗旨專務精美不競競以出貨之多爲勝也圖中所載之鐵柱現在印度台里省係鑄於二千八百年以前考其所以能歷如許之久者亦不過質地純淨而已本公司即本此意并經各專門冶金工師悉心研究得完美之製造方法各界賜顧者請認明三角式商標決不致誤

本廠開設美國哇哈哇省
中國上海經理華美公司仁記路一號
得律風一千九百七十一號

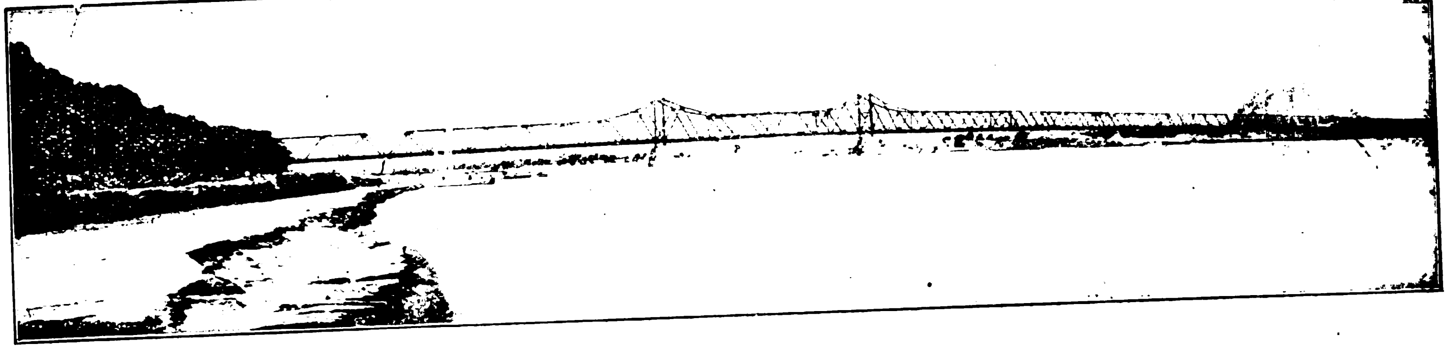


此圖乃印度國特而希之大鐵柱建於紀元前九百年爲純鐵所鑄之柱



奥姆可縐紋鐵溝大道鐵路陰溝最適用貨眞耐用欲知目錄請來信索取可也

# 津浦鐵路



## 津浦鐵路局改訂特別通車時刻廣告

本路特別通車上下開到時刻現經改訂與京奉膠濟滬甯等路客車上下銜接自本年十二月一日實行玆將改訂時刻暨各路銜接時刻開列如左

### 下行車

京奉路由瀋陽來之通車星期六日上午十鐘三十五分到天津東站
本路特別通車星期六日上午十一鐘二十分由天津東站開
京奉路由北京來之快車每日上午十一鐘二十五分到天津總站
本路特別通車星期六日上午十一鐘四十八分由天津總站開
膠濟路由青島來之快車每日下午五鐘五十九分到濟南
本路特別通車星期六日下午八鐘十二分由濟南開星期日下午一鐘十三分到浦口
滬甯路開往上海之快車星期日下午二鐘三十五分由南京開是日下午八鐘二十分到上海

### 上行車

滬甯路快車星期一日上午七鐘十分由上海開十二鐘三十分到南京
本路特別通車星期一日下午一鐘四十五分由浦口開星期二日上午六鐘四十分到濟南
膠濟路開往青島之快車每日上午八鐘由濟南開
本路特別通車星期二日下午二鐘三十三分到天津總站二鐘五十三分到天津東站
京奉路開往北京之快車每日下午三鐘四十五分由天津東站開其開往瀋陽之通車星期三日上午一鐘二十五分由天津東站開

### 特別注意

客商星期六日由京來津換乘本路特別通車南行者務請在總站過車勿到東站以免趕車不及
再客商星期六日上午八鐘三十分由北京起程星期日下午八鐘二十分卽到上海其由上海北行者星期一日上午七鐘十分起程星期二日下午六鐘五十五分卽到北京每次需時不足三十六鐘洵屬最捷之徑順此附告

Chinese Government Railways—Tientsin-Pukow Line

Hongkong & Whampoa Dock Co., Ltd.

## 香港黃埔船澳有限公司廣告

本公司承接製造各種機器鐵路火車橋梁河海明暗輪船拖船淺水火船載客運貨大小快捷毛打輪船舉凡一切水陸起重器機爐鑊鎔鑄銅鐵器具電鍍等等工程並常有大單銅鐵螺絲角鐵鋼板鐵板等料躉賣加以本公司置有大石澳六所旱排二座以便大小船艦入澳之用洵鉅製也

諸君光顧凡有船隻裝修無論大小工程莫不應期完備庶不妄費時日又且工精料美價亦相宜如蒙惠顧請問總司理人 R. M. DYER可也

茲將各澳地址尺寸開列於後

| 澳名 | 澳底長 | 澳口闊 | 水深 |
|---|---|---|---|
| 九龍第一號澳 | 七百尺 | 面八十六尺 底七十尺 | 三十尺 |
| 九龍第二號澳 | 三百七十一尺 | 七十四尺 | 十八尺六寸 |
| 九龍第三號澳 | 二百六十四尺 | 四十九尺三寸 | 十四尺 |
| 九龍第一號旱排 | 二百四十尺 | 六十尺 | 十四尺 |
| 九龍第二號旱排 | 二百二十尺 | 六十尺 | 十二尺 |
| 深水浦澳 | 四百六十六尺 | 八十五尺六寸 | 二十尺 |
| 香港仔第一號澳 | 四百三十尺 | 八十四尺 | 二十三尺 |
| 香港仔第二號澳 | 三百三十三尺 | 六十四尺 | 十六尺 |

本公司通電處乃用 MANIFESTO HONGKONG

香港寫字樓電話第二十號

本廠寫字樓電話第十三號K

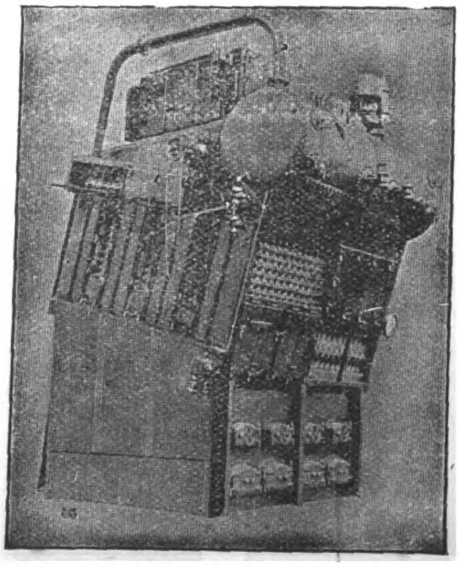
呂宋代理處 FINDLAY & CO., MANILA, P. I.

## 拔柏葛魏闍司有限公司

Babcock & Wilcox, Ltd.

## 製造特別水筒鍋鑪

本公司陸地所用之鍋爐與加增熱力機器及最新自行燃煤之帶鍊機器係屬相連用之於電燈紡織麵粉造紙織呢兵工造幣礦務水泥自來水等廠最爲合宜



航海用之汽鍋圖

本公司專造加增熱力機器自行燃煤之帶鍊機器蓄熱機器電力起重機器起卸煤之機器鋼質烟囱及輪船軍艦所用之鍋爐等

公司之中國總辦事處在上海四川路一百零三號

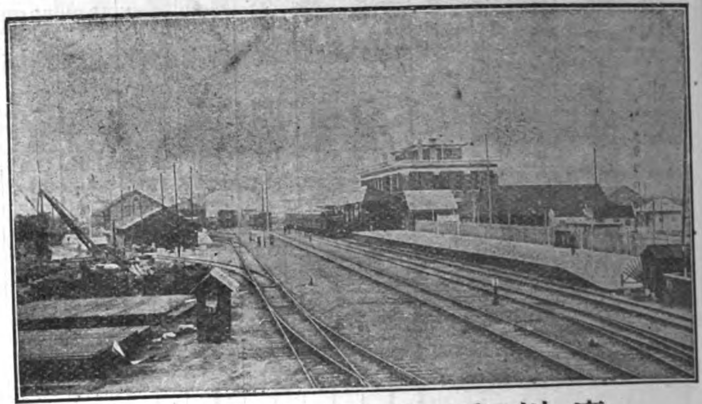
製造廠設在英德法美等國

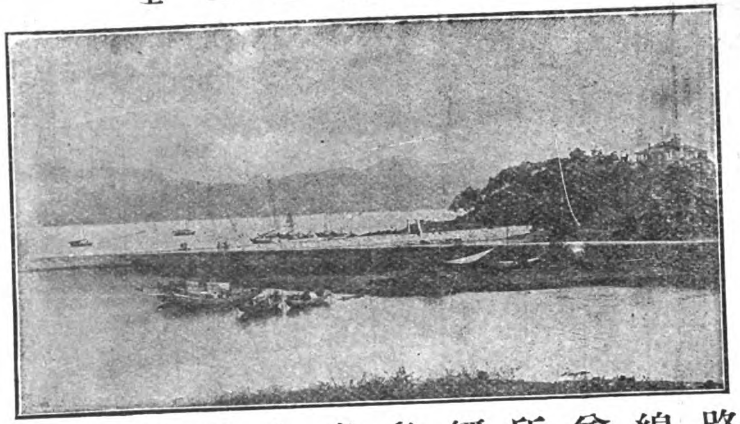
# 廣九鐵路

下列乃華段圖景該段八十九英里

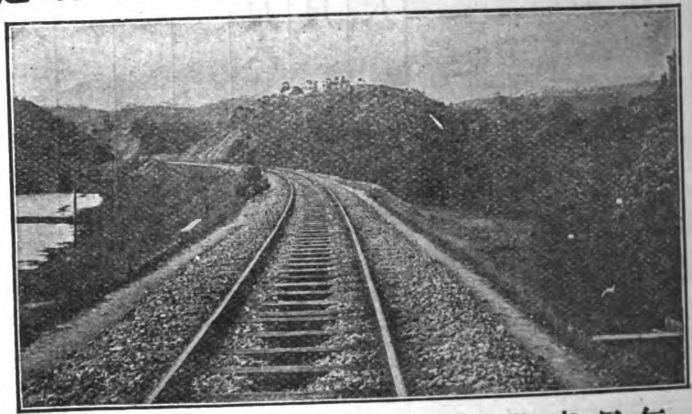
Canton-Kowloon Railway

下列乃英段圖景該段二十二英里

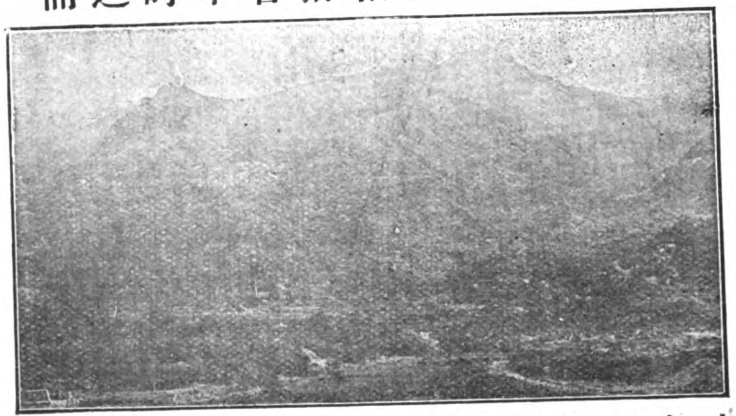




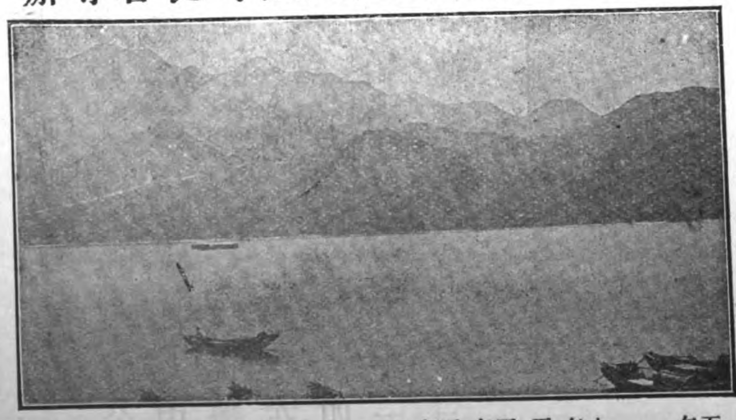
廣州香港間最捷最廉之路線所兼經各處之景緻



每日省港有直通快車貳次來往並有西膳茶點以備搭客不時之需



富商遊客搭快車可即日來回在港在省各有四點餘鐘之久儘可從容專辦



謹將本年夏天時刻表開列於下

香港開
上午六點五十五分快車
上午十一點十五分
上午十二點五十五分

廣東到
上午十點四十分快車
下午六點十分
上午四點三十分快車

廣東開
下午七點快車
上午八點三十分
上午十二點快車
下午四點二十分快車

香港到
上午十點三十分快車
下午四點十四分
下午三點五十二分快車
下午七點五十二分快車

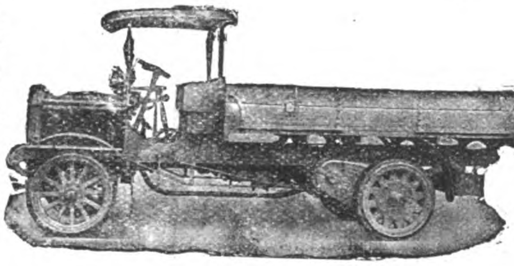
並備有專車租賃車費從廉如欲知詳細者請看告白或問省城及香港鐵路總局可也

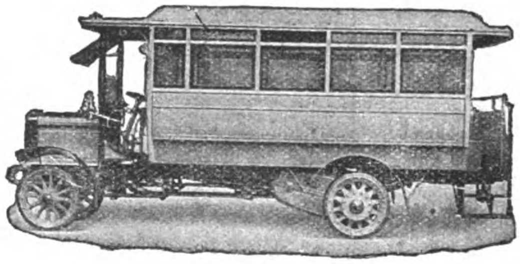
# 英國康模造車公司

Commercial Cars, Ltd., Luton, England

格言曰觀運輸機關之隆替足覘以國家之盛衰本公司專造工藝界及公家所用車輛工料堅實精良無比取價低廉如貨車灑水車救火車客車等均可

康模牌車輛





按式定造必能合意所裝油機燃燒煤油或汽油在東方應用最爲便適本公司總廠在英國勒頓城內英國康模造車公司謹啟

此種車輛裝有汽油機大小分爲十四號載重一噸至七噸載客十位至三十四位機器有二十至一百馬力

# 康狄濾水機公司廣告

The Candy Filter Coy. Ltd., Westminster, London.

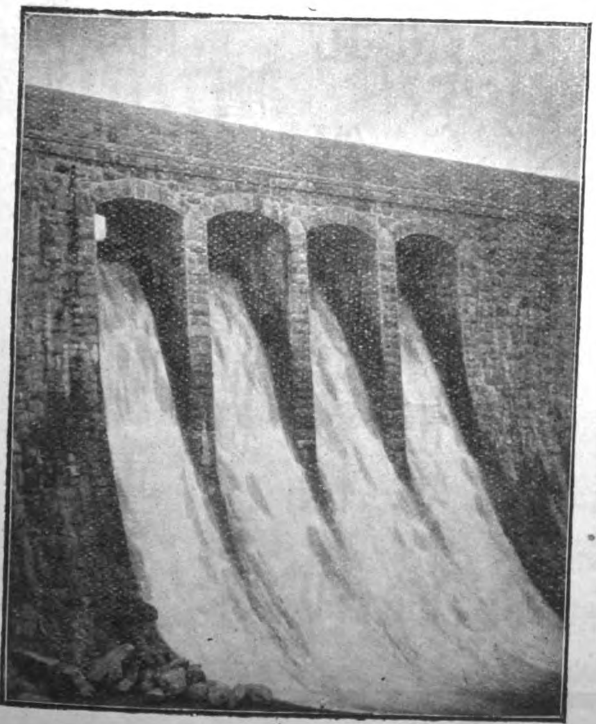
用康狄濾水機費少而效用大蓋水一經濾過其色卽清光耀奪目康狄濾水機不論大小場所城鎮工廠或興業處所無不合用

諸君若欲安置是項濾水機本公司之技師可以爲之打樣不取分文且必適合用度以致諸君信仰

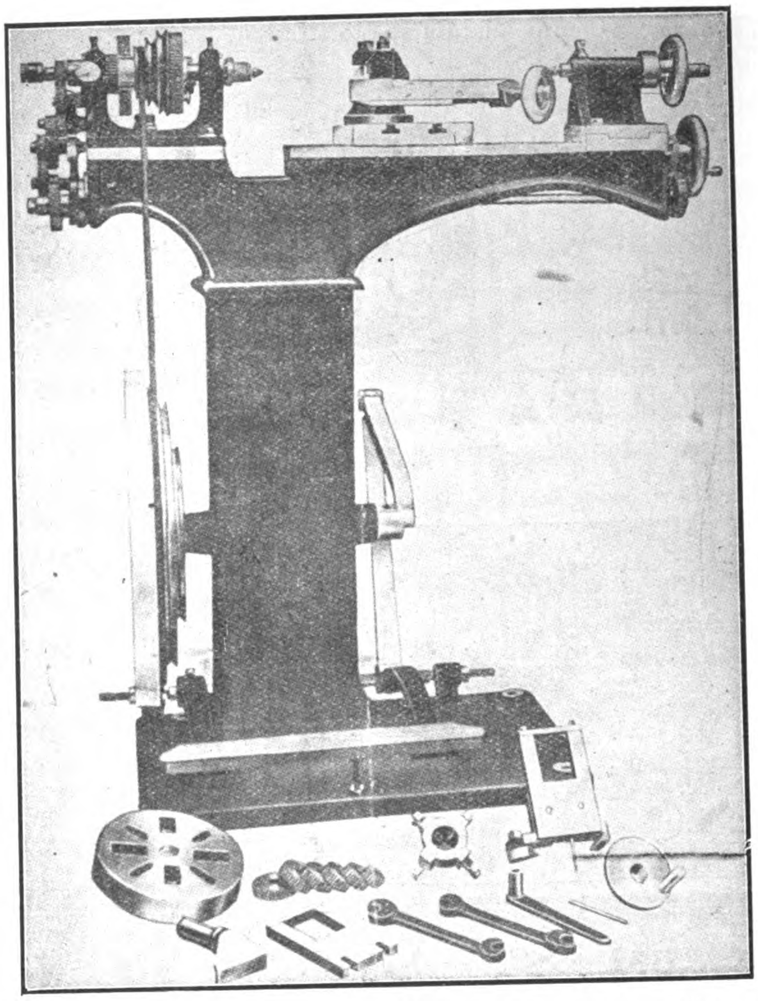
本公司注册之濾水機幷各種方法以及各器俱包使存水處所以及各支流得以清潔勿污

總行開設英京倫敦思敏思思得耳

中國經理上海九江路三號魏廷敦起水機器有限公司



# 怡和洋行機器房廣告



本行分設滬濱數十餘載專辦各種機器如下　鐵軌　車輪　車頭　紡織機　磨麪機　搾油機　碾米機　磚瓦　鋸木牀　造紙機　印書機　鎗礮　製革機　電燈　餅乾　火力引擎　煤氣引擎　火油引擎　鍋爐　發電機　開礦吸水機及馬達引擎等並常備現貨如下

火力引擎　煤氣引擎　立式鍋爐　吸水機　手搖吸水機　大小車床　修機應用各件　淨茶機　紙百　配更　皮帶等其餘一切零件不及詳載倘蒙賜顧無不歡迎定價亦格外克己請至圓明園路本帳房接洽電話一零九六

Jardine, Matheson & Co.

# 道治牌機器公司廣告

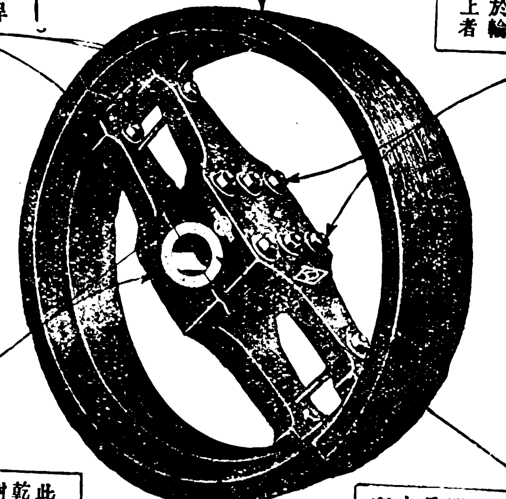
## 道治(獨立)木質分縫轆轤有交換軸套爲最省費最有力之滑車

(告貿易者)每貿易者備有滑車因本公司之交換軸套不論何種大小之輪軸均可合用蓋交換軸套付與貿易者其長可隨意截短出售此種滑車爲道治牌機器類中之一爲傳力物之嚆矢故爲各處動力者及貿易者所歡迎索取目錄不取郵費

此輪邊爲乾燥之楓樹木或樹液膠所製面上有硬套全體製成若鐵質之輪邊

此橫桿有倒筍連於輪邊以螺閂梢固

此重厚之輪心螺門乃以壓力緊於輪軸上者

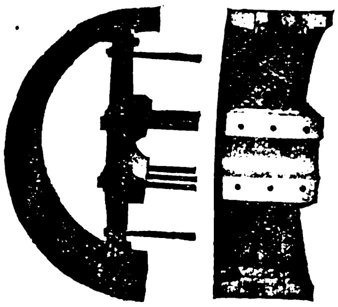


此橫桿爲乾燥之楓樹木所製輪心上有獨立二字之印記以保證之使用之者得以防護遇險

此楓樹木所製之軸套其變向及所鑿之洞爲本公司發明之機器所製爲從來所未有之軸套

此輪邊之內外轉向即表明其質厚薄均勻且有滑車使之平衡

(告動力者)此項滑車爲精於機器者所製成力大耐用排立得法故爲全球動力家所歡迎道治木質分縫轆轤能傳力自百分之二十五至百分之六十較銅鐵類以皮帶牽拉之轆轤爲有力此項滑車應用者數百萬若欲索取目錄郵費可免



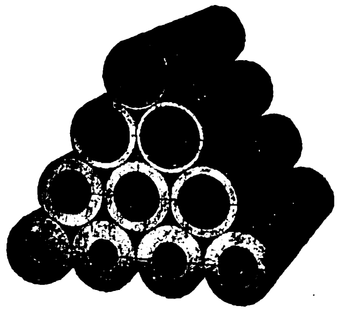
此輪之構造爲精於機械學者所製此兩方相遇若輪心夾入輪軸使之積分力而發生大力輪邊連結如內鎖

DODGE

Sales and Engineering Company

GENERAL OFFICES AND WORKS

Mishawaka, Indiana, U. S. A.



此爲木質之交換軸套特用別之車床所製若常用之則知內鑿洞而向外轉若剖之爲二則夾處自必顯明矣

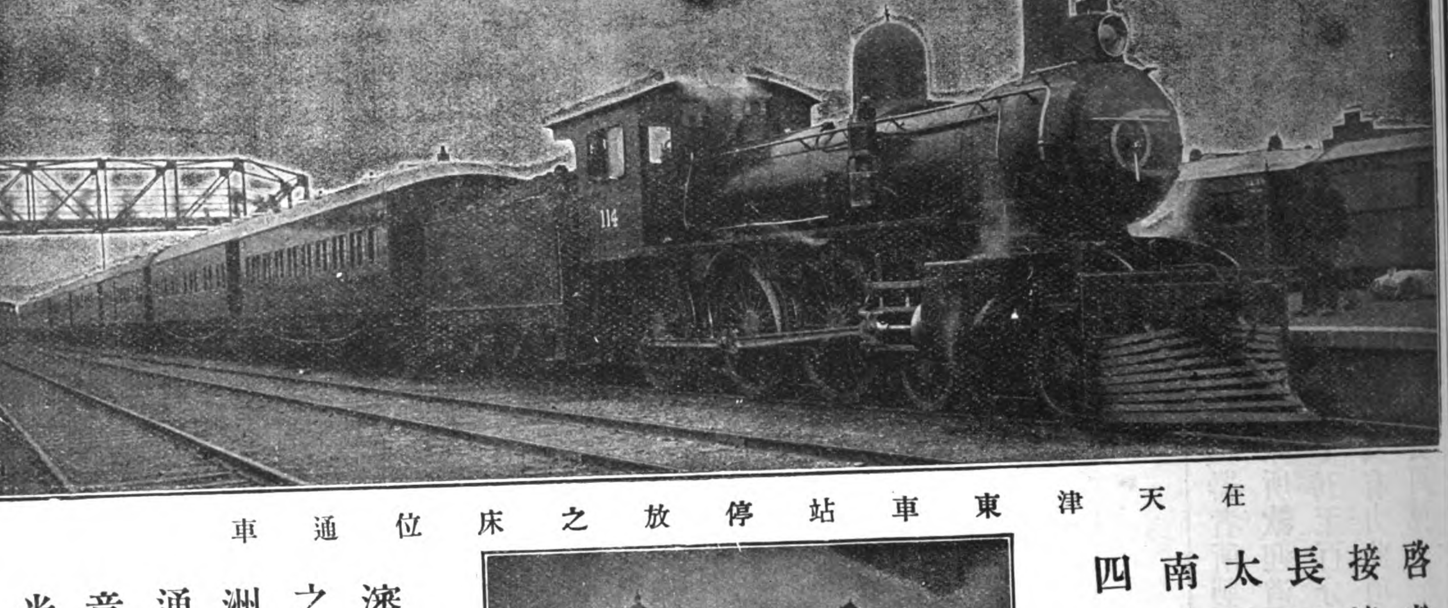
本公司亦造實質及分縫鐵軸自添油之球窠活掛軸機以及他種之軸枕摩擦接盤連結器及各種絞繩索機器幷凡傳力之各種機器

本公司所製造之各種機器均存足於海岸以便一接定單卽行裝運

本公司已有三十載之經驗裝運出口貨物不致破損

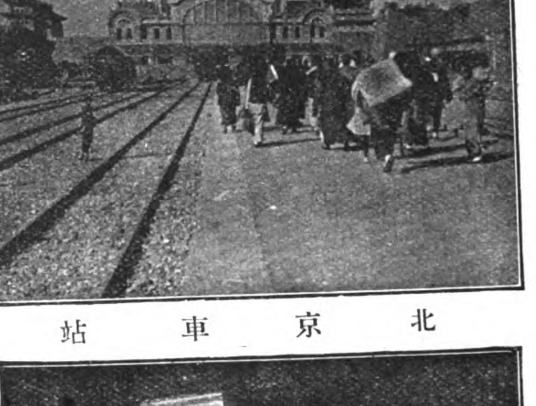
總公司及工廠開設美國印第埃拿省

# 京奉鐵路廣告

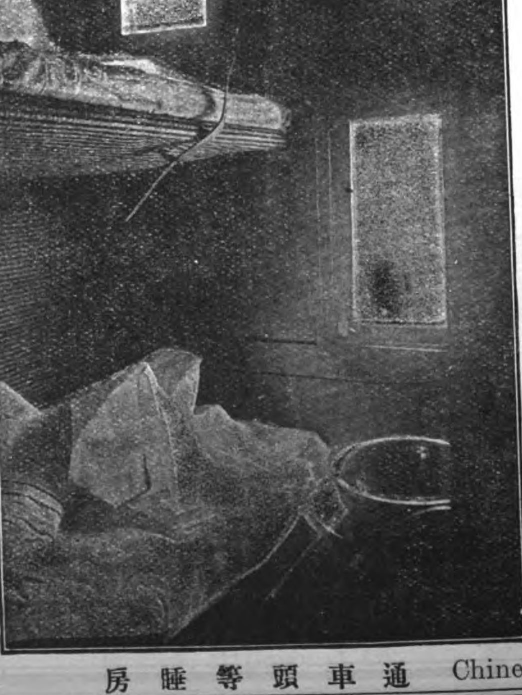


在天津東車站停放之床位通車

啓者本路路綫係與附近各路互相聯絡東則接連南滿路可達歐洲南則接連京漢路可達長江一帶商埠由京漢路中心點并可達至正太路之太原府道清路之開封府汴洛路之河南府北則與京張路綫相連可達至萬里長城四面貫通無遠弗屆本路綫所經名勝如北京



北京車站



通車頭等睡房

瀋陽之皇陵殿宇天津之北方商務總匯唐山之工廠礦務山海關之萬里長城牛莊之南滿洲商埠俱屬繁盛之區足供遊覽至京瀋直達通車每星期來往一次備有飯車睡房精潔適意以便行旅而廣招徠倘蒙

光顧毋任歡迎之至特此佈告

Chinese Government Railways of North China

# 美國紐約克美孚油行廣告

The Standard Oil Company of New York

本行所出之**鎖可聶瀝青油**爲生瀝青油由格致術所製成如欲引長其效用黏合其物質柔固其原料以及天氣溫熱度之容納無不隨心所願

**鎖可聶瀝青油**可用於任何堅硬之物不加他種之油亦合於用下列之各處均可用此**鎖可聶瀝青油**

建築永久之道路　屋頂水路工廠地板拍球園塲　水涵管洞

用於鐵路車結處電桿電柱等處　包鋼質建築物及溝管等物

**鎖可聶瀝青油**可用於法侖表熱二百二十一度之融點故於最熱之天氣亦合用適度也**鎖可聶瀝青油**非試用之物乃合衆國多年實用之油功效最著之物品也

欲知詳細請函達上海五馬路十一十二號

美國鈕約克美孚油行光油部可也

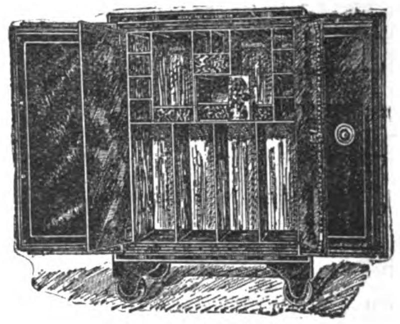
## 司帝反生公司廣告

W. F. Stevenson & Co., Ltd.

小呂宋　伊羅伊羅　塞步
本公司駐小呂宋單獨經理白
弗羅匹次公司之農業機器克
老司來弟兄公司之煤汽機及
油汽機奥司丁製廠之造路機
器威廉滑脫公司之航海機器
及水鍋等
合羣愛司倍司督司東方經理處

## 晉隆洋行廣告

Herring Hall Marvin Safes. Mustard & Co.



赫令好馬文保險箱爲
上海所罕見目下陳列
於本公司之售賣間
若欲知詳細價目請來
函索取目錄并價格表
爲荷本公司在中國爲
單獨經售此項保險箱
之公司
公司開設上海圓明
園路二十二號
電話第十五號

## 馬爾思公司

A. J. Morse & Son Diving Apparatus.

本公司創設於紀
元一千八百三十
七年專製下水應
用之器具若欲定
製無不立辦
公司開設美國鮑
思敦高街第二百
二十一號
經理處小呂宋弗
蘭克司決滾克

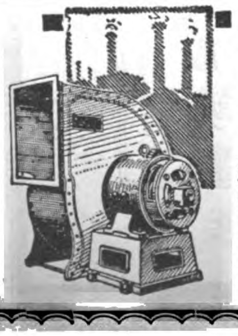
## 希米脫加熱機關車蒸機公司廣告

The Schmidt Superheater For Locomotives.
The Schmidt Superheating Co., Ltd.

本公司所製之加熱蒸機中有
四百九十多條之鐵道用二萬
八千五百架機關車之加熱蒸
機均爲倫敦及西北鐵路公司
所審定若承購買請向上海經
理處瑞記洋行定購可也
公司開設英國章司民司
得維多利亞街二十八號

## 麥秀斯耶次公司廣告

Matthews & Yates Ltd.



本公司所製之旋風風扇
不論放於何處能省費加
力
旋風風扇在世界各處無
不置備因能生風通氣去
濕等等利益在中國各處
裝置者頗不乏人故聲價
日高
諸君欲知詳細請來函索
取第二百七十三號之說
明書
本公司開設英國孟鳩
思得
中國經理處　上海江西路三十九號凱衛倫洋行

# 上海耶松機器船廠有限公司

The Shanghai Dock & Engineering Co., Ltd.

電報行名 Telegraphic Address and Code

"FARNHAM"

A. B. C. 4th and 5th Editions
A.-1 Watkin's, Scott's
Western Union
and
Engineering.

密碼本用

總公司

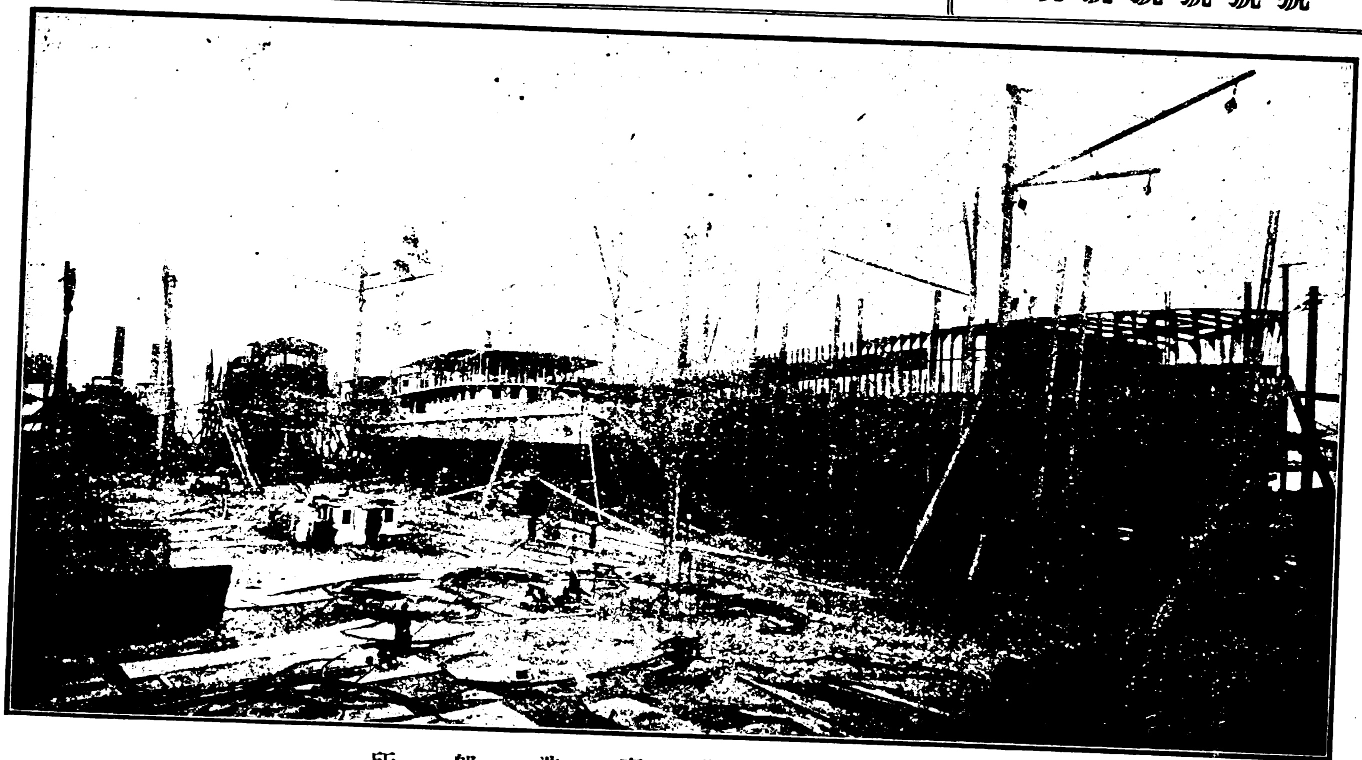
在百老匯路廿六號

德律風第七號

Address.

電話號碼 Telephone Number

大班處 七五七號
書記處 一八七號
總辦處 六七八號
幫辦處 一八八七號
總寫字間 七號
浦東寫字間 二三號
浦東機器間 一二二七號



祥生機器廠造船所

本廠所造輪船模型英一千九百零四年在美國聖魯易賽會得賞金牌

The Model exhibited at St. Louis Exposition and awarded the Gold Medal in 1904.

熱水汽管司卽丁火爐各種式樣俱全

All Kind of Steam Heating Institutions.

本廠共有船塢五處長自三百五十五尺至五百三十二尺船塢口闊自五十三尺至七十七尺深十六尺至廿四尺　本廠價格可稱東方第一低廉　本廠船塢工場共有基地四百四十八畝佔有水面一英里半之長　碼頭方船均全以便各輪船修理時可以靠傍小輪修理並可拖至岸上各船塢均備有起重吊機可受六十五噸之重物　各造船處及工場均裝用電燈並有活動吊機可吊六十噸重之物並有最新式機器應用物件機器間及工場均裝輕便鐵道　本廠備有水鬼多名撈船器具及吊機浮船一遇招呼隨時應命無論海船江輪明輪暗輪拖駁小輪機器駁船挖泥船吊機浮船以及碼頭方船等如蒙詢問價目無不從速答覆　各種修理及拆舊換新等本廠均可承接並能迅速從事　本廠並有船上岸上所用機器爐子開礦機抽水機以及各種機件電氣自來火火油司丁各種機器俱全如蒙賜顧請卽駕臨或函件接洽均當歡迎也

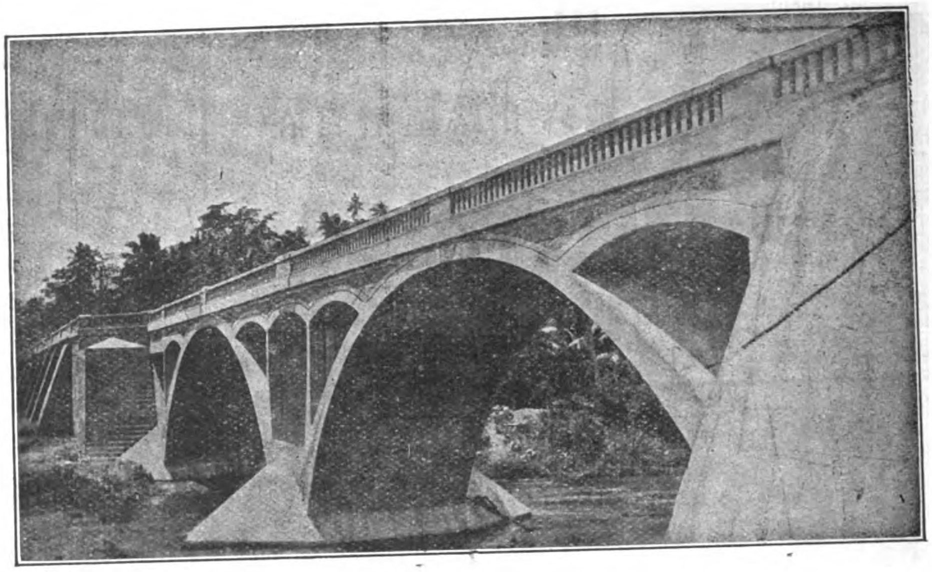
# 青洲英泥

Green Island Cement Company, Ltd.

燒青泥磚

大小明暗瓦溝

水斗等器



花階磚

大階磚

火爐磚及泥

亞路卑扒拉波歷握橋用二千五百桶青洲英泥而建成

## 代理分銷處

架刺吉打　端拿摩利臣公司

新加坡　士滔片民

長口及漢口壹帶渣甸洋行

仰光　希活

孟米　士片拿公司

庇能　列公司

中國海岸及臺灣渣甸洋行

## 本行在別埠代理處

上海支行

日本支行

天津支行

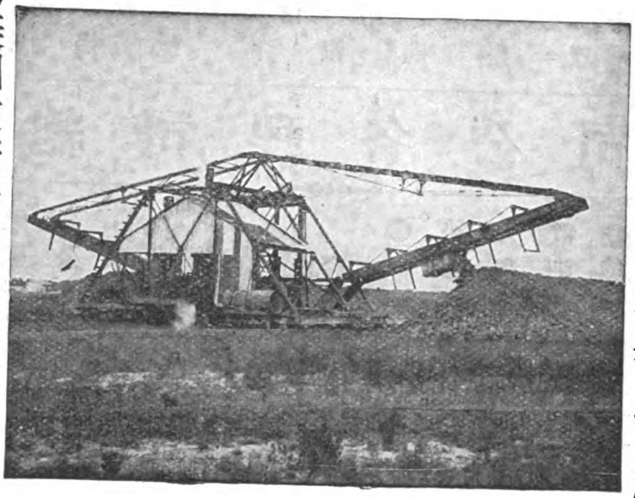
非律賓羣島全權代辦人小呂宋威廉晏打臣公司

# 奧司丁挖渠機器公司露佈

F. C. Austin Drainage Excavator Co.

本公司製造各種機器如溉田機器鑿溝機器且一經購定即可速即裝運出口今本公司特登廣告以告諸包工家營造師以及政府中官吏因本公司已將各機器早經裝就定單一到即可運往印度緬甸錫蘭暹羅海峽殖民地埃及中國日本及遠東諸各處水脚保險均可包理

奧司丁鑿溝機器樣式及大小種類極多且各種地土均可挖鑿其兜能自傾外出其機器之料作均鋼所鑄



奧司丁掘土機器能自由運動地之深淺闊狹斜側均適宜合用其兜能自傾外出

圖中之奧司丁連結挖掘機器為美國政府所用以開巴拿馬運河之用每一連機每點鐘可挖掘六十八立方碼奧司丁公司所出之機器通行於美國英國坎拿大奧司達利亞南亞非利加日本俄羅斯意大利巴西及埃其丁民主國且均由各該政府定購

若欲知詳細章程者可函達上海遠東報主筆先生可也

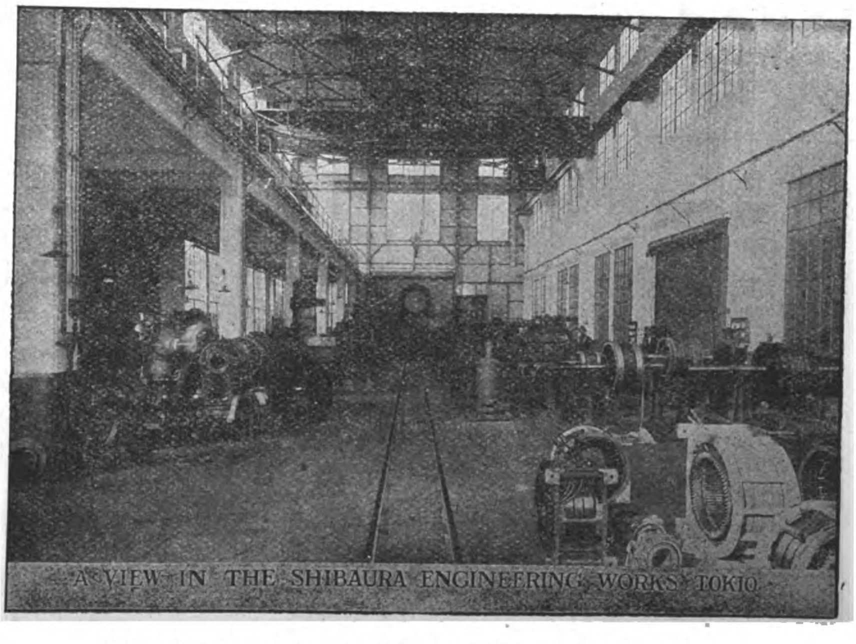
本公司開設美國芝加哥省

# 克立討耳公司廣告

CRITTALL

本公司包造各種房屋遐邇馳名工廠開設英國

日本經理（東京）麴町區有樂町十一町目




日本東京芝浦製作所之窗圖

中國經理（上海漢口天津）上海南京路十三號盈生洋行

此圖為本公司在日本東京之機器工廠

# 新旗昌洋行

本行佈設英京神戶廣州香港上海天津紐約等處專辦出入口貨代理船務及抽佣經理人

香港書信箱號數第壹百三十一號卑字
上海郵政局信箱第八十四號
各枝行掛號電報碼用旗昌二字

## 本行總司理各公司列下

● 非律賓輪船有限公司
● 維新織造有限公司
● 廣州省城置地有限公司
● 永安人壽保險有限公司
● 中呂輪船有限公司
● 勢力電燈有限公司
● 青洲英坭有限公司
● 香港麻纜織造有限公司
● 均益按揭有限公司

## 代理各公司列下

● 厘拉仁士洋面保險有限公司
● 大洋海面保險有限公司
● 泗水海及火燭保險有限公司
● 英北及商務保險公司
● 羅天仁保險有限公司
● 煜舍燕梳有限公司
● 北美燕梳公司
● 上洋歎菓及紙料有限公司
● 美亞輪船公司
● 美滿航務公司
● 祁連航務有限公司
● 香港電車有限公司
● 楊子燕梳有限公司
● 地球洋面保險有限公司
● 大洋意外保險有限公司

## 上海英商新旗昌洋行機器處廣告

本行樓子房現設江西路六號電話三四八七號

本行經理各種機器如紡織碾米榨油磨麵造紙開礦墾荒抽水挖坭大小火輪全副引擎鍋爐及火車頭客車貨車鐵路材料並自來水一切物件其餘鋸木車鑽刨床各式大小引擎鍋爐及磨電機發動機煤氣引擎發煤氣機以及得律風電燈電氣應用一切另件等具色色俱全均係外洋著名廠家特別精造新式玲瓏堅固但各項名目繁多未便盡載倘承賜顧或蒙函詢當即竭誠詳細奉答價亦格外克己以廣招徠尚祈惠臨方知言之不虛也

## 在中國全權代表各公司列下

減隴路城火車工廠
澳地士依里威滔公司
波路深孖汽喉公司
拋亞瓦斯合股有限公司
拋亞不厘有限公司
李孖普鐵廠
倫深未禪及制花利有限公司
盧爹士麼滔有限公司
船主琴實使順有限公司
所利雲機器公司
爲拉列地有限公司
華臣製造公司
和蛙連毛滔工廠

裝鐵路燈工廠
壓活公司
占士科士打有限公司
占士撻邊士公司
立可父子公司
可夫文製造公司
賛鶴建臣父子有限公司
耳昔則臣父子有限公司
精建兄弟有限公司
奇布尼及則給士製造公司
廉孖車頭及機器公司
文寧麥士謂及摩公司
妙千斤塵不歷其滔公司

美國布魯亞公司
美國鋼線公司
大英靴路士比電線纜有限公司
班尼士製造公司
比厘路公司
表花盧不歷鞭公司
表花盧士派士厘公司
布律嵩父子公司
插父子鎖鑰與銀箱有限公司
地吐律滔路公司
的有限公司
賛的建臣公司
胡路扶公司

Shewan, Tomes & Company

# 瑞生洋行

設分行在漢口天津北京等處

本行開設在華歷有年所承蒙官商訂購各種機器或全廠或零售無不價廉物美屢承嘉許遐邇皆知凡官商諸公購辦機器務祈惠臨敝行估開價目繪呈圖說格外克己上海漢口兩處另設機器陳列所陳列各種最新式樣機器及五金器具鋼地軸皮帶輪掛脚等以備諸公駕臨觀覽特此佈告

上海瑞生洋行謹白

Shanghai Machine Company

# 魏廷敦起水機器有限公司

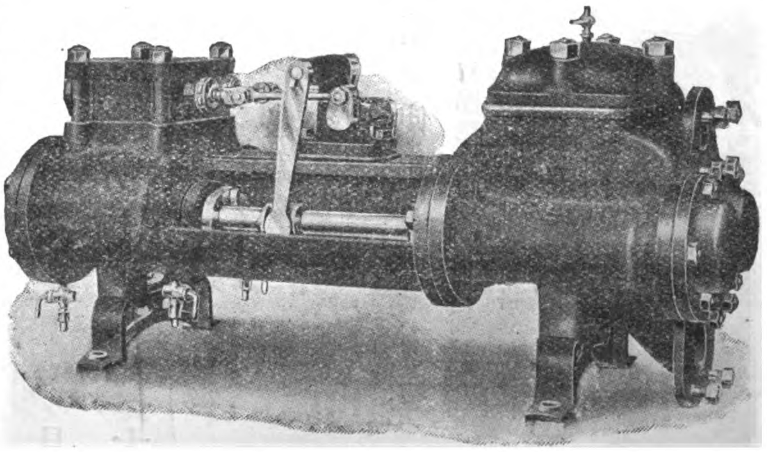
Worthington Pump Company, Limited.

本公司起水機器亦在各國著名賽會得有金牌

本公司亦有製造廠在以下之國

英國　法國　美國　澳國

德國　印度國



本公司亦有辦事處在以下載明之各國

比利時　南亞斐利加　坎拿大
澳大利亞　中國　葡萄牙
墨西哥　巴西國　俄羅斯
阿珍甸　西班牙　義大利

中國總辦事處在上海九江路第三號

# 美國派愛而車頭電燈公司告白

Pyle-National Co.

## 下圖表明用二萬二千支光派愛而車頭電燈之功用

此圖的係攝自美國鐵路車站其攝影之地點相去

車頭有半英里之遙足徵派愛而燈之功用非小

派愛而燈能發有力明亮之光可使車頭司機者之視線能達半里之外且使其能瞭視一切可避危機派愛而燈之功用上已略言之矣總之人咸樂用此種燈因知其無美不臻也

# 西方電氣公司廣告

The Western Electric Co., Inc., Shanghai.

公式電池用牆機

三十八載以來本公司已供給全地球市場電話機一千萬具及多數之電纜電料以及最大之總機爲世界各國從未製造

快快改用

西方電氣公司製造品

機件最精　使用最易　擴充尤易

本行開設上海廣東路黃浦灘轉角
小呂宋經理處愛令加格令加洋行
日本經理東京日本電氣株式會社

公式電池用桌機

# 正太鐵路客車時刻表

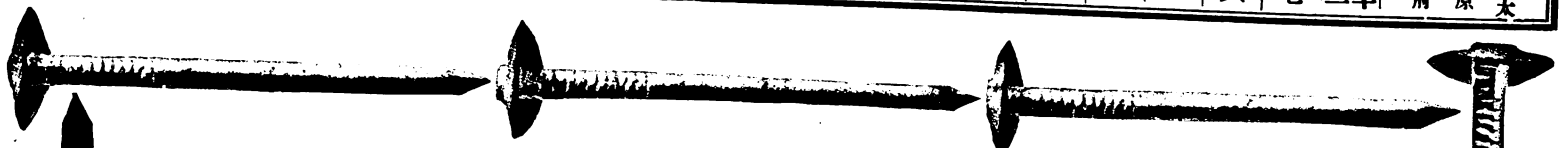
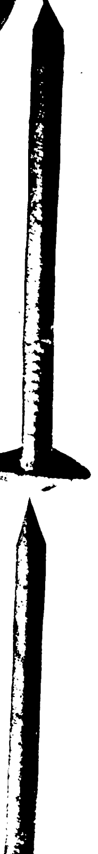
The Cheng-Tai Railway

## 上行各車

| 站名 | 頭等 元 | 頭等 角 | 二等 元 | 二等 角 | 三等 元 | 三等 角 | 慢車 開 點 | 慢車 開 分 | 客貨車 開 點 | 客貨車 開 分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 石家莊 | | | | | | | 七 | 〇三 | 七 | 三十 |
| 大郭村 | | 五 | | 三 | | 二 | 七 | 十六 | 七 | 四五 |
| 獲鹿縣 | | 九 | | 五 | | 三 | 七 | 三二 | 八 | 〇三 |
| 頭泉 | 一 | 二 | | 七 | | 四 | 七 | 五一 | 八 | 二三 |
| 白王莊 | 一 | 五 | | 八 | | 五 | 八 | 十一 | 八 | 四六 |
| 五里鋪 | 一 | 七 | 一 | | | 六 | 八 | 二一 | 八 | 五八 |
| 微水 | 二 | 一 | 一 | 一 | | 七 | 八 | 三六 | 九 | 十五 |
| 南横口 | 二 | 三 | 一 | 三 | | 八 | 八 | 四九 | 九 | 二九 |
| 南張村 | 二 | 五 | 一 | 四 | | 九 | 九 | 〇二 | 九 | 四三 |
| 井陘縣 | 二 | 八 | 一 | 五 | 一 | | 九 | 二五 | 十 | 十五 |
| 北峪 | 三 | 一 | 一 | 七 | 一 | 一 | 九 | 三六 | 十 | 四一 |
| 南峪 | 三 | 三 | 一 | 八 | 一 | 一 | 九 | 四七 | 十 | 五一 |
| 娘子關 | 三 | 六 | 二 | | 一 | 二 | 十 | 十八 | 十一 | 十七 |
| 程家隴底 | 四 | | 二 | 二 | 一 | 四 | 十 | 三四 | 十一 | 三四 |
| 下盤石 | 四 | 五 | 二 | 四 | 一 | 五 | 十 | 五十 | 十一 | 五二 |
| 巖會 | 四 | 八 | 二 | 六 | 一 | 六 | 十一 | 〇四 | 十二 | 十四 |
| 亂流 | 五 | 三 | 二 | 九 | 一 | 八 | 十一 | 二四 | 十二 | 三六 |
| 白羊墅 | 五 | 六 | 三 | 一 | 一 | 九 | 十一 | 三八 | 十二 | 五二 |
| 陽泉 | 五 | 八 | 三 | 二 | 二 | | 十二 | 三七 | 十三 | 二十 |
| 賽魚 | 六 | 二 | 三 | 四 | 二 | 一 | 十二 | 五三 | 十三 | 三七 |
| 坡頭 | 六 | 五 | 三 | 六 | 二 | 二 | 十三 | 〇九 | 十三 | 五四 |
| 測石驛 | 六 | 八 | 三 | 七 | 二 | 三 | 十三 | 三二 | 十四 | 十六 |
| 芹泉 | 七 | 三 | 四 | | 二 | 五 | 十三 | 五六 | 十四 | 四十 |
| 壽陽縣 | 七 | 八 | 四 | 二 | 二 | 六 | 十四 | 十九 | 十五 | 十三 |
| 郭村 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 三二 | 十五 | 二九 |
| 上湖 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 四七 | 十五 | 四六 |
| 盧家莊 | 九 | | 四 | 九 | 三 | | 十五 | 〇三 | 十六 | 十 |
| 段廷 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 十八 | 十六 | 二七 |
| 東趙村 | 九 | 八 | 五 | 三 | 三 | 三 | 十五 | 三四 | 十六 | 四六 |
| 北合流 | 十 | 二 | 五 | 五 | 三 | 四 | 十五 | 四七 | 十七 | 〇三 |
| 榆次縣 | 十 | 五 | 五 | 七 | 三 | 五 | 十六 | 〇九 | 十七 | 三三 |
| 鳴李 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二一 | 十七 | 四七 |
| 北營 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 三三 | 十八 | 〇一 |
| 太原府 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 四五 | 十八到 | 十五 |

## 下行各車

| 站名 | 頭等 元 | 頭等 角 | 二等 元 | 二等 角 | 三等 元 | 三等 角 | 慢車 開 點 | 慢車 開 分 | 客貨車 開 點 | 客貨車 開 分 |
|---|---|---|---|---|---|---|---|---|---|---|
| 太原府 | | | | | | | 七 | 五三 | 八 | 〇六 |
| 北營 | | 五 | | 三 | | 二 | 八 | 〇七 | 八 | 二一 |
| 鳴李 | | 八 | | 五 | | 三 | 八 | 十九 | 八 | 三四 |
| 榆次縣 | 一 | 二 | | 七 | | 四 | 八 | 四五 | 八 | 五九 |
| 北合流 | 一 | 六 | | 九 | | 六 | 八 | 五九 | 九 | 十四 |
| 東趙村 | 二 | | 一 | 一 | | 七 | 九 | 十三 | 九 | 二九 |
| 段廷 | 二 | 四 | 一 | 三 | | 八 | 九 | 二九 | 九 | 四七 |
| 盧家莊 | 二 | 八 | 一 | 五 | 一 | | 九 | 四五 | 十 | 〇七 |
| 上湖 | 三 | 二 | 一 | 八 | 一 | 一 | 十 | 〇三 | 十 | 二六 |
| 郭村 | 三 | 六 | 二 | | 一 | 二 | 十 | 十九 | 十 | 四三 |
| 壽陽縣 | 四 | | 二 | 二 | 一 | 四 | 十 | 三七 | 十一 | 〇七 |
| 芹泉 | 四 | 四 | 二 | 四 | 一 | 五 | 十 | 五三 | 十一 | 二四 |
| 測石驛 | 四 | 九 | 二 | 七 | 一 | 七 | 十一 | 十三 | 十一 | 四七 |
| 坡頭 | 五 | 二 | 二 | 八 | 一 | 八 | 十一 | 二五 | 十二 | 〇一 |
| 賽魚 | 五 | 六 | 三 | | 一 | 九 | 十一 | 三八 | 十二 | 十九 |
| 陽泉 | 五 | 九 | 三 | 二 | 二 | | 十二 | 三九 | 十三 | 三五 |
| 白羊墅 | 六 | 一 | 三 | 三 | 二 | 一 | 十二 | 五一 | 十三 | 五一 |
| 亂流 | 六 | 四 | 三 | 五 | 二 | 二 | 十三 | 〇四 | 十四 | 〇八 |
| 巖會 | 七 | | 三 | 八 | 二 | 四 | 十三 | 二四 | 十四 | 三七 |
| 下盤石 | 七 | 三 | 四 | | 二 | 五 | 十三 | 四十 | 十四 | 五三 |
| 程家隴底 | 七 | 七 | 四 | 二 | 二 | 六 | 十三 | 五七 | 十五 | 十二 |
| 娘子關 | 八 | 二 | 四 | 四 | 二 | 八 | 十四 | 十七 | 十五 | 四五 |
| 南峪 | 八 | 五 | 四 | 六 | 二 | 九 | 十四 | 三三 | 十六 | 〇一 |
| 北峪 | 八 | 七 | 四 | 七 | 二 | 九 | 十四 | 四二 | 十六 | 十二 |
| 井陘縣 | 九 | | 四 | 九 | 三 | | 十四 | 五八 | 十六 | 五五 |
| 南張村 | 九 | 二 | 五 | | 三 | 一 | 十五 | 十 | 十七 | 〇九 |
| 南横口 | 九 | 四 | 五 | 一 | 三 | 二 | 十五 | 二一 | 十七 | 二一 |
| 微水 | 九 | 七 | 五 | 三 | 三 | 二 | 十五 | 三三 | 十七 | 三五 |
| 五里鋪 | 十 | | 五 | 四 | 三 | 四 | 十五 | 四九 | 十七 | 五五 |
| 白王莊 | 十 | 二 | 五 | 六 | 三 | 四 | 十五 | 五八 | 十八 | 〇六 |
| 頭泉 | 十 | 六 | 五 | 七 | 三 | 六 | 十六 | 十三 | 十八 | 二三 |
| 獲鹿縣 | 十 | 九 | 五 | 九 | 三 | 七 | 十六 | 二八 | 十八 | 五七 |
| 大郭村 | 十一 | 三 | 六 | 一 | 三 | 八 | 十六 | 四十 | 十八 | 五七 |
| 石家莊 | 十一 | 七 | 六 | 四 | 三 | 九 | 十六 | 五一 | 十九到 | 〇十 |

## 美國鋼鐵出產公司廣告

本公司所出鍍鋅彈簧鐵釘久爲光顧諸君所歡迎蓋以之釘屋頂實較勝於螺釘螺蓋螺圈也且價格叉廉此四面之釘圖即本公司之出品長二吋四分之一諸君若購用之則屋頂不滲漏貨物不致損壞且省修理費若欲購者請向上海江西路愛字二十四號門牌可也

THE UNITED STATES STEEL PRODUCTS COMPANY.

## 白老頓製銅公司廣告

The Broughton Copper Co., Ltd.

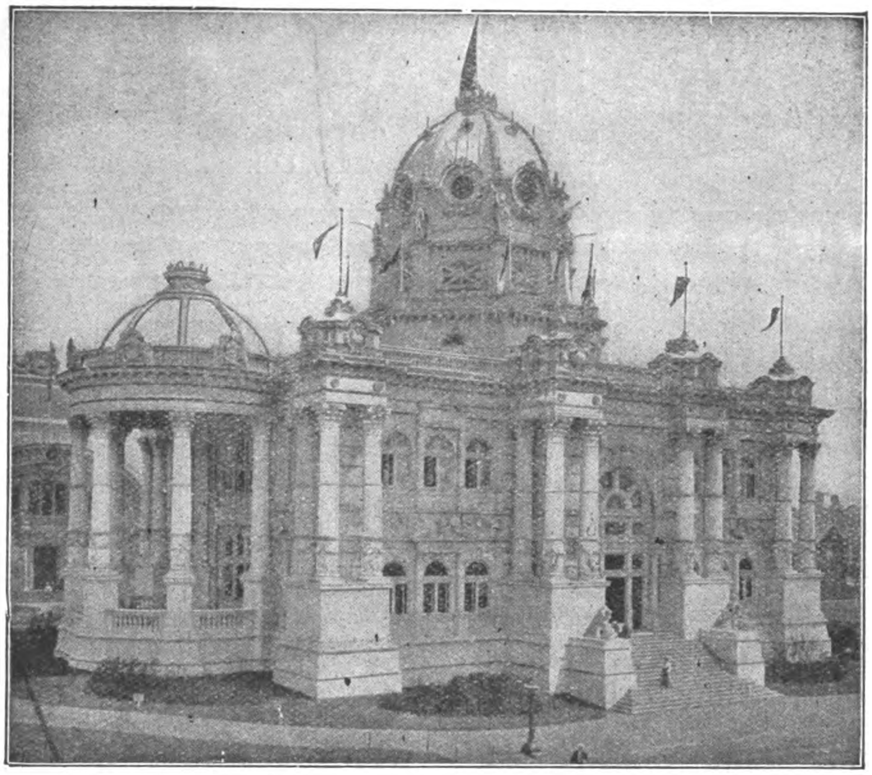
本公司冶銅製造紫
銅黃銅青銅管子濬
冶合度堅固異常特
供航海及機關車幷
種種用具又製造銅
塊銅條銅片及銅版
幷製電銅版及夾銅
等物

公司開設英
國曼區司得

## 安德生公司廣告

Wm. H. Anderson, & Co. Manila, P. I.

本公司專做出口進
口貨物幷代客買賣
且爲以下所列各公
司駐小呂宋之經理
革林島水門汀泥公
司 香港纜索製造
公司 立培麥克聶
立培公司 司活夫
公司 勃老司活克
白耳克考蘭特公司
婑磨督公司 大
愛垉特保險箱光滑
油溝渠管火磚火泥
及羅勃老特避火之
瓦若承各界光顧祈
通函定購可也
本公司開設小呂
宋小打克羅橋



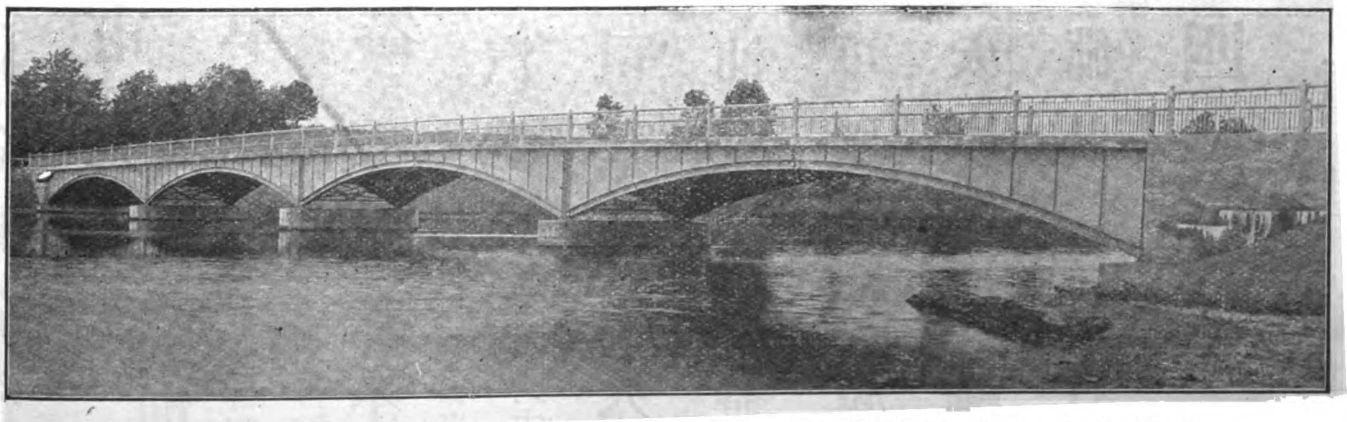
此爲巴蘭夢羅和平宮其工程之堅固久爲世界所稱譽然建築時需用鋼鐵至四百餘噸之鉅皆本公司所供給特攝之以供賞鑒

# 美國鋼鐵公司

電碼 "Steelyard." Shanghai

經理處 上海黃浦灘第四號

本公司專辦各種建築鋼鐵品並包造鐵橋鐵房自來水煤氣塔及各種鐵管等物無不全備



此爲美國牛査西省克那基湖哈爾門橋橋共四彎每距九百二十四寸約重二十七萬一千餘噸計用鋼鐵甚夥均屬本公司之出品

United States Steel Products Company

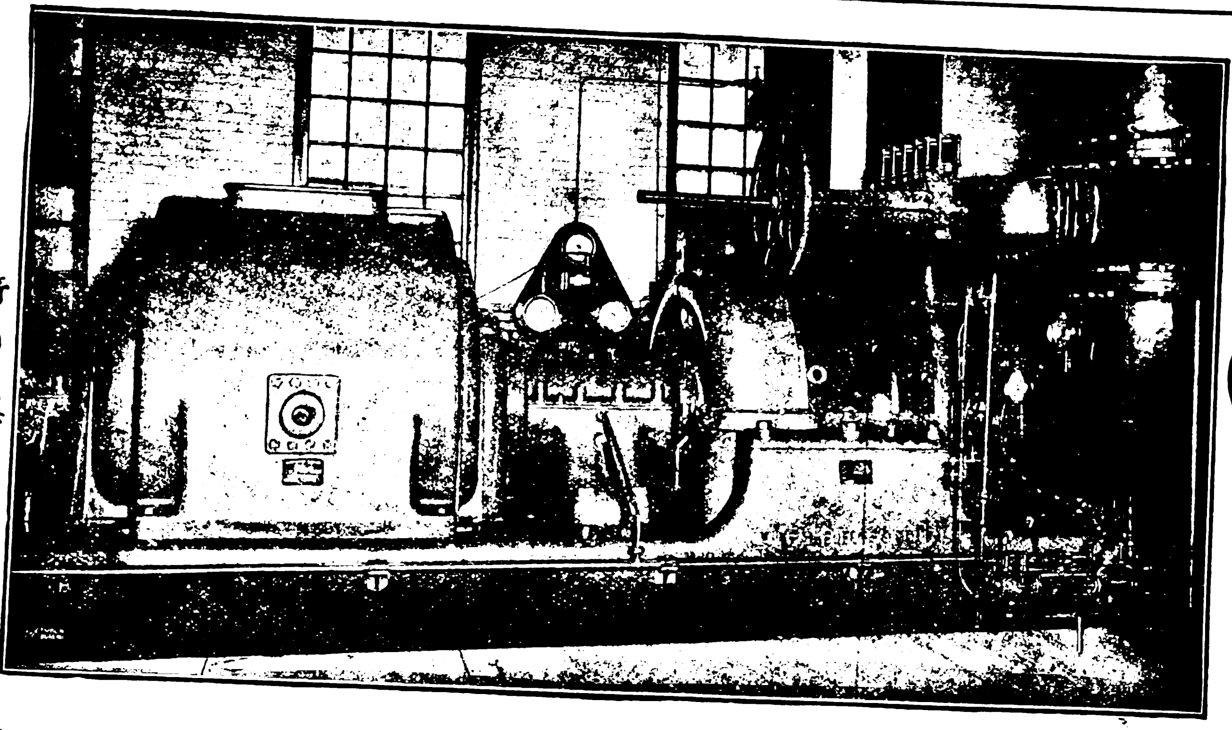
# 慎昌洋行廣告

Andersen, Meyer & Co., Ltd.

本行設立已久遐邇馳名專辦歐美各國名廠各種機器所有電燈全廠機器及各項電機電話火車鐵路鋼軸鋼鐵各軌各式車牀刨床測量繪圖儀器並各種汽油機器等件無不俱全所有本行經理之

美國愛特生電汽總公司　英國湯浦電機公司　浦特製造火車公司　漢司火車燈公司　施端林電話公司　范落汽油行船機器廠　右孚亞士工程儀器廠　鄧特摩阿車刨機器廠　馬士維爾石棉廠等均係環球著名各大廠中外馳名凡賜顧者均知各名廠機器之完善美備也　諸君欲知詳細請移玉至上海圓明園路四號

中國經售處上海慎昌洋行



奇異商標

B T-H

美國紐約**普通**又名**奇異電汽總公司**為環球獨步世界第一之電汽製造廠與英國著名**湯輔公司**係屬聯號性質近年新發明一種**透頻汽機** 係與磨電機直接相連而用便利異常且自七啓羅滑脫推至二萬啓羅滑脫其汽機之工料無不堅固精良而用煤亦省使用極靈即裝置機件亦能省佔地位誠現今電廠**惟一無二之電機也**此機發明後各國爭相購用僉謂較舊式之電機其使用之利鈍相去殆不可以道里計 **又新造一種光明省電之曼士達拉絲燈泡** 此燈泡乃本廠獨家創造係以數十年之電學經驗參照美國國家頒定規程研究製造而成故質地既極精良燃點尤能經久發行以後風行全球因其能省電力而光線之足備反出各種新式電燈之上因之銷路日廣愈推愈遠洵為**電燈泡中之魁首** 又**奇異商標各種電氣風扇** 省電多風用久無炙手諸患可免一切危險 **又電話機器** 式樣玲瓏裝置簡便內地躉購且可代為裝置餘如各種電燈全廠電機家常裝用之電汽器具並礦機鑽石機升降起重各機轉滾提鍊電機傳電器電汽船大小各廠應用之電機幫浦潔淨機貯水所發電機避電測電等機泉水發光機以及各種海陸軍用電光照遠燈電扇轉動等機凡屬於電汽各項大小機件及各樣附屬之件無不完全齊備 賜顧諸君欲知詳細請 駕臨 **上海圓明園路**四號本行寫字間接洽無任歡迎此佈

**中國經理處上海慎昌洋行**

General Electric Company

# 麥康韋討萊公司廣告

The McConway & Torley Co. Janney—Penn. Coupler.

邇來新發明之愛姆西皮近耐形連結俱爲本公司所輸入及研究所得者此連結俱即近耐形之化身而變成目下最通用之對鎖鎖具及肘節開具爲美國愛姆西皮會所推許茲將各所製造者一一說明於後

對鎖者即既爲輪制所鎖住則鎖條決不向上活動因下端凸出干連結之空處免致脫節也

鎖具者即以鎖砧置於連頭之內端俟不連結之端向上轉動時即按節而合若欲解脫此鎖具當於連結時拔去之

肘節開具即由最相結連之處或略分開之處開放至最大開放處其運行處自由且肘節開放完備

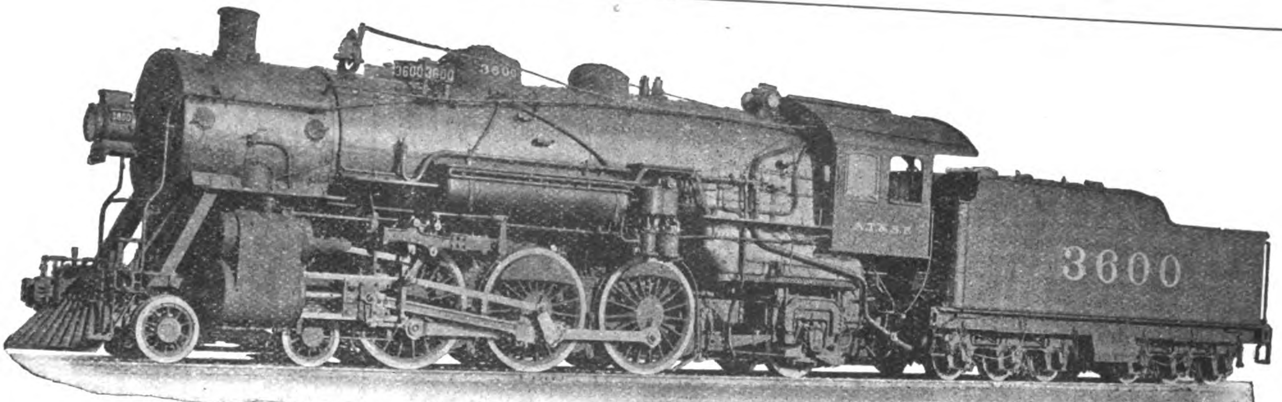
其鎖面形極大約五方吋故能使肘節附合且鎖砧大小適合於連結端之下此連結俱備有各種之附屬品且易於修理此項連結俱爲本公司所專製

總公司開設美國本色萬尼亞省匹此勃

中國經理上海慎昌洋行天津協隆洋行

# 巴爾威機器車頭廠

The Baldwin Locomotive Works



愛克生討庇格散打非各鐵路之太平式車頭

美國搭客之快車中其大半皆有本廠之太平式(四—六—二)機器車頭所拖帶此項車頭機器能載重力拖帶重車因機器內包函之力足使速率按時增高也

汽筩長二十六吋闊二十六吋　主動輪直徑七十三吋

汽機壓力二百磅　火爐佔地六十六另十分之七方呎

熱水面積四千四百四十三方呎　加重熱水面積九百八十方呎

主動輪重十七萬二千五百五十磅　機器共重二十八萬八千七百磅　拖力四千一百磅

太平式之機器車頭爲愛克生討庇格散打非鐵路所有爲近世最新式之機器見上圖

此條鐵路爲乘客最多故車行之次數亦多辦法亦妥善

此車頭用油爐特意擴充其極大之力每邊之主動輪之重限五萬八千磅

此項機器已爲本廠帶往巴拿馬萬國賽會場之物件中之一

中國經理（上海 北京 張家口 天津 香港 漢口）愼昌洋行

日本經理東京舍爾法辣薩有限公司

# 美國鋼鐵公司

上海黃浦灘第四號

電碼 'Steelyard' Shanghai

## 專運美國鐵管公司各種物品

並製各式鋼鐵自來水自來火蒸汽等氣管

大小自八分之一至三十寸

隨意配合無不適用

## 汽鍋上應用之鋼管

質料或剛或柔式樣或大或小尺寸或長或短

各式井內所用管子

## 無縫煤氣管或煤油鐵管

其重量能抵三千七百磅壓力

用於各種大壓力煤氣空氣亞馬尼亞及炭氣等物最爲合宜

## 空心鐵柱

用以建築電車軌道電桿德律風桿及各種電氣柱枝

其外尚有各項工程應用之鋼鐵管子

及自來火自來水龍頭等件一應俱全

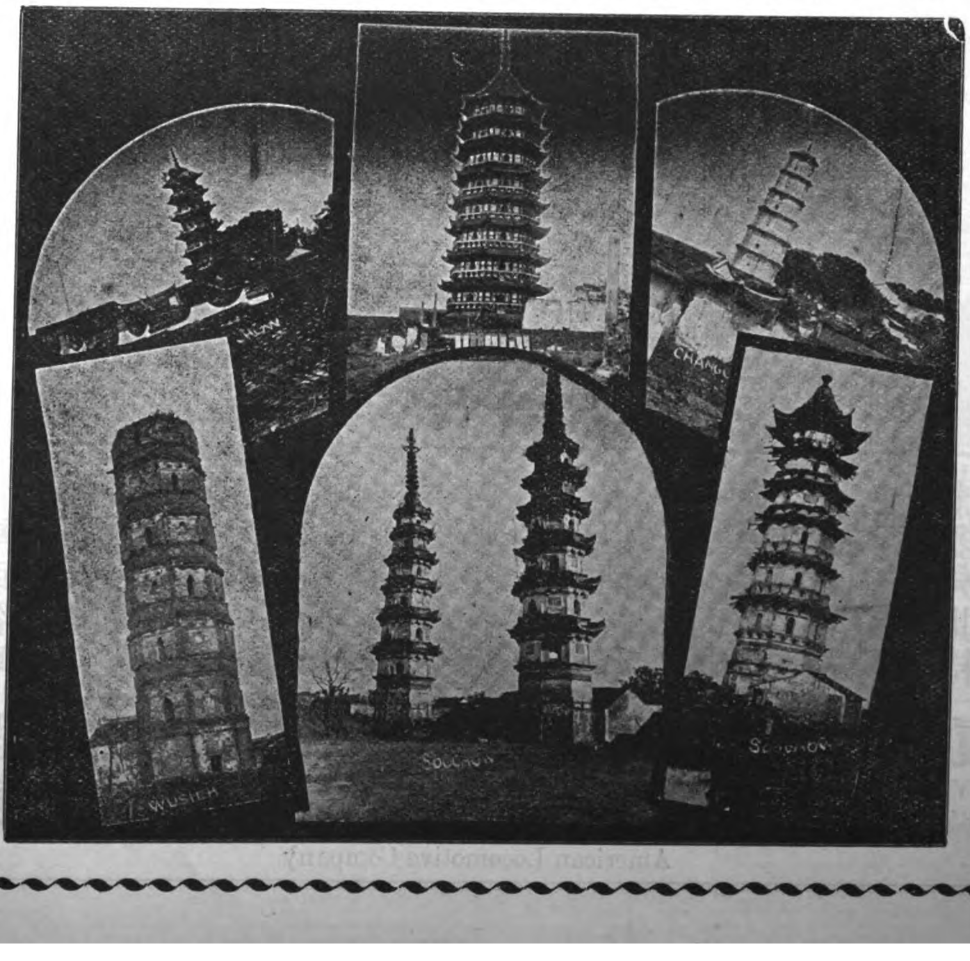
United States Steel Products Company

# 滬寧鐵路廣告

Shanghai-Nanking Railway

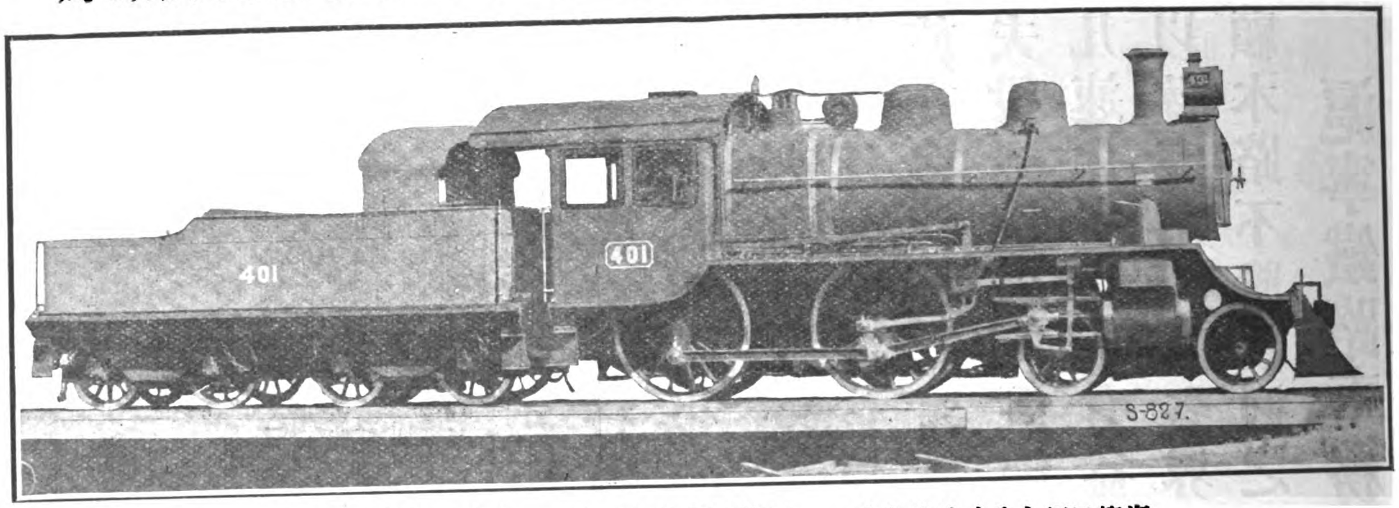
啓者本路工程均照歐西頭等鐵路最新款式建築軌道堅固車行穩捷往來時刻必依規定各站之候車客房停車月臺不但地方寬敞布置亦極周密往來搭客無擁擠窒塞之虞各等客車座位舒暢氣候咸宜頭二等之車尤爲美麗無匹電燈電鈴電扇厠所盥室色色完備並有餐車隨行以備搭客不時之需西膳茶點酒水俱全價廉物潔衛生合宜每晚加走夜車以便行人睡臥車上設有床位備客休息至淞滬一段之設施亦與幹路無異各站及車上之員司夫役招待搭客處處周到運貨亦甚穩凡速於交通上有益者無不日事改良以臻完備久蒙各界所贊譽倘承
光顧本路不勝歡迎之至

滬寧鐵路車務總管敬啟



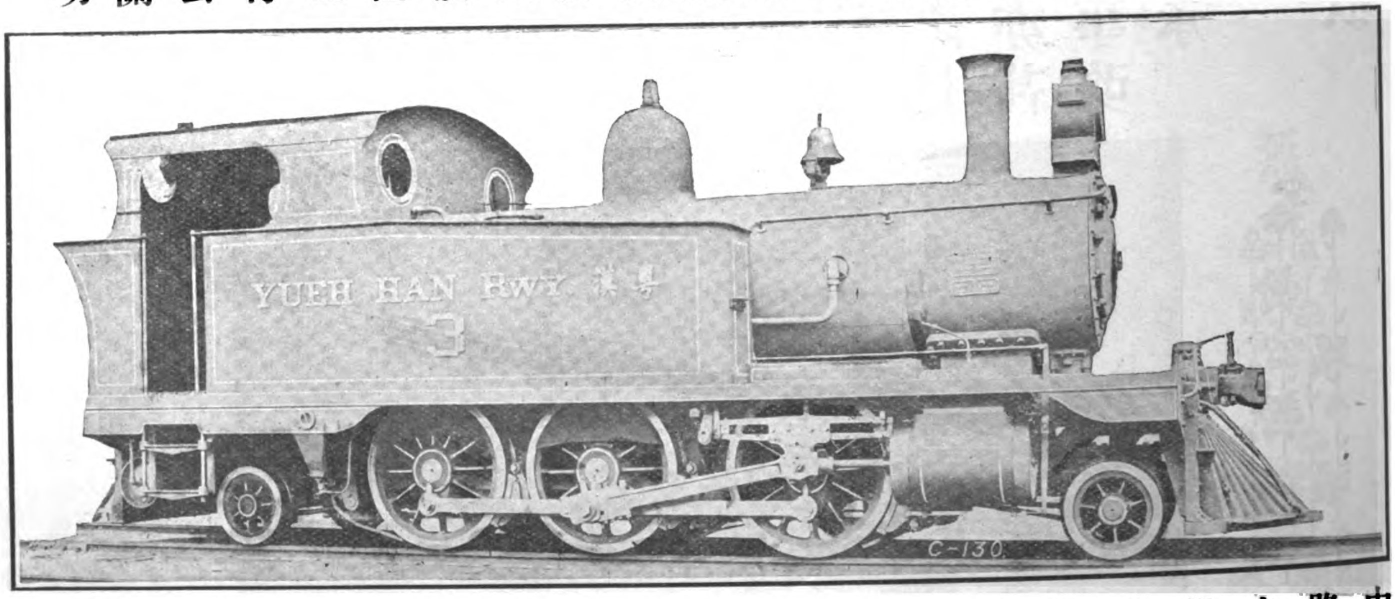
# 美國製造火車公司之火車極合用於中國鐵道

美國所製造之八輪火車頭即近時朝鮮鐵道所用之八輪火車頭甚爲合用已著明效拖客車至六輛或八輛其速力計一點鐘可駛二十至四十五英哩之遙按此種機關車式樣用於中國鐵道尤爲適宜




汽筒口徑十八寸長廿六寸　推挽輪長七十二寸　拖力一萬七千九百磅

火車頭之製造也在購辦者無不以最新式最適用爲貴而製造家亦必以最新式最適用者求合於購辦者之心爲能達其目的夫果欲合購辦者之心則必須經機關師之幾番商榷始可辦理如　貴客欲與本公司在中國之經理處三井洋行面商則本公司當派機關師就商一切概不需費




中國粵漢鐵路之六輪雙水櫃車拖帶貨車或客車或貨車客車連帶之列車其速力與上圖記八輪車頭快慢有異者因此車速力較小拖帶列車之數遂少但前後有兩小輪可無旋轉機而能進退自如故駛行之時便捷多矣其特別出色之處即在此兩小輪也

在中國經理處三井洋行 上海 天津 廣東 漢口 香港 厦門 盛京

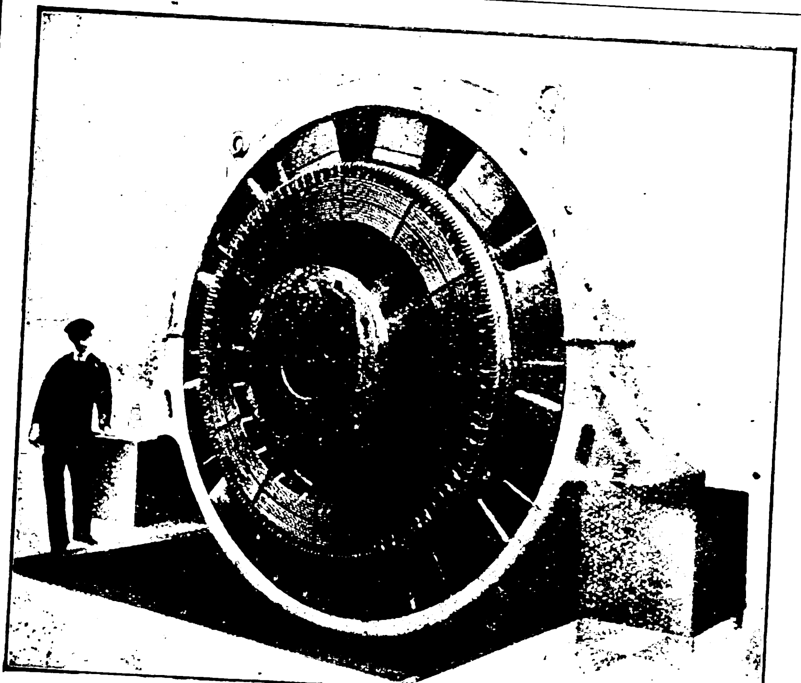
本公司在美京紐約禮拜堂街三十號 電碼

Locomotive New York
Annual Capacity; 3500 Locomotive.

American Locomotive Company

# 佛克耳司有限公司廣告

Vickers Limited



此圖爲車鈎汽機發電機克羅瓦德一千五百電流自五百至五百三十每分鐘旋轉一百八十次

本公司專造各式電機
直接車鈎汽機發電機
旋轉變壓器
脫羅交流發電機
馬達發電機
馬達及轉輸發動機

總公司開設英國京城百勞匯路
工廠在英國昔非特及柏名罕

# 麥加利銀行廣告

Chartered Bank of India, Australia and China

本銀行爲皇家所特許立案之銀行開設於英國倫敦監督門第三十八號
資本英金一百二十萬鎊
公積英金一百八十萬鎊
專做匯兌以及銀行各種營業事務今將經理及分行開列於后

經理處及分行列后

愛立灼　曼谷（暹羅）巴塔菲亞（爪哇）孟買（印度）加爾各答（印度）廣東　西部　可倫坡（印度）特利（印度）福州　海洪　漢口　香港　伊羅伊羅（小呂宋）依巴　卡拉基　克蘭神戸（日本）克拉蘭博　馬特拉司（印度）馬來半島（小呂宋）鈕約　北京　檳榔嶼　卜克　仰光　西貢　式拉卞　上海新加坡　蘇拉排耶　台浜　天津　橫浜

定期存款可來行面議利息每半年一付每年六月三十號及十二月三十一號爲付息之期

活期存款若在二百鎊以上則按月結算尾款常年利息二厘

本銀行之往來銀行列后

英吉利銀行　倫敦城及米蘭銀行
倫敦府及韋司朋司銀行　英吉利國立地方銀行　蘇革蘭國立銀行

組合司理　活脫海
副司理　傅蘭塞　柏來司登　同啓

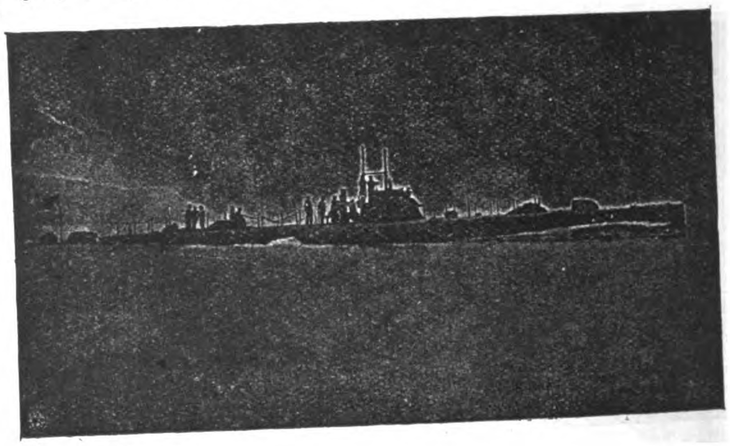
# 福祿氏磨機廠

The Fuller-Lehigh Pulverizer Mill.

陳立所中所陳立之機器不下
四千架而福祿氏磨機實首屈
一指且價廉而又能磨不易磨
之各物品　如白煤　石綿石
瀝青砧　硫酸重土　炮克
石脫烟煤　骨煤　炭精
水門汀石　水門汀磚　粉墨
炭金苗　黃泥　煤炭
焦炭　銅苗　白雲石　肉色
之石　燒過之黃泥　粉泥石
鑄鐵板面　福祿氏土　玻
璃　金石英　黑鉛　石膏
海持來石灰　鐵苗　磁土
鎔巖　石灰　石灰石　砂石
磁鐵石　大理石　赭石
礦苗　螺蛔　漆　燐石
膏　巴得蘭水門汀　拍特立
耳礦滓　石英　壳　硅酸
礦滓　石板　雲母石　屈破
立　大小砂石　赭鐵礦　皓
金　淨白粉
諸君若欲以磨成之煤生爐請
查本廠所積之粉煤　用本廠
所製展轆壓之用本廠之火轉
乾機乾燥之用本廠之磨而粉
磨之若承各界光顧請來函索
說明書爲禱
本廠所出福祿氏牌機器如
絞縺　輓輪　齒輪　磨管
砌襯　壓機　磨機
工廠修理以及特式之鑄品
均可代辦請閱第五十號目
錄可來信索取
萊哈車子車輪車軸工廠白



# 飛愛山喬其哇有限公司出售海軍戰利品廣告



頭等淹沒魚雷艇
水雷坑道
炸藥隧道　消滅敵人水雷之用
形如浮桶之水面炸擊器
海底防範各種之軍械
各種電力發動之快行汽艇

Fiat-San Giorgio, Ltd., Spezia (Italy)



# 日本 三菱長崎造船廠

主要製作品
郵客旅貨便
物石油槽汽
船達頻汽船
快遊船各種
兵船各種汽
機汽鑵及電
氣機械

特許製作品
巴遜斯式達
頻同式發電
機斯董式滿
嘎黃銅公杜
拉普羅冷汽
機威耶式抽
水抽氣各機
暨爾特抽氣
機

海難救助船
大浦丸(七百
拾六噸)

船渠及船架
乾船渠叁基
船架壹基而
第叁乾船渠
係蘇士以東
最大者

工場地基及職工數
拾叁萬玖千
坪壹萬餘名

Mitsu Bishi Dockyard & Eng. Works

## 美國尼馬司公司廣告

E. I. du Pont de Nemours & Company.

本公司爲全球最大之製造炸藥公司專製炸藥轟炸膠及開煤礦用之安全火藥轟炸火藥響墩電氣響以電氣轟炸各種機器已有百年之久素爲全球所公認推爲本公司所製者爲首屈一指

且所製之火藥均包裹妥貼以便運往各國不致有虞

本公司所出安全火藥專用於開煤礦業經由美政府之礦務部試驗審定

本公司有工廠三十所沿太平洋大西洋岸亦有工廠以便運輸

本公司設在美國達耳華省韋銘頓城

若承賜顧請通函爲禱

## 大愛門車鏈製造公司廣告

Diamond Chain & Mfg. Co.

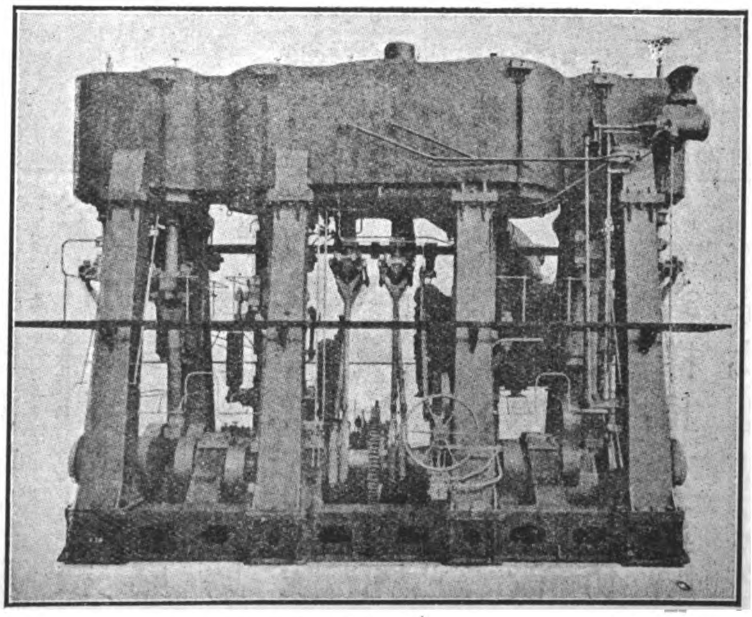
本公司專造各式車鏈如脚踏車氣車自動車馬達貨車以及傳力之各種車鏈均爲鋼質造成且爲頭等貨物業已二十五寒暑公認大愛門（譯金鋼鑽鏈）鏈爲各鏈之泰斗本公司所出之貨物質地堅實應用耐久且製造合度若接定單後卽可運輸不論用何種國文字通信均可若欲索樣本目錄或價目表者請來函詢問可也

本公司開設美國印第安省印第安波利斯城

## 英國東北輪船機器公司廣告

North Eastern Marine Engineering Co., Ltd.

本公司專造三次或四次自漲力汽之合抵力汽機及平置水輪以及各種船隻



此圖爲四次自漲力汽之合抵力汽機計馬力四千八百匹

# 南滿鐵路公司廣告

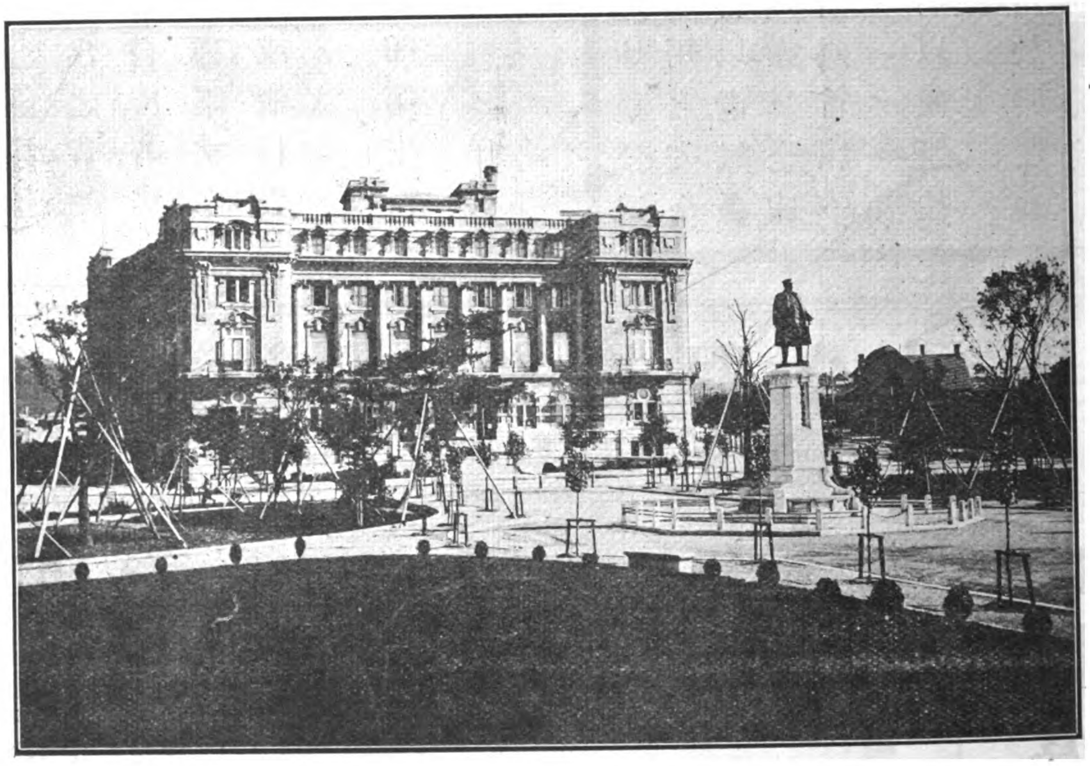
South Manchuria Railway Company, Dairen

諸君何不乘今年假期之時往南滿一遊乎蓋該處地土高燥景緻秀美且爲歷史所載之戰地并有最寬大最佳美之大旅館爲旅行最愉快之地遊擊漁魚打球海水沐浴以及種種遊戲無不可行且更有特異點綴爲近時所改革者

諸君除此外尚有他需乎若一遊於該地待返家後則必神清氣爽爲從來所未有

**欲知假期消遣之法**

**可詢問旅行事務所**



大連夏賣多旅館

除輪軌可達外在大連(爲特異之城及海口使人興趣)星ケ浦(爲中國北方之最佳美浜海躲避所)旅順口(爲日俄戰後留有毀壞砲臺之處)奉天(爲滿洲之京城有美麗之皇宮皇陵可以參觀)長春(爲東三省之咽喉且有三國鐵路之通系)均設有新式之旅館均仿歐洲式樣且在撫順(爲世界最要煤礦之一)設有總會

諸君若欲知詳細請來信索取有美麗圖畫之指南書不索分文

斐律濱全島銀行即原日之西班牙斐律濱人銀行改名創設
在西歷壹千八百五拾壹年　準備資本壹千萬元已
收資本銀四百五拾萬元經斐島政府承認有附貯公
欵所有銀行營業事宜買賣滙單各埠處如　英國倫
敦滙票　法吧黎　西班牙馬德里　吧詩倫那　德
國伯林　咸北　澳洲西德尼　舊金山　芝加哥
香港與及一切總滙商市各區由電滙兌及附貯日息
長期或逐日收支其利息悉照市面行情酌議另設支
行在斐島屬之衣路埠其餘各埠皆設有代理人

倫敦 National Bank of Scotland, Ltd.　巴黎 Comptoir National d'Escompte
馬德里 Banco Hispano Americano　吧斯倫那 Crédit Lyonnais
伯林 Deutsche Bank　西德尼 Bank of New South Wales
紐約 Kountze Brothers　芝加哥 Continental & Commercial Nat'l. Bank
舊金山 Wells Fargo Nevada National Bank　香港 Banque de L'Indo-Chine
上海 International Banking Corporation　斐島詩務 International Banking Corporation.

本銀行寫字樓在嗎尼拉市些瀏帝大街門牌第拾號
總理人　樊挨示拂
協理人　馬山洛

The Bank of the Philippine Islands

## 德華銀行

總行在上海分設香港廣東
北京天津漢口青島濟南橫
濱神戶新加坡加耳各搭柏
林漢堡等處資本七百五十
萬兩創始於一千八百八十
九年利息活存者二釐存款
有定期者可向本行詢問兼
做各處滙兌總經理苐葛君

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本公司製造扯升機搿司令
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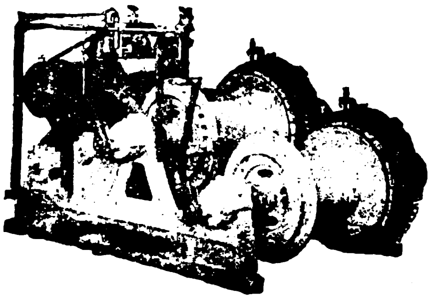
適用所定造之機器及電升
機已不下三萬六千具欲知
詳細請來函示知



公司開設於美國紐約省
自由街九十六號
歐洲經理處在英國倫敦
京城

## 森茂司製造公司廣告
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全球最著名之鐵床
廠之冠已有五十年
之閱歷且所配料作
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實且合於各地之天
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樣爲各國所宜
若欲知詳細式樣請
直接來函本公司索
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一千五百萬元

定期存款利息額如蒙函詢當卽通知
需用銀者如以相當之物作抵均可議辦
其餘各種銀行交易皆應有盡有
匯票則可匯至歐洲印度新金山美洲中國及日本各大商埠

Hongkong & Shanghai Banking Corporation



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加爾各答（印度）　漢口　舊金山
廣東　香港　上海
色盤　神戶　新嘉坡
哥倫　小呂宋　橫濱
墨西哥城　巴拿馬　倫敦

總董候白登
總理格林

International Banking Corporation

# The Bank of the Philippine Islands

## FORMERLY BANCO ESPANOL-FILIPINO

(ESTABLISHED 1851)

| | |
|---|---|
| Authorized Capital | P10,000,000.00 |
| Capital fully paid up | 4,500,000.00 |
| Reserve funds | 1,462,500.00 |

**General Banking Business**

Buys and sells drafts on London, Paris, Madrid, Barcelona, Berlin, Hamburg, Sydney, New York, San Francisco, Chicago, Hongkong, Yokohama, Kobe, Nagasaki and all other principal cities.

**Telegraphic Transfers**

Interest allowed on fixed deposits and current accounts at rates which may be had on application.

BRANCHES: ILOILO, ZAMBOANGA

AGENTS:

LONDON: National Bank of Scotland, Ltd.
PARIS: Comptoir National d'Escompte
MADRID: / BARCELONA: Banco Hispano-Americano / Crédit Lyonnais
BERLIN: / HAMBURG: Deutsche Bank
NEW YORK: National City Bank
SAN FRANCISCO: Wells Fargo Nevada National Bank
SEATTLE: Seattle National Bank

CHICAGO: Continental & Commercial Nat'l. Bank
AUSTRALIA: Bank of New South Wales, Sydney.
HONGKONG: Banque de L'Indo-Chine
SHANGHAI: Bank of Territorial Development of China, Ltd. / International Banking Corporation
CEBU: International Banking Corporation
YOKOHAMA: / KOBE: Yokohama Specie Bank, Ltd.
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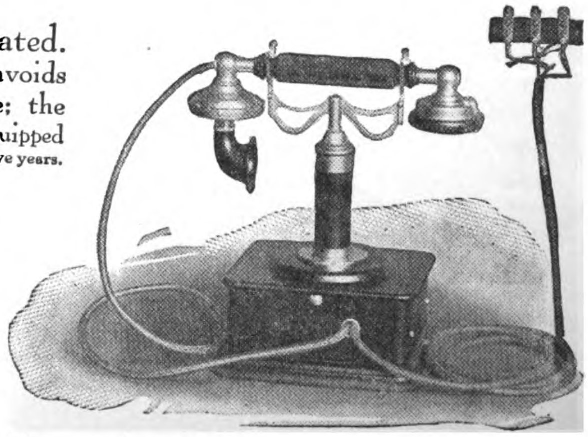

## Kellogg Switchboard and Supply Company

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# THE FAR EASTERN REVIEW

遠東時報

Engineering

Finance ❋ Commerce

Vol. XIII., No. 5 SHANGHAI ✣ PEKING ✣ MANILA October, 1916

GENERAL FENG KUO-CHANG
VICE-PRESIDENT OF THE REPUBLIC OF CHINA

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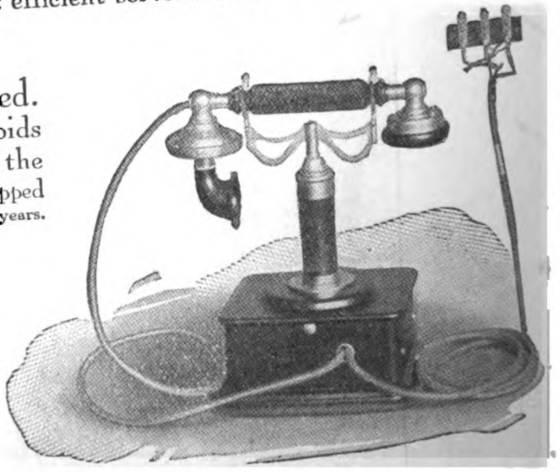

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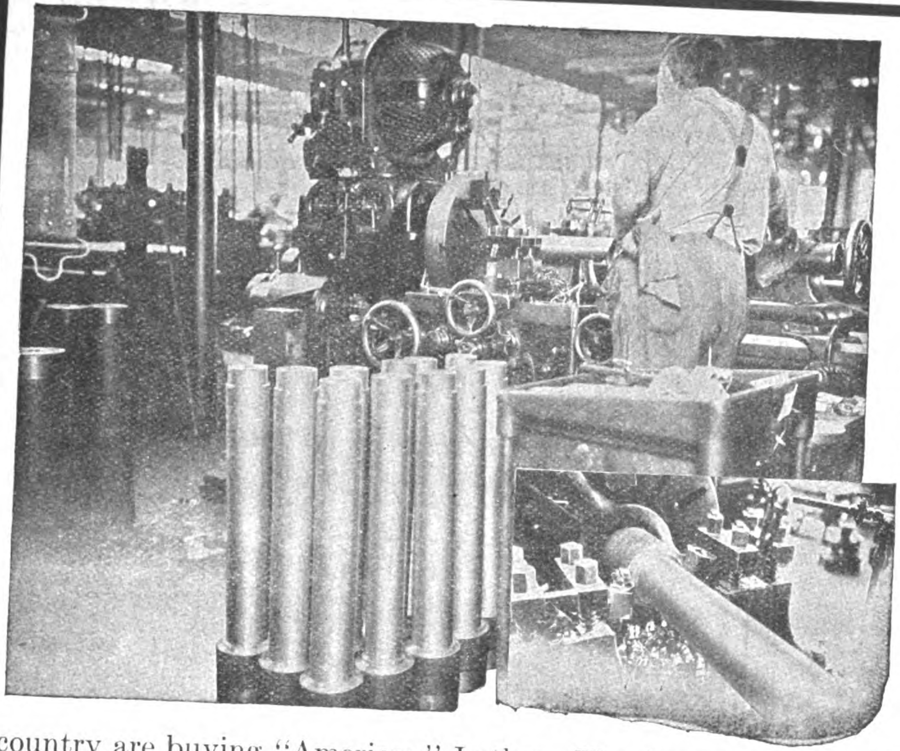

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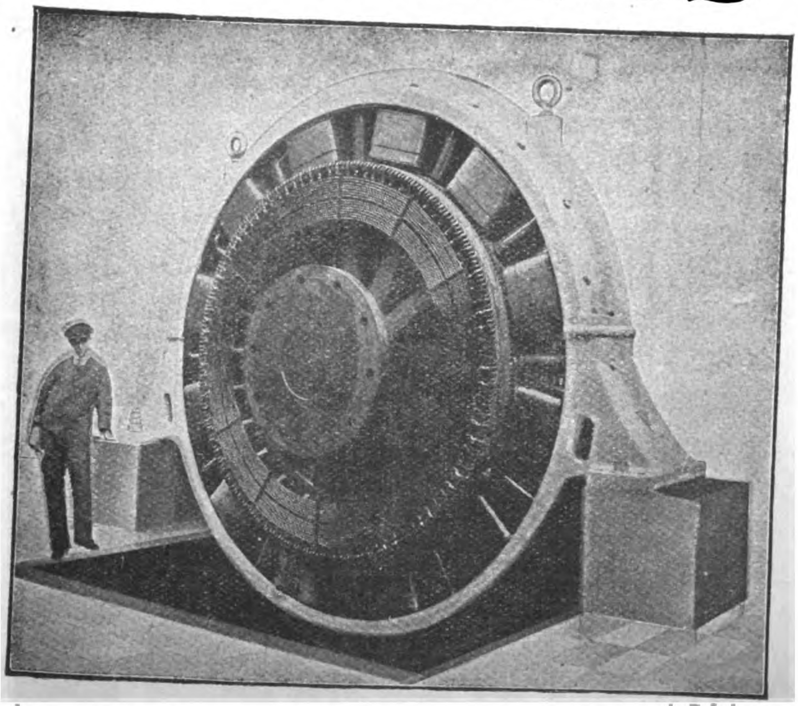

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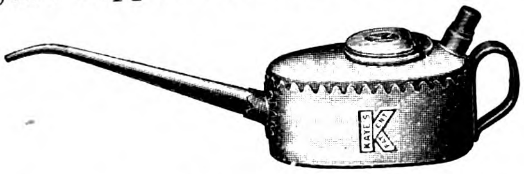

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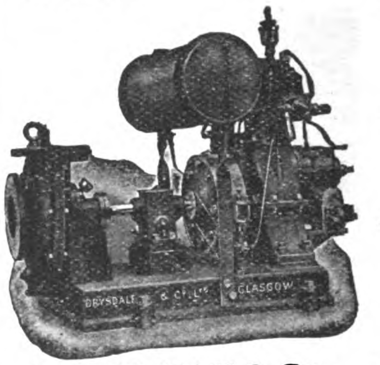


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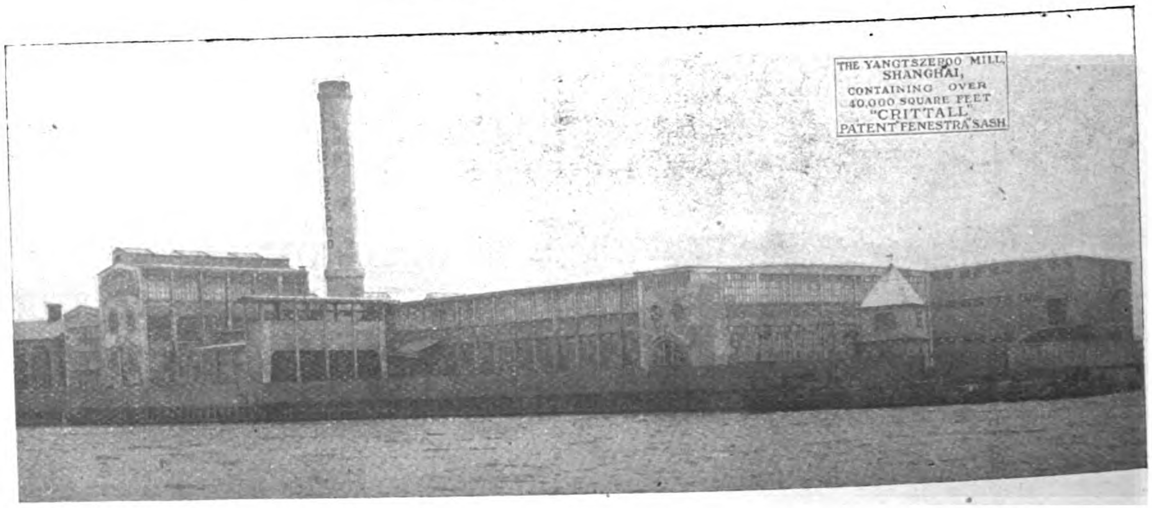


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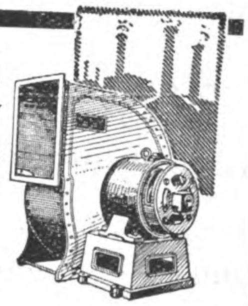

reduce working costs and increase efficiency wherever they are installed.
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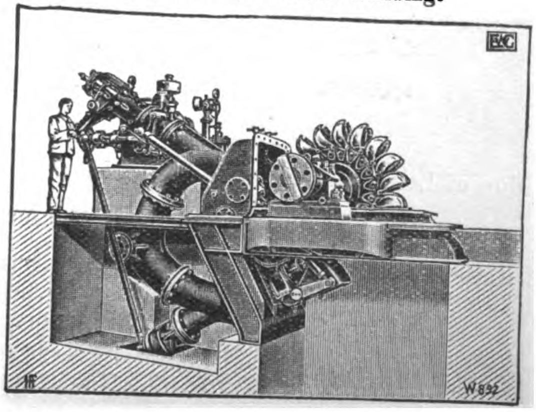

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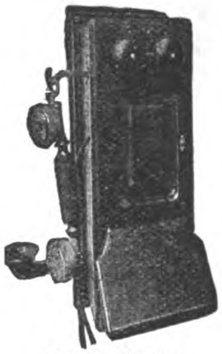

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**Head Office: Yokohama, Japan**

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| *Capital Subscribed* | Yen 48,000,000 |
| *Capital Paid up* | ,, 30,000,000 |
| *Reserve Fund* | ,, 20,800,000 |

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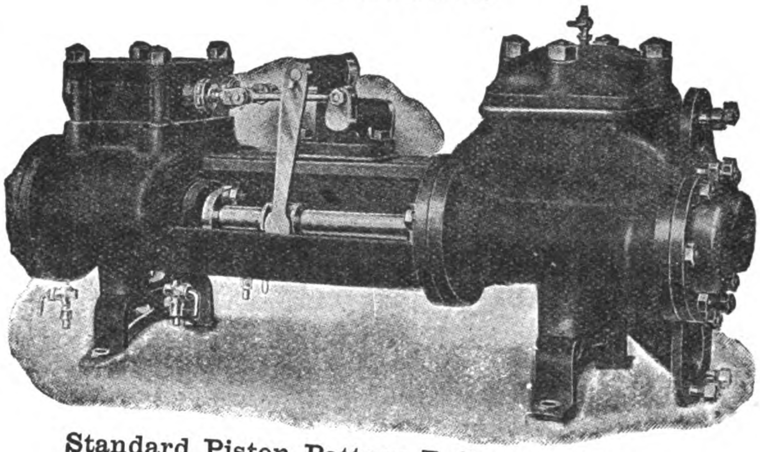

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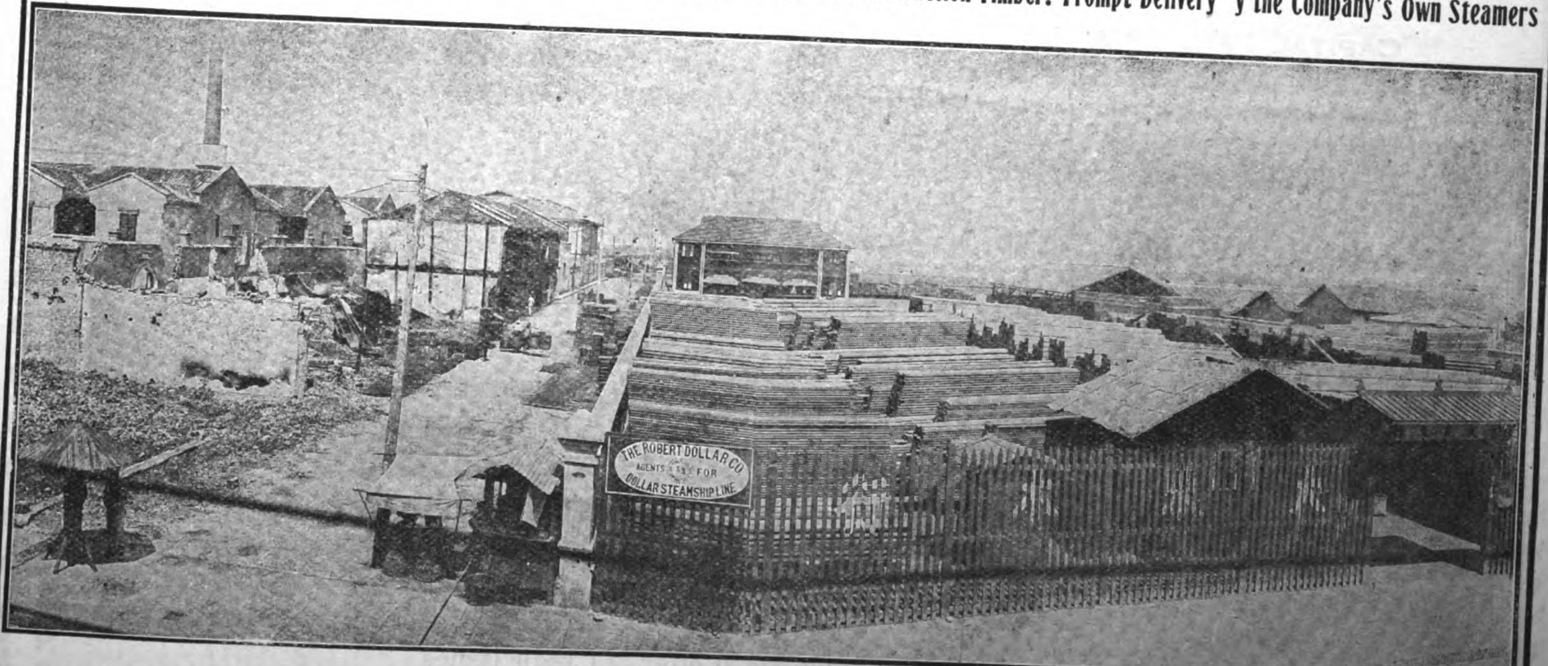


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—Silver, .. .. .. .. .. 18,000,000 — $33,000,000
Reserve liability of Proprietors, .. .. .. .. $15,000,000

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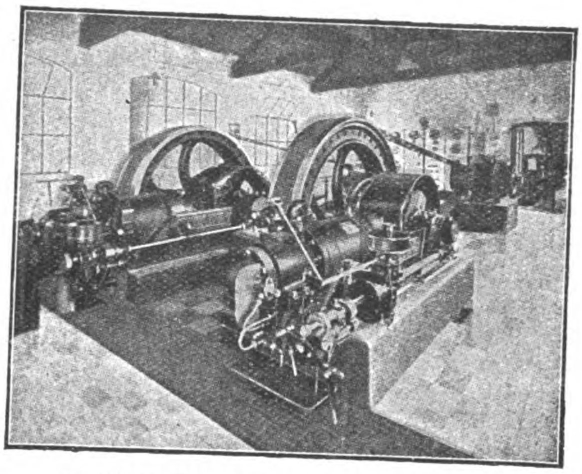

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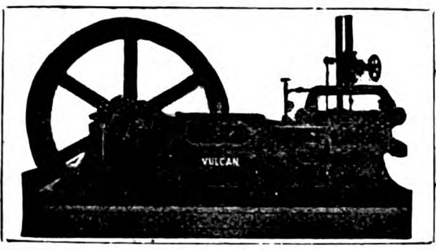
VUL  CAN

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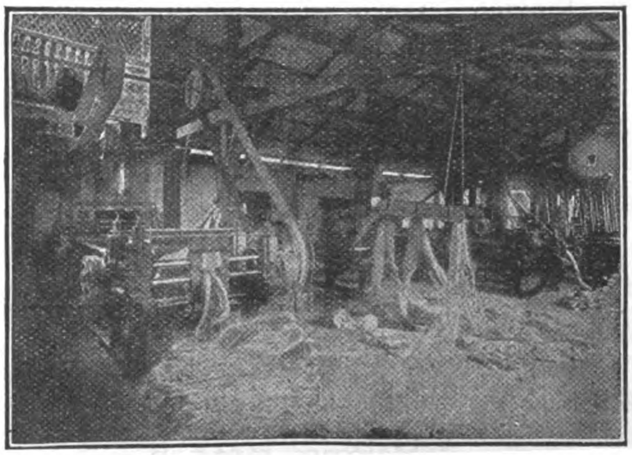

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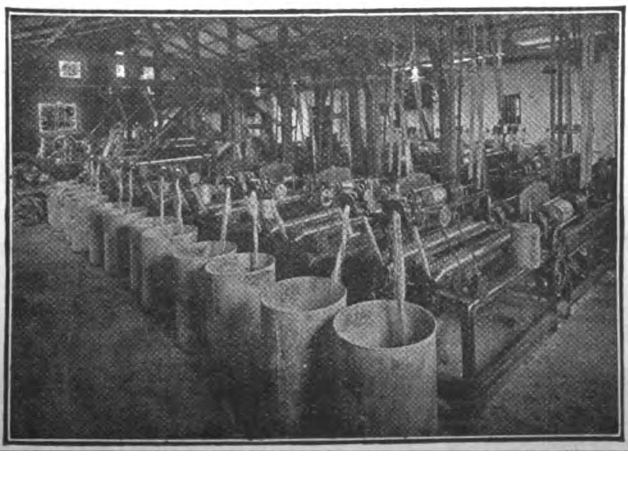

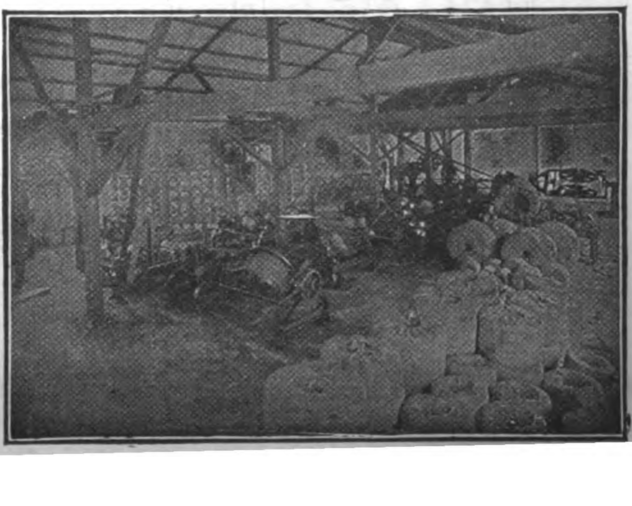

THE

# BANK OF CHINA

## Government Bank

(Specially authorised by Presidential Mandate of
15th April, 1913)

**Authorised Capital: $60,000,000.00**
**Paid up Capital: $10,000,000.00**

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## Branches and Sub-Branches:

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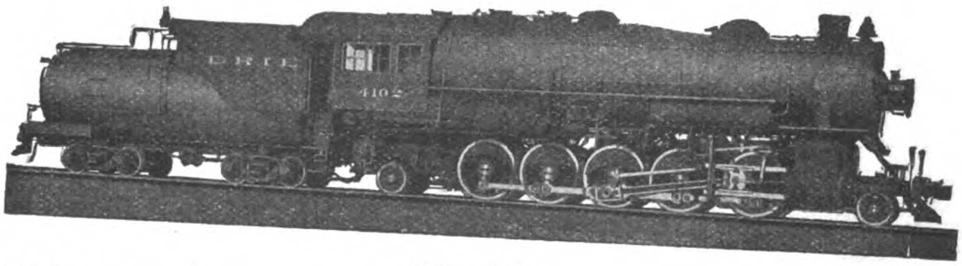
## Peking Branch

Interest allowed on current accounts and Fixed Deposits. Terms on application. Every description of Banking business transacted; loans granted on approved securities. Special facilities for Home exchange.

# A NEW 2-10-2 TYPE



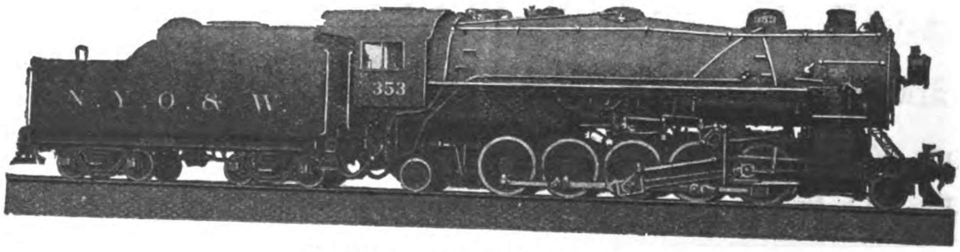

ERIE RAILROAD

Total Weight of Engine, 401,000 pounds; Weight on Drivers, 335,500 pounds; Diameter of Drivers, 63 inches; Tube Length, 17 feet; Boiler Pressure, 200 pounds; Cylinders, 31x32 inches; Maximum Tractive Power, 83,000 pounds

2-10-2 type locomotives, with their large tractive power, combined with sufficient boiler capacity and an ample factor of adhesion, are attracting the attention of railroad officials.

Many railroad officials when considering more powerful locomotives, have had to eliminate this type because of its long rigid wheel base.

Lateral motion driving axle and boxes were applied to the locomotives illustrated to reduce the rigid wheel base to that which is in common use on locomotives of smaller capacity, and at the same time secure the advantages of the ten-coupled wheel arrangement with the resulting increased capacity of the locomotvie.




NEW YORK, ONTARIO & WESTERN RAILWAY

Total Weight of Engine, 352,500 pounds; Weight on Drivers, 293,000 pounds; Diameter of Drivers, 57 inches; Tube Length, 17 feet; Boiler Pressure, 190 pounds; Cylinders, 28 x 32 inches; Maximum Tractive Power, 71,200 pounds

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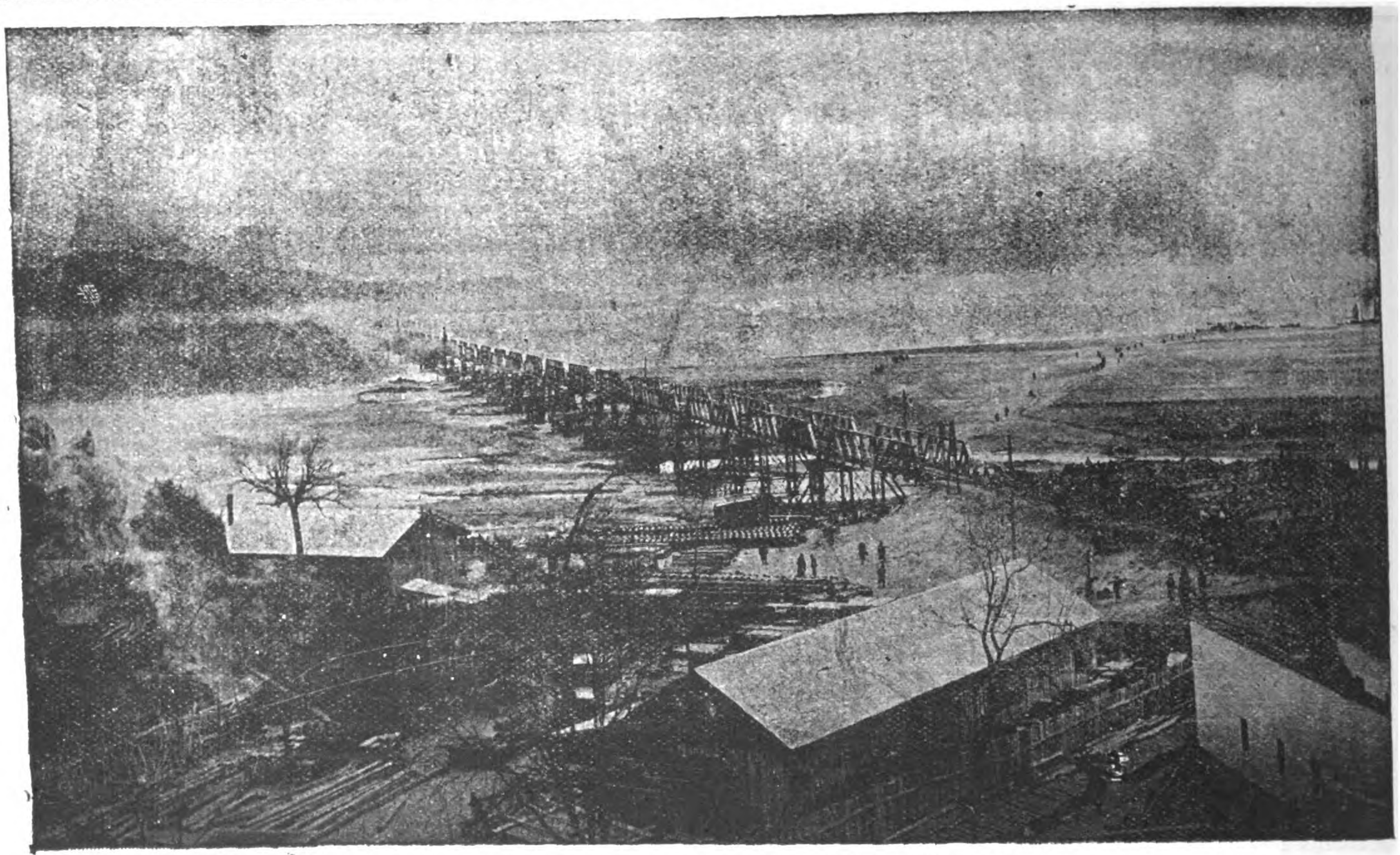

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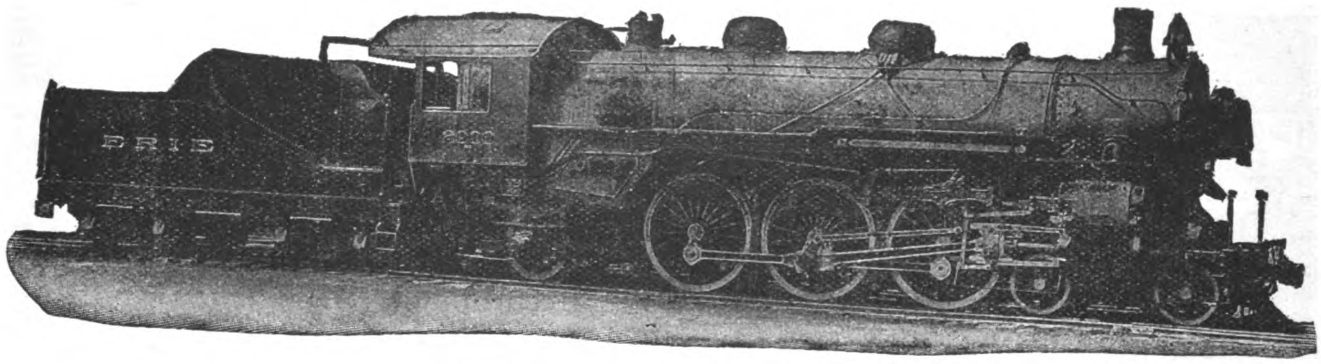


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This locomotive combines the latest improvements and developments in design, materials and economic devices for saving fuel, etc.

Built for the **ERIE RAILROAD** for heavy fast passenger service where maximum capacity was desired.

GENERAL DIMENSIONS AS FOLLOWS:

Cylinders, 27 × 28 inches
Driving wheel base, 14 ft.
Total Wheel base, 36 ft. 2 inches
Drivers, diameter 79 inches
Boiler, straight locomotive type
Boiler diameter 79 inches
Weight on drivers, 176,000 lbs.
Total Weight, 287,000 lbs.
Tractive Power, 40,700 lbs.
Factor Adhesion, 4.24
Superheater, Schmidt
Valve motion, Baker

Our **PLANT** is equipped with the latest and most improved machinery, which enables us to build any type or size locomotive required.

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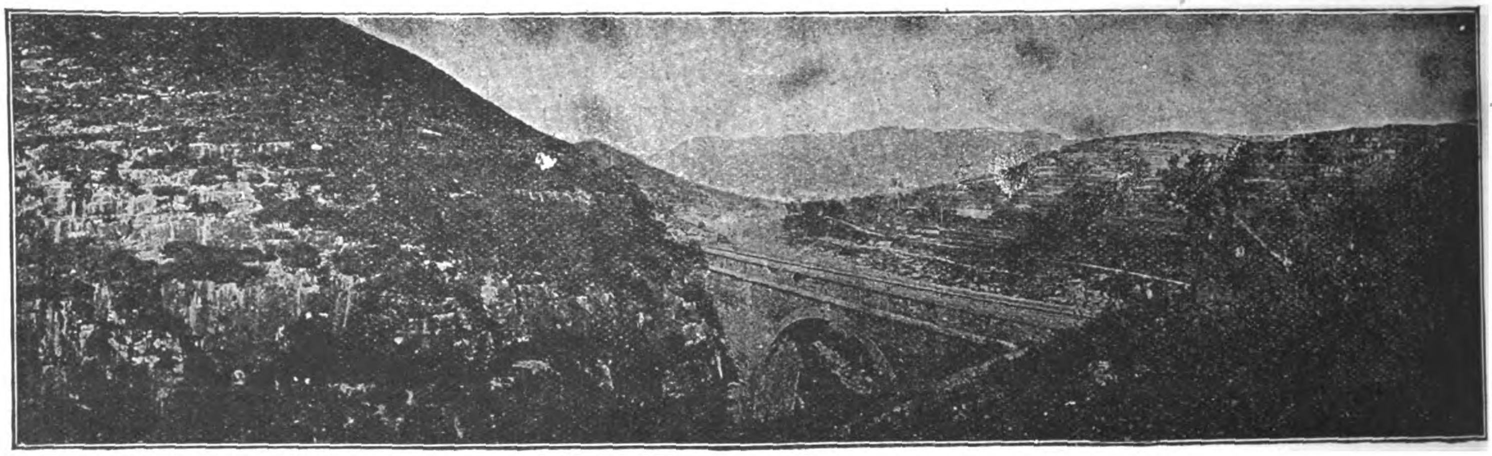
# Chinese Government Railways

## The Cheng-Tai Railway

**(CHINESE GOVERNMENT SHANSI LINE—CHENGTINGFU TO TAIYUANFU)**



VIEWS ALONG ROUTE OF CHENG-TAI RAILWAY

The trains of this line connect with the through service of the Peking-Hankow Railway, affording Travellers the opportunity of seeing the most picturesque part of China. The line passes through a mountainous section of country, rich in Mineral Resources to the Provincial Capital of Shansi at Taiyuanfu. This interesting city is a great educational center, and famous for the fine quality of its artistic embroideries.

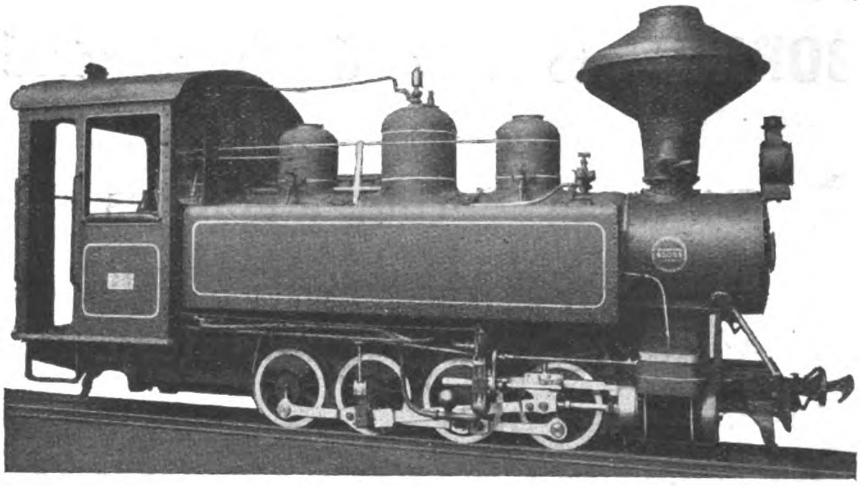
## The Peking-Kalgan Line

***"THE ROAD TO THE GREAT WALL"***

This line follows the ancient caravan route and military highway from Mongolia into China by the way of the historic Nankow Pass. This pass is the Key to Peking, and Kalgan is the gate of the Country. From here the great camel caravans set out on their long journeys across Mongolia to Siberia and Central Asia. This old frontier mart, retaining its time-honored characteristics, one of the most interesting sights of the Old World, is made accessible by the new railway. The line also carries the passenger in two hours from Peking to Nankow, when the Great Wall of China and the Ming Tombs may be seen. A foreign hotel is operated by the railway authorities at Nankow, where chairs and guides may be secured for the Tombs.

# PLANTATION LOCOMOTIVES

The requirements of plantation service are many and varied. Tracks are frequently light, and of temporary construction; curves are sharp, and graded are steep. In some cases, where there is a long haul from the fields to the mill, the conditions approximate those found in road service.



EIGHT COUPLED TANK LOCOMOTIVE, BUILT FOR H. E. OVING, Jr., JAVA

| | |
|---|---|
| Cylinders, $9\frac{1}{2} \times 12$ inches. | Total heating surface, 284 sq. ft. |
| Driving-wheels, diam., $23\frac{1}{2}$ inches. | Weight, total engine, 30,000 lbs. |
| Steam pressure, 170 lbs. | Tank capacity, 320 gallons |
| Grate area, 6.5 sq. ft. | Tractive force, 6,650 lbs. |

The illustration shows one of two Baldwin locomotives, recently built for plantation service in Java. Conditions here require light wheel-loads, to be carried and the weight is distributed over four pairs of driving-wheels. The track gauge is 700 MM., and the sharpest curves are of 20 meters radius. The locomotive as shown is equipped for burning wood, but rocking grates and a straight stack have also been furnished, so that it can be easily changed to a coal burner. The equipment includes a simple arrangement of Marshall valve gear, and a Baldwin steam brake. The two middle pairs of wheels have plain tires, so that the locomotive can easily traverse sharp curves.

The Baldwin Locomotive Works has built locomotives for all kinds of plantation service. Specifications will be prepared and submitted, covering locomotives of any type or size required.

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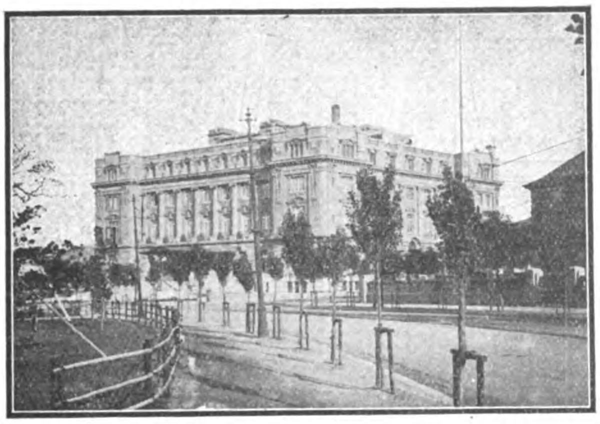

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Travellers from Europe via Siberia by the Through Express arrive at Dairen in time to catch the S.M.R. Company's Weekly Mail and Passenger Steamer "Sakaki Maru" of the Dairen-Tsingtao-Shanghai Line. This Steamer is turbine driven, equipped with wireless telegraphy, and carries a doctor on board. The "Kobe Maru," which also leaves Dairen weekly, plys direct to Shanghai without calling at Tsingtao.

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The S.M.R. Co. has established, under its direct management, a series of Yamato Hotels at Dairen, Hoshigaura, Port Arthur, Mukden, and Changchun. All on European lines. Cook and Son's Coupons accepted. Tel. add.: "Yamato"

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The beautiful climate and scenery of Manchuria is fast popularizing it as a health and holiday resort, and special seaside colonies have been established at Hoshigaura (Star Beach), near Dairen, and Ogondai (Golden Beach), near Port Arthur.

***Of Interest to Shippers.***

In addition to its Dairen-Tsingtao-Shanghai Liners, the S.M.R. Co. run a fleet of cargo steamers between Dairen and Hongkong, calling at ports en route. Other Steamship Companies have regular services to and from Dairen. Particulars may be obtained from the Manager of the Wharf Office, Dairen.

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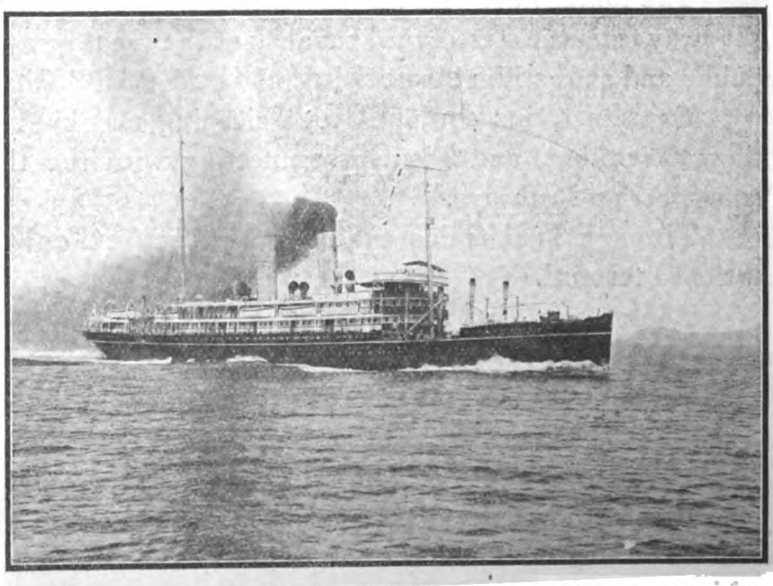
The S.M.R. Company's Railway and Steamer Tickets, Illustrated Guide Books, and Handbooks of Information can be obtained at all the Offices and Agencies of Messrs. Thos. Cook & Son, the International Sleeping Car and Express Trains Co., and the Nordisk Resebureau; the Nippon Yusen Kaisha, Shanghai; the S.M.R. Branch Wharf Office, Shanghai; or direct from the



S.M.R. Co.'s Dairen-Tsingtao-Shanghai Liner, "Sakaki Maru."

# South Manchuria Railway Company, Dairen.

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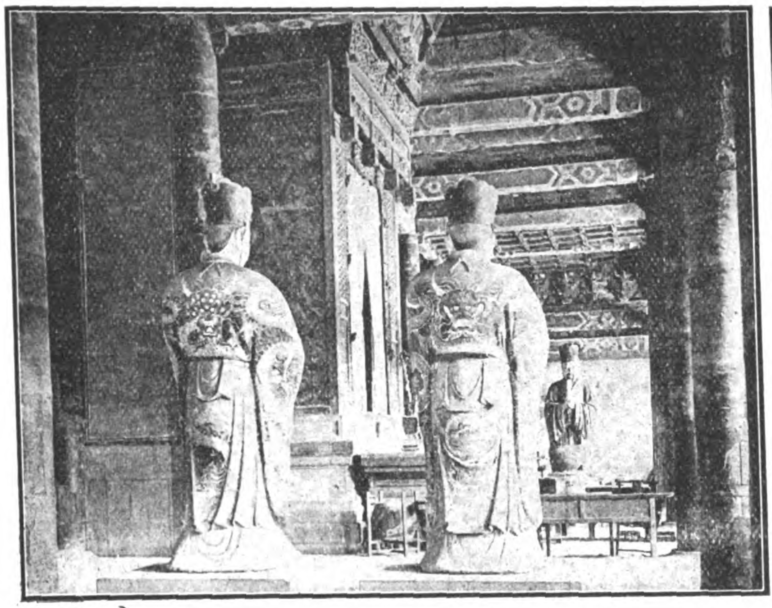
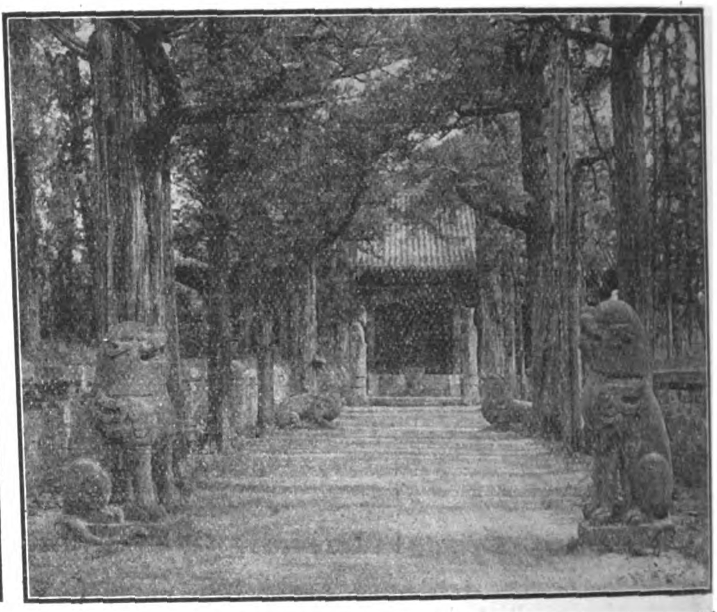
## CHINESE GOVERNMENT RAILWAYS

# TIENTSIN-PUKOW LINE





**Mukden-Peking-Kalgan-TIENTSIN-TSINANFU-HSUCHOWFU-PUKOW-Nanking-Shanghai.**

**all by rail only.**

Being the **quickest, surest and most convenient** connection between Shanghai on the one and Tientsin, Peking, Kalgan, Mukden and the **Siberian route on the other side,** this railway represents **a saving of many hours, of many troubles,** worries and inconveniences for the busy merchant, the home tripper on short furlough.

The tourist, the globe trotter travelling with more leisure and bent on seeing things, it takes right away from the stereotyped banality of the great ports, takes him through many provinces of the vast republic and shows him **something of the "real" China,** of its people, its history and its beauty.

Express trains equipped with sleeping and buffet cars run once a week each way between Pukow (Nanking) and Tientsin connecting with the through service of the South-Manchuria and Trans-Siberian Railways.

Through mail trains equipped with **buffet cars run daily each way** between the before mentioned termini.

The crossing over the Yangtsekiang between Nanking and Pukow is effected by means of a modern 100-tons twin-screw ferry boat.

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Codes: A B C 5th Edition; Broomhalls' (with Suppl. No. 1).

**Tientsin, May 1st, 1915.** **The Tientsin-Pukow Railway Administration.**

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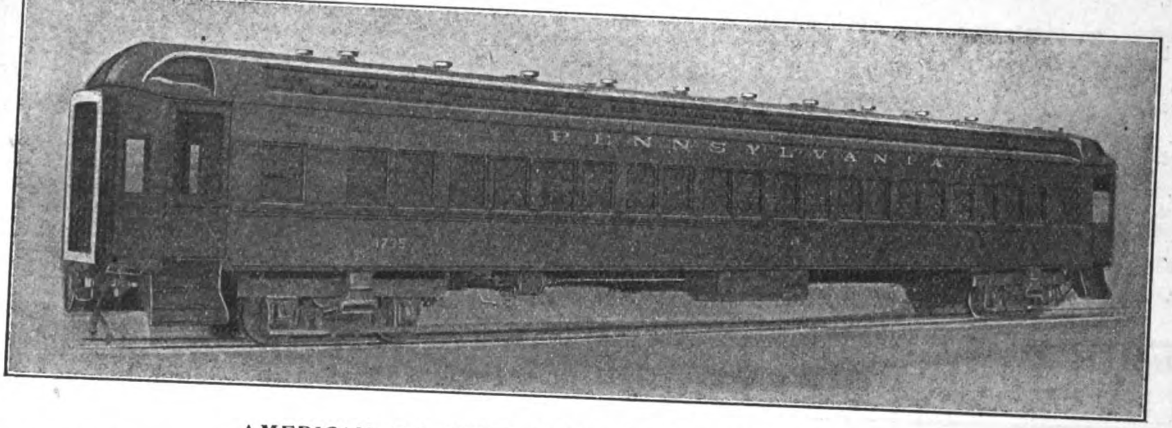
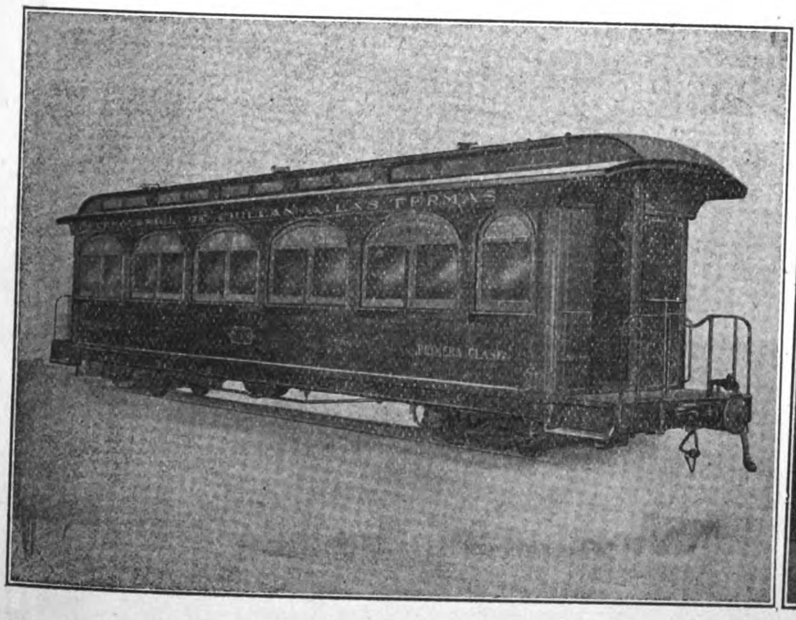
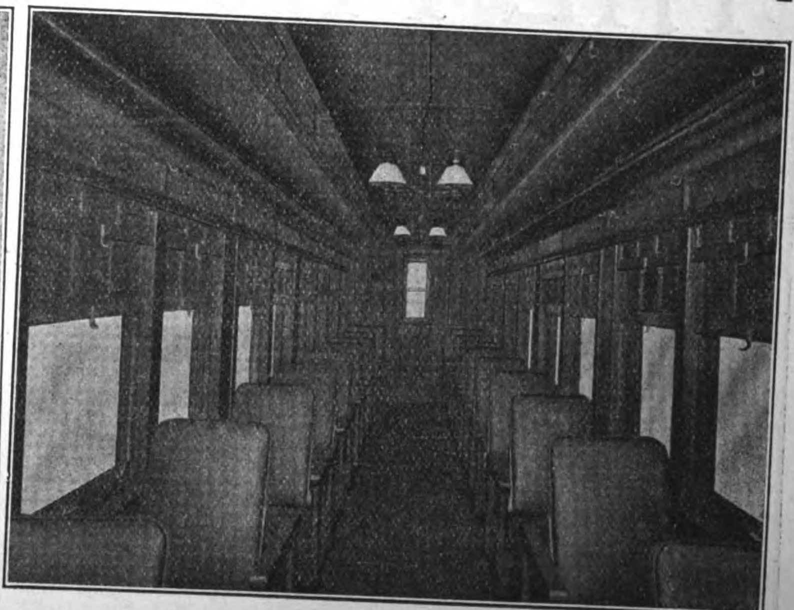
## CAR BUILDERS

OUTPUT { 150,000 FREIGHT CARS / 1,500 PASSENGER CARS / 2,000,000 CAR WHEELS } PER ANNUM




AMERICAN ALL STEEL FIRST CLASS PASSENGER CAR
Gauge 4'-8" (1.435 M.). Body Length 70'0" (21.336 M.). Places 88. Weight 115,000 lbs. (52,200 Kilos.)





FIRST CLASS COACH FOR CHILDIAN STATE RAILWAYS
Gauge 23⅝" (60 C.M.). Body Length 31'-9" (9,677 M.). Width 6'-4" (1,930 M.). Places 20; Weight 20,600 lbs. (9,400 K.G.)

Export Representative

## American Car and Foundry Export Company

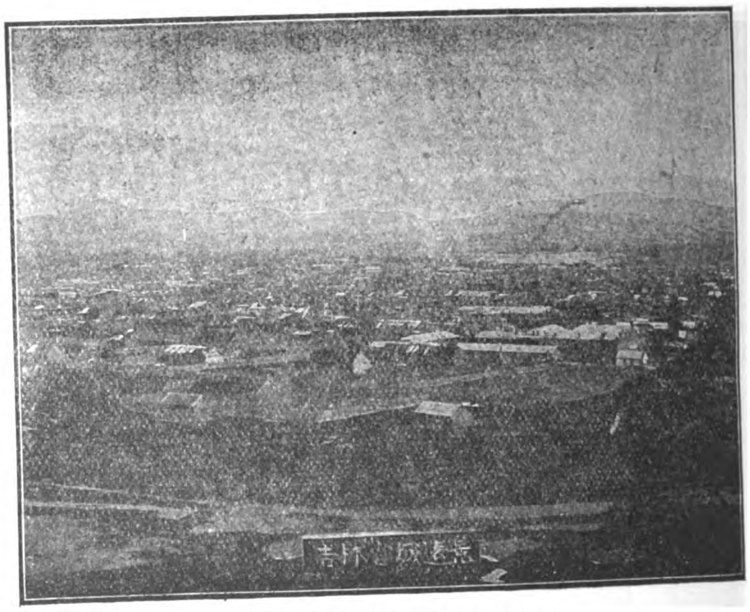
165 BROADWAY — NEW YORK

# 中華民國政府吉長鐵路行車時刻表

# CHINESE GOVERNMENT RAILWAYS KIRIN-CHANGCHUN LINE.

## TIME TABLE.

| DOWN TRAINS Daily | | | STATIONS. | | UP TRAINS Daily | |
|---|---|---|---|---|---|---|
| Mixed | Mail | | | | Mail | Mixed |
| P.M. | A.M. | | | | P.M. | A.M. |
| 2.50 | 7.30 | dept. | TOUTAOKOU | arr. | 6.10 | 10.47 |
| 2.58 | 7.38 | arr. | CHANGCHUN | dept. | 6.00 | 10.37 |
| 3.05 | 7.41 | dept. | | arr. | 5.55 | 10.31 |
| 3.39 | 8.12 | arr. | KALUN | dept. | 5.24 | 9.57 |
| 3.43 | 8.14 | dept. | | arr. | 5.22 | 9.55 |
| 4.15 | 8.46 | arr. | YINMAHO | dept. | 4.50 | 9.22 |
| 4.18 | 8.48 | dept. | | arr. | 4.48 | 9.20 |
| 4.33 | 9.02 | arr. | HSIACHIUTAI | dept. | 4.34 | 9.05 |
| 4.38 | 9.04 | dept. | | arr. | 4.32 | 9.03 |
| 4.50 | 9.16 | arr. | YINGCHENGTZE | dept. | 4.20 | 8.50 |
| 4.53 | 9.18 | dept. | | arr. | 4.18 | 8.48 |
| 5.18 | 9.40 | arr. | TUMENLING | dept. | 3.56 | 8.24 |
| 5.26 | 9.50 | dept. | | arr. | 3.50 | 8.18 |
| | | arr. | CHAOCHIATIEN | dept. | 3.31 | 7.58 |
| 5.45 | 10.10 | dept. | | arr. | | |
| 6.09 | 10.31 | arr. | HUAPICHANG | dept. | 3.09 | 7.30 |
| 6.14 | 10.33 | dept. | | arr. | 3.07 | 7.23 |
| 6.30 | 10.46 | arr. | KUTIENTZE | dept. | 2.54 | 7.05 |
| 6.32 | 10.47 | dept. | | arr. | 2.53 | 7.03 |
| 6.49 | 11.03 | arr. | KIUCHAN | dept. | 2.37 | 6.48 |
| 6.53 | 11.05 | dept. | | arr. | 2.35 | 6.43 |
| 7.15 | 11.25 | arr. | KIRIN | dept. | 2.15 | 6.20 |



BIRD'S EYE VIEW OF KIRIN CITY

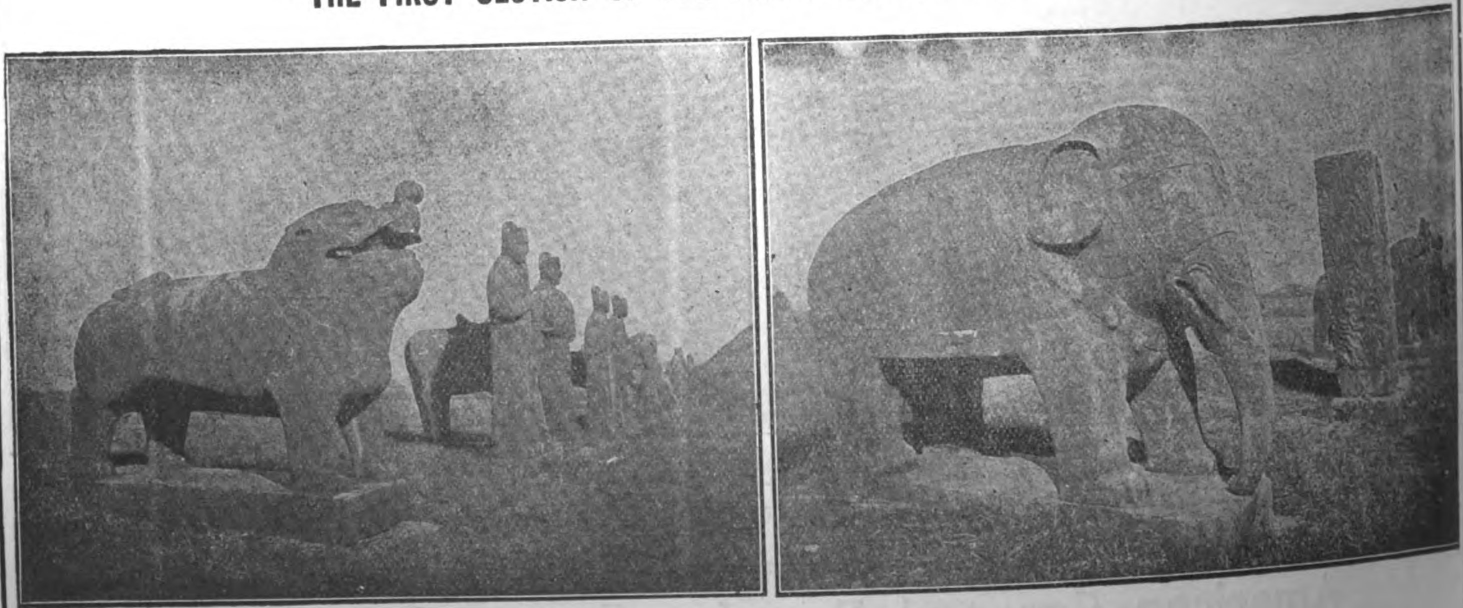
**NOTICE:**—"dept."=Departure. "arr."=Arrival.

1st July, 1916, and until further notice.

# THE PIENLO RAILWAY

## (KAIFENG-FU TO HONANFU)

## "THE FIRST SECTION OF THE PROJECTED CENTRAL TRUNKLINE"



THE SUNG TOMBS NEAR KAIFENG-FU ON THE PIENLO RAILWAY.

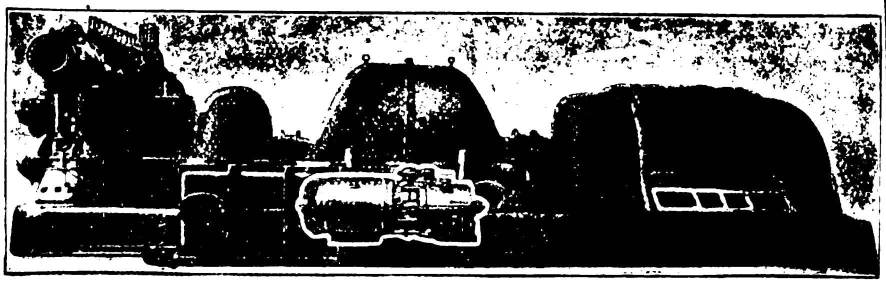
The line connects with the through service of the Peking-Hankow Railway at Tcheng Tchéou, enabling the traveller to visit Kaifengfu, the provincial capital of Honan, and the old capital of the Empire at Honanfu.

# General Electric Company

## Schenectady, N. Y., U. S. A.

### Products

Air Brakes
Circuit Breakers
Compensators
Compressors
Controllers
Converters
Cooking Devices
Fan Motors
Generators, Alternating and Direct Current
Generating Sets
Heating Devices
Hoists, Electric
Instruments
Lamps, Arc
Lamps, Incandescent
Lightning Arresters
Line Material
Locomotives, Mine, Railway and Industrial



**300-kw. and 30,000-kw. Curtis Steam Turbines**

## Large Steam Power Plants are now Universally Equipped with Turbine Generators

The small plant presents precisely similar opportunities for low cost of power as the large central station. Many of the determining factors are the same. The most important of these is the correct choice of the prime mover. High economy over a wide load range, freedom from shut downs, low maintenance: these are some of the elements necessary for cheap power production. In the small plant, as in the large, experience has shown the superiority of the Curtis type of turbine. The same principles apply to the 300-kw. as to the 30,000-kw., and the 300-kw. and other small size turbines are designed and built with the same care and perfection of detail, which characterize the world's largest turbine.

The result is that the small Curtis turbine has made possible the production of an uninterrupted supply of relatively cheap power.

5709

### FAR EASTERN REPRESENTATIVES

**Yokohama**—General Electric Company, 23 Water Street
**Yokohama**—Bagnall and Hilles, 42, Yamaschita Cho.
**Tokyo**—Mitsui Bussan Kaisha, Ltd., 1, Suruga Cho.
**Shanghai**—Andersen, Meyer & Co., 5 Yuen Ming Yuen Road
**Manila**—Frank L. Strong Machinery Co., Correspondent, 64-68 Calle Echague

### Products

Meters
Motors
Motor-Generators
Panel Boards and Cabinets
Projectors, Searchlight
Pumps, Electrically Driven
Railway Equipment
Rectifiers, Mercury Arc
Regulators
Rheostats
Supplies, General
Switchboards
Switches
Transformers
Turbine Generators
Watthour Meters
Wire and Cables
Wiring Devices

# Announcing—

the arrival of our Vice-President and Foreign Manager, Mr. H. M. Friesleben—who will be in Shanghai about November 4th, with a sample line of "Pacific" Plumbing Fixtures.

"Pacific" Plumbing Fixtures consist of a complete line of Vitreous China and Porcelain Iron Enamel Ware—Bath Tubs, Lavatories, Closets, Sinks, Trays, Drinking - Fountains, etc.

We are considering the appointment of agents to represent the "Pacific" line in China. Address all correspondence, care of Thomas Cook and Sons, Shanghai.

## "Pacific"

Plumbing Fixtures

MAIN OFFICES,
SAN FRANCISCO,
CALIFORNIA, U.S.A.

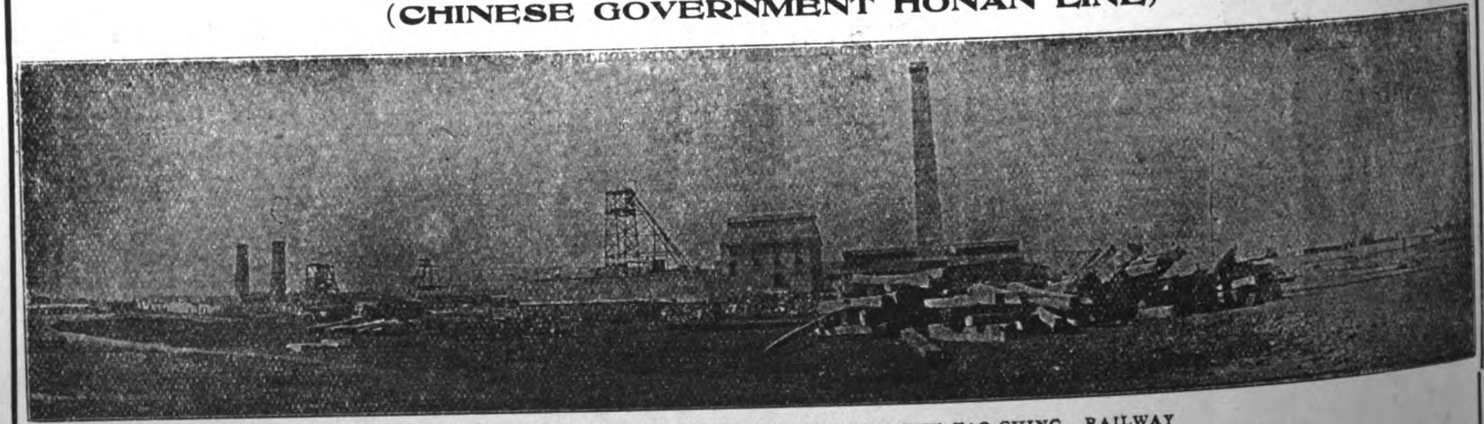
FACTORIES,
RICHMOND,
CALIFORNIA, U.S.A.

# CHINESE GOVERNMENT RAILWAYS

## THE TAO-CHING RAILWAY

### TAOKOU TO CHINGHUA

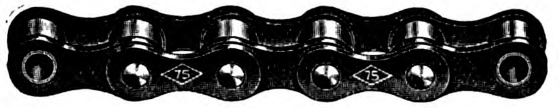
(CHINESE GOVERNMENT HONAN LINE)



GENERAL VIEW OF COAL MINES ON THE LINE OF THE TAO-CHING RAILWAY

## "China's Road of Anthracite"

THE TRAINS OF THIS LINE CONNECT AT SIN-SIANG-SIEN WITH THE THROUGH SERVICE OF THE PEKING-HANKOW RAILWAY. IT TAPS THE GREAT ANTHRACITE COAL DEPOSITS OF SHANSI, AND CONVEYS THE PRODUCTS OF THE MINES TO THE NEAREST NAVIGABLE RIVER.



# Diamond Chains

FOR

## Cycles and Motorcycles

Diamond Cycle Chains (furnished ½ or 1-inch pitch) are built for strength and wearing. High carbon steel, capable of withstanding a pressure of 140,000 pounds to the square inch, is used for the side links. All wearing parts, made from steels of special analysis, are heat-treated by a process recognized by authorities on heat treating as the most advanced.

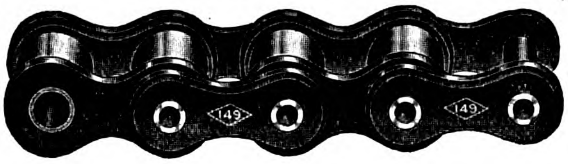
No. 149—⅝-inch pitch Diamond Motorcycle Chain was designed to meet the most severe service conditions. A special alloy steel is used for the rollers, making them practically unbreakable. The wearing parts are hardened by the same process as used for those of our heavy truck chains. Consider what these features mean in motorcycle service.

*Special care given to Export shipments.*
*Correspondence solicited in any language.*
*Catalogues, samples and prices on application.*

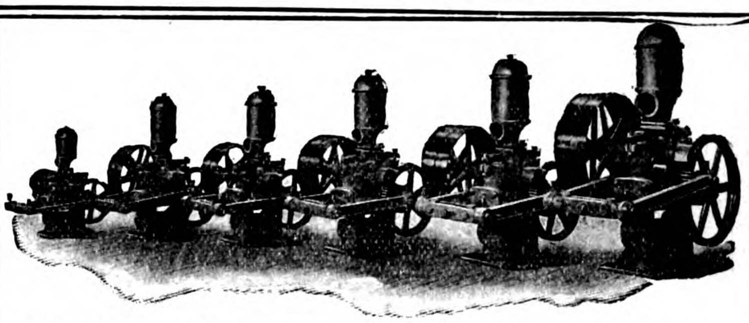
Australian Representatives: Acme Cycle Company, Melbourne.
Russian Representatives: International Manufacturers Sales Co., Moscow.

**DIAMOND CHAIN & MFG. COMPANY**
**Indianapolis, Indiana, U. S. A.**

Cable Code—A. B. C., 4th and 5th Editions.
Cable Address—"*Chain*", Indianapolis.







For Pumping Hot Water, Handling Condensation of Steam Heating Systems, Mine Pumping and General Water Supply, use

# GOULDS

## Fig. 1678 "Pyramid" Pump

This pump is similar to our famous line of Fig. 1531 "Pyramid" Pumps except that the cylinder is fitted with a removable cast bronze lining and both ends of the connecting rods are fitted with removable bronze bushings adapting this pump particularly to the above services.

The Fig. 1678 pump is built in six sizes ranging in capacity from 5 to 100 gallons per minute and is good for pressures up to 87 pounds or the equivalent elevation of 200 feet.

This line of pumps is of the highest grade construction, yet of the simplest possible design and embodies features not found in other pumps.

If you use pumps for any of the above services, let us send you complete information and prices.

**The Goulds Mfg. Co.** Main Office and Works **Seneca Falls, New York, U. S. A.**
*Cable Address: "Glavis, Seneca Falls"* *Codes: A. B. C., Liebers, West. Un.*
**ANDERSON, MYER & CO., Ltd., Shanghai, Tientsin, Peking, Kalgan, Hankow, Hong Kong**
**BAGNALL & HILLES, Gomei Kaisha, Yokohama PACIFIC COMMERCIAL CO., Manila**
*Agents for Power Pumps*

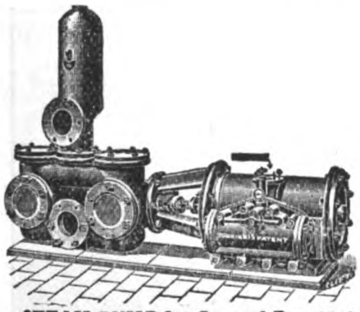


## *WE MANUFACTURE*

# PUMPS

**FOR EVERY PURPOSE**

To be worked by HAND, STEAM, BELT, WIND, WATER or ELECTRIC POWER.



STEAM PUMP for General Purposes.

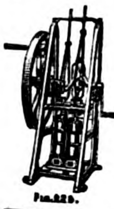
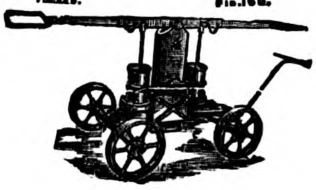
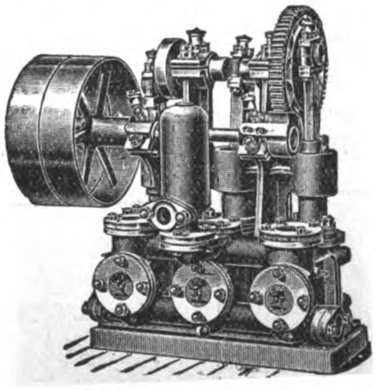
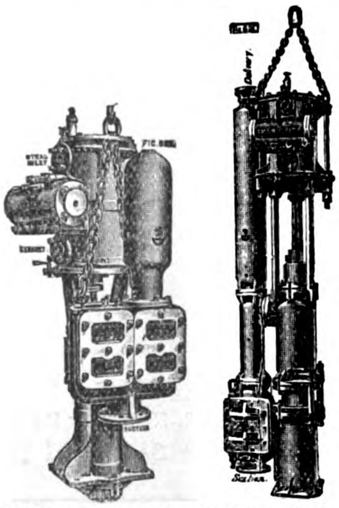


Fig. 228.

Fig. 168.







SINKING PUMPS for COLLIERIES, MINES, Etc.

Fig. 191.

*Write for "Eastern" List.*

# JOSEPH EVANS & SONS

(WOLVERHAMPTON) LTD.

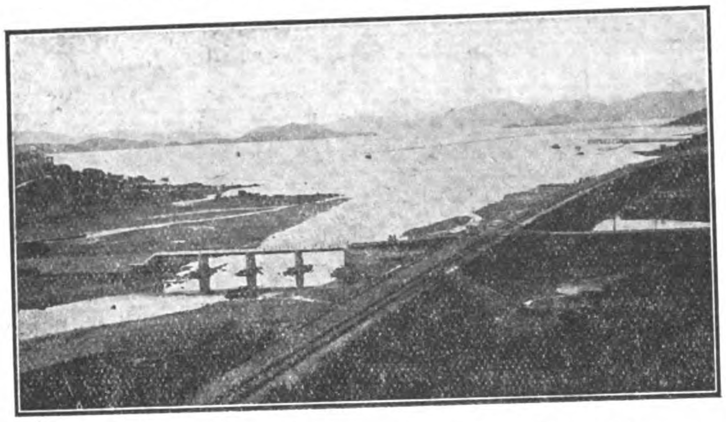
CULWELL WORKS,

**WOLVERHAMPTON, ENGLAND.**

Fig. 188.

# CANTON-KOWLOON RAILWAY

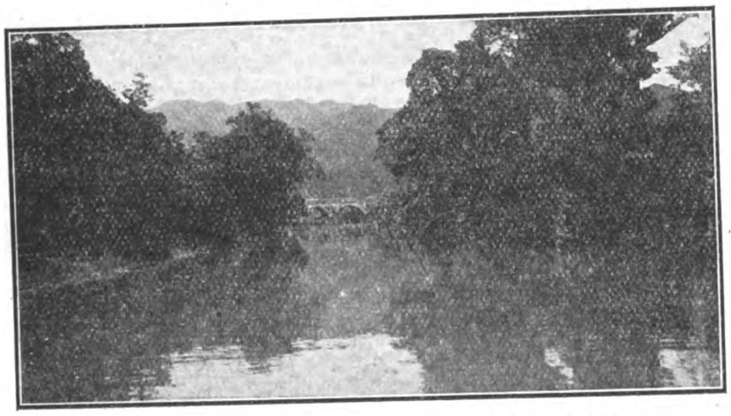
VIEWS ON THE BRITISH SECTION (22 MILES) VIEWS ON THE CHINESE SECTION, 89 MILES. (Chinese Government Railways)



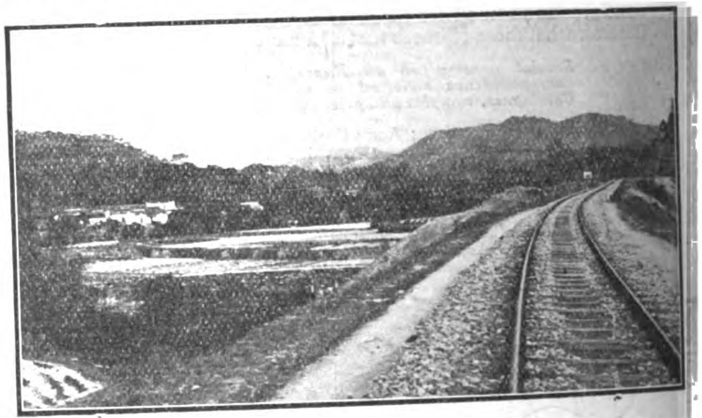
Canton-Kowloon Railway—Approach to Kowloon

Scenery Near Cheung Muk Low—C. K. Railway

**QUICKEST AND CHEAPEST ROUTE BETWEEN CANTON AND HONGKONG THROUGH VARIED AND BEAUTIFUL SCENERY**

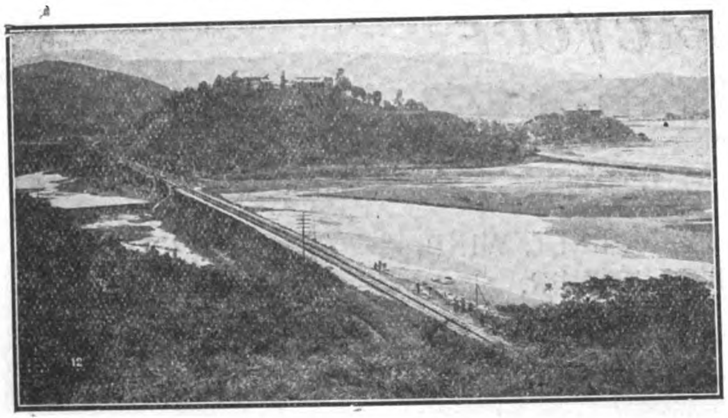


Canton-Kowloon Railway—Scene Along Route

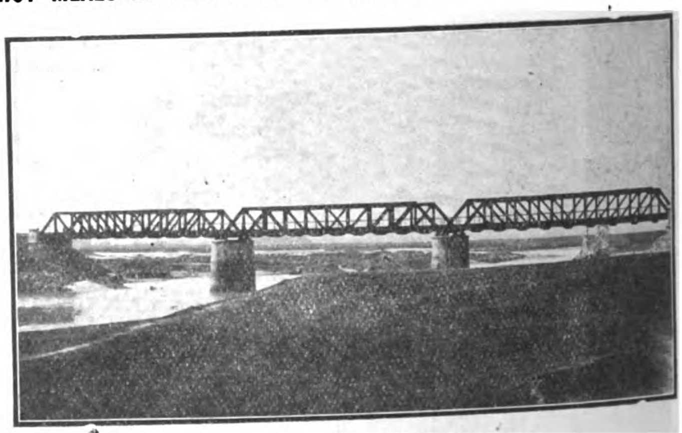


Scenery Along Route

**THREE EXPRESS CORRIDOR TRAINS EACH WAY DAILY—HOT MEALS AND OTHER REFRESHMENTS SERVED**

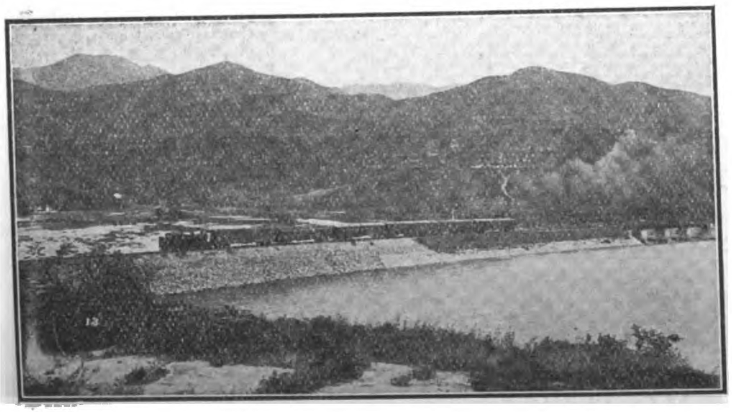


Canton-Kowloon Railway—Crossing Tide Flats

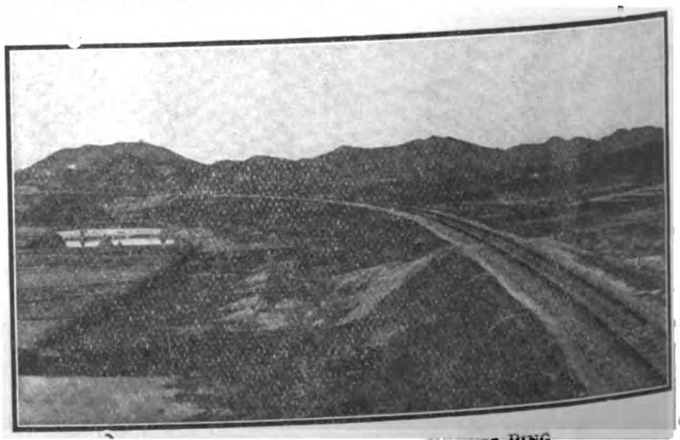


Kan Sui Bridge—C. K. Railway

**3½ HOURS BETWEEN UP AND DOWN TRAINS FOR BUSINESS MEN OR TOURISTS AT CANTON OR HONGKONG**



Canton-Kowloon Railway—Embankment Approach to Bridge



Grand Curve Near Sheung Ping

## TIME TABLE

Leave Hongkong (Kowloon) *8.05, 9.30 a.m., *12.10 p.m., & 2.30 p.m.
Arrive Canton (Tai Sha Tou) 11.45 a.m., 5.30, 3.50 & 7.15 p.m.

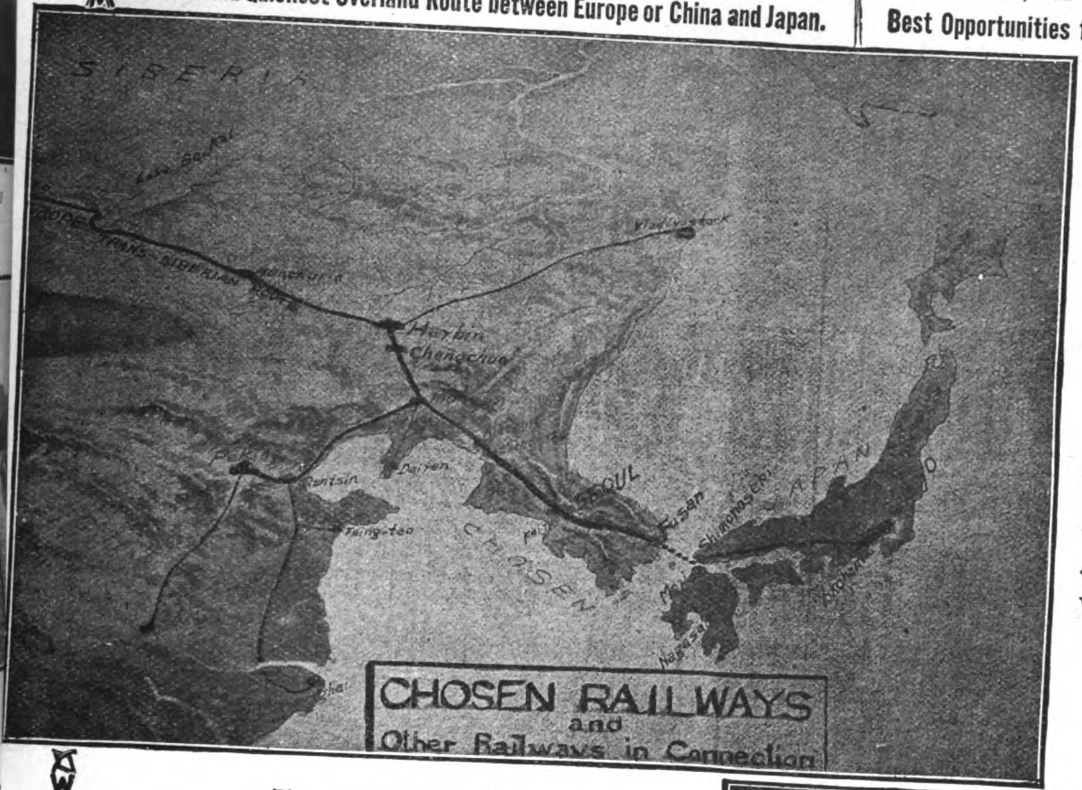
Leave Canton (Tai Sha Tou) *7.25, 8.35 a.m., *12.30 p.m. & *3.20 p.m.
Arrive Hongkong (Kowloon) 11.00 a.m., 4.35, 4.00, 6.55 p.m.

**Special terms and special trains for lairge tourist parties. For further particulars see advertisements or apply to**
**The Administration (Chinese Section) CANTON.**

# Chosen Railways

**Most Important Link in the Round-the-World Routes via Siberia.**
**Safest and Quickest Overland Route between Europe or China and Japan.**

**Only 10 hours, Sea Passage between the Continent and Japan.**
**Best Opportunities for studying Unique Conditions in the Far East.**




## *Chosen-Manchuria Express*

**Fusan-Keijyo (Seoul)-Mukden-Changchun**

Weekly Service. Most Up-to-date Accommodation: 1st and 2nd Class Sleeping Cars and a Dining Car.

CONNECTIONS:

With the Trans-Siberian Express.
With the Tokyo-Shimonoseki Train de Luxe.
With the Peking-Mukden Train de Luxe.

## *Daily Express*

**Fusan-Keijyo-Antung**

Twice a day Service, taking all class Cars, besides 1st and 2nd Class Sleeping Cars (Keijyo-Fusan section only) and a Dining Car.

CONNECTIONS:

With trains on the South Manchuria Ry.
With express trains on the Japanese Rys.

## *Through Traffic*

Stations open to through traffic are as follows:—

**South Manchuria Railway.**— Dairen, Changchun, Mukden, Yingkou, etc.

**Chinese Eastern Railway.**— Tsitsihar, Manchuria and Harbin.

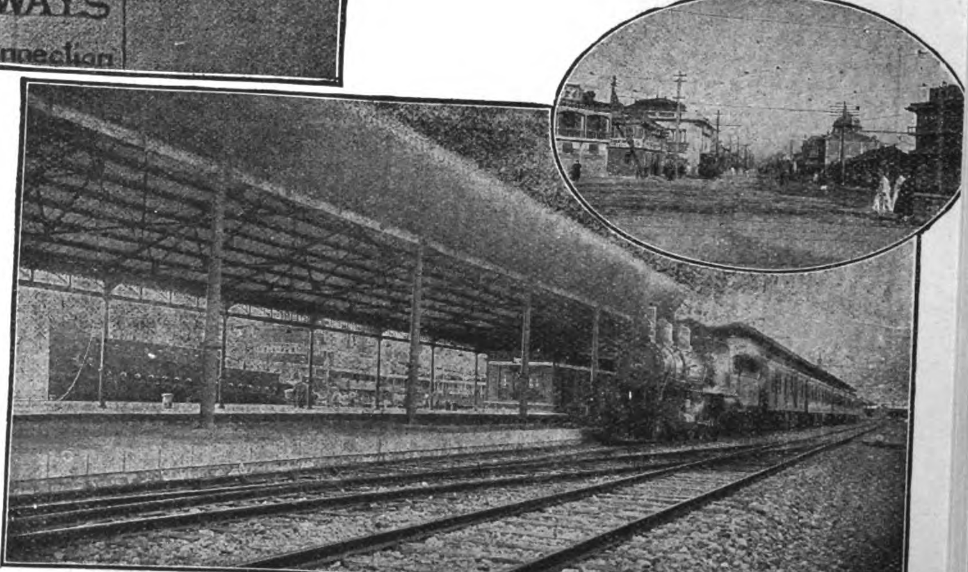
**Chinese Government Railways.**— Hsinmingfu, Shanhaikuan, Peking, Tientsin, Shanghai, Nanking, Tsinanfu, Hankow, Nankow and Kalgan.

**Russian State Railways.**— Irkutsk, Odessa, Warsaw, Moscow and Petrograd.

**Chosen Railways.**— Fusan, Keijyo (Seoul) Heijyo, † Jinsen and † Chinnampo.

**Japanese Railways.**— (via Chosen) Tokyo, Yokohama, † Nagoya, Kyoto, Osaka, Kobe, Shimonoseki, Moji and Nagasaki.

† No through traffic to or from points of the Chinese Eastern Railway and the Russian State Railways.



Fusan Pier

A scene in Keijyo (Seoul)

## *Ticket Agencies*

The International Sleeping Car Company; Messrs. Thos. Cook & Son; The Nordisk Resebureau.

## *Hotels*

Under the Direct Management of the Railway Bureau.

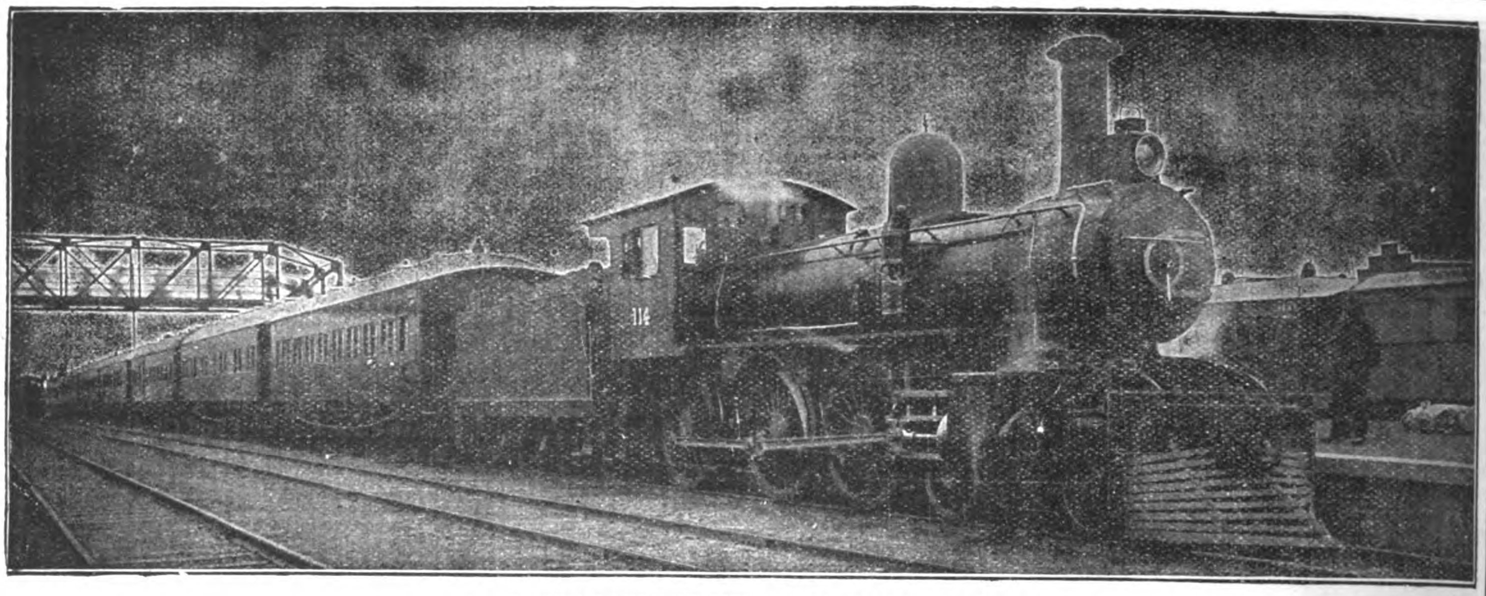
CHOSEN HOTEL AT KEIJYO (Seoul).—Cable Add: "CHOHO" 80 bedrooms mostly with bath; Motor-cars meet guests at the station.

STATION HOTELS AT FUSAN AND SHINGISHU.—The most convenient and comfortable stopping places on the upper floors of the two station buildings.

FOR FURTHER PARTICULARS PLEASE APPLY TO

# Railway Bureau of the Government-General of Chosen,

**Cable Add: "SENTETS."** **Ryuzan, Chosen.** **Code Used: A. B. C., 5th Edition.**



TRAIN DE LUXE AT TIENTSIN SETTLEMENT STATION

# CHINESE GOVERNMENT RAILWAYS OF NORTH CHINA

THROUGH SERVICE FROM PEKING TO MUKDEN, CONNECTING AT MUKDEN WITH THE SOUTH MANCHURIA EXPRESS FROM TRANS-SIBERIAN ROUTE: AT PEKING CONNECTION IS MADE WITH THE PEKING-HANKOW RAILWAY FOR HANKOW AND YANGTSZE PORTS, AND INTERMEDIATE POINTS REACHED BY THE CHEN-TAI LINE TO TAIYUANFU, THE TAO-CHING LINE, AND THE PEINLO RAILWAY TO KAIFENGFU AND HONANFU. CONNECTION IS ALSO MADE AT PEKING WITH THE PICTURESQUE KALGAN LINE, "THE ROAD TO THE GREAT WALL."

## THE RAILWAYS OF NORTH CHINA PASS THROUGH THE MOST INTERESTING PART OF CHINA

**PEKING:** THE CAPITAL, WITH ITS WALLS, PALACES, TEMPLES AND TOMBS.—**TIENTSIN:** THE GREAT TRADE CENTER OF NORTH CHINA.—**TONGSHAN:** THE LARGEST MINING AND INDUSTRIAL TOWN IN THE COUNTRY.—**SHANHAIKWAN:** WHERE THE GREAT WALL ENDS AT THE SEA.—**NEWCHWANG:** THE BUSY COMMERCIAL PORT OF MANCHURIA.—**MUKDEN:** THE ANCESTRAL HOME OF THE MANCHU DYNASTY. A MINIATURE PEKING, WITH ITS WALLS, IMPERIAL PALACES, TEMPLES AND TOMBS.

PEKING STATION

FIRST CLASS SLEEPING BERTH TRAINS DE LUXE

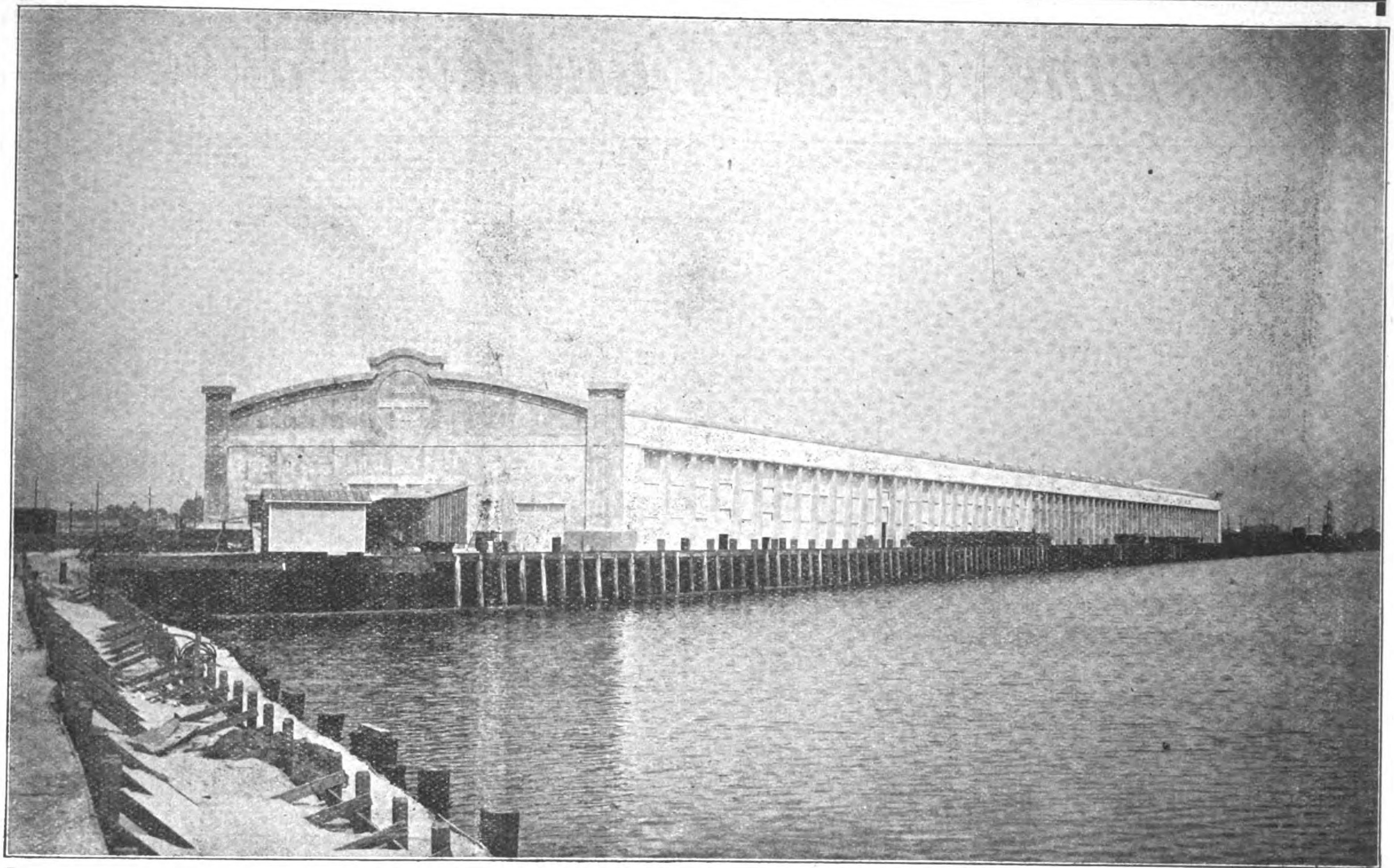
THE THROUGH TRAINS ARE EQUIPPED WITH BUFFET AND DINING CAR SERVICE, AND A COMFORTABLE, MODERN TRAIN DE LUXE OF COMPARTMENT SLEEPING COACHES HAS BEEN PLACED IN OPERATION THIS SEASON TO CONNECT WITH THE THROUGH SERVICE OF THE TRANS-SIBERIAN AND SOUTH MANCHURIAN RAILWAYS

For further information apply to any office in America or Europe of

**The Cie. Internationale Des Wagons-Lits, Thos. Cook & Sons, or Railways of North China**

**TIENTSIN, NORTH CHINA**

**By order of Directorate**



MUNICIPAL PIER A, LOS ANGELES HARBOR, ARMCO IRON USED FOR SIDING, SKYLIGHT FRAMES AND VENTILATORS.


# THE IRON THAT'S MADE TO LAST

is the choice of architects and engineers who are building for the future. Progressive builders of railroads and highways employ Armco Iron Corrugated Culverts because of their adaptability to difficult situations, the ease with which they are transported and installed, and the *Lasting Quality* which result from the purity and evenness of their material. The Armco Iron Smooth Flume is an important feature in water-carrying lines for power, irrigation or domestic supply. And thousands of architects are specifying this material for all the sheet metal portions of buildings which are intended to withstand the test of time.

# ARMCO IRON
## Resists Rust

because of all materials produced from iron ore it is most free from impurities both solid and gaseous and most nearly perfect in physical structure. Inspection is constant and severe.

Bars and sheets are rejected for defects which would be considered too trivial for notice in ordinary mill practice. In every respect Armco Iron must be worthy of its established reputation.

**WRITE TO-DAY FOR FULL INFORMATION AS TO ARMCO IRON SHEETS, PLATES, ROOFING, METAL LATH, WIRE, CULVERTS, FLUMES AND OTHER FORMED PRODUCTS.**

ARMCO IRON

## The American Rolling Mill Company

Licensed Manufacturers Under Patents Granted International Metal Products Co.

Middletown, Ohio, U.S.A. Cable Address "Armco-Middletown"

CHINA AGENTS:
The Chinese American Co.
No. 96, Szechuen Road, Shanghai

MANILA AGENTS:
The Atlantic Gulf & Pacific Co.
Manila, P. I.

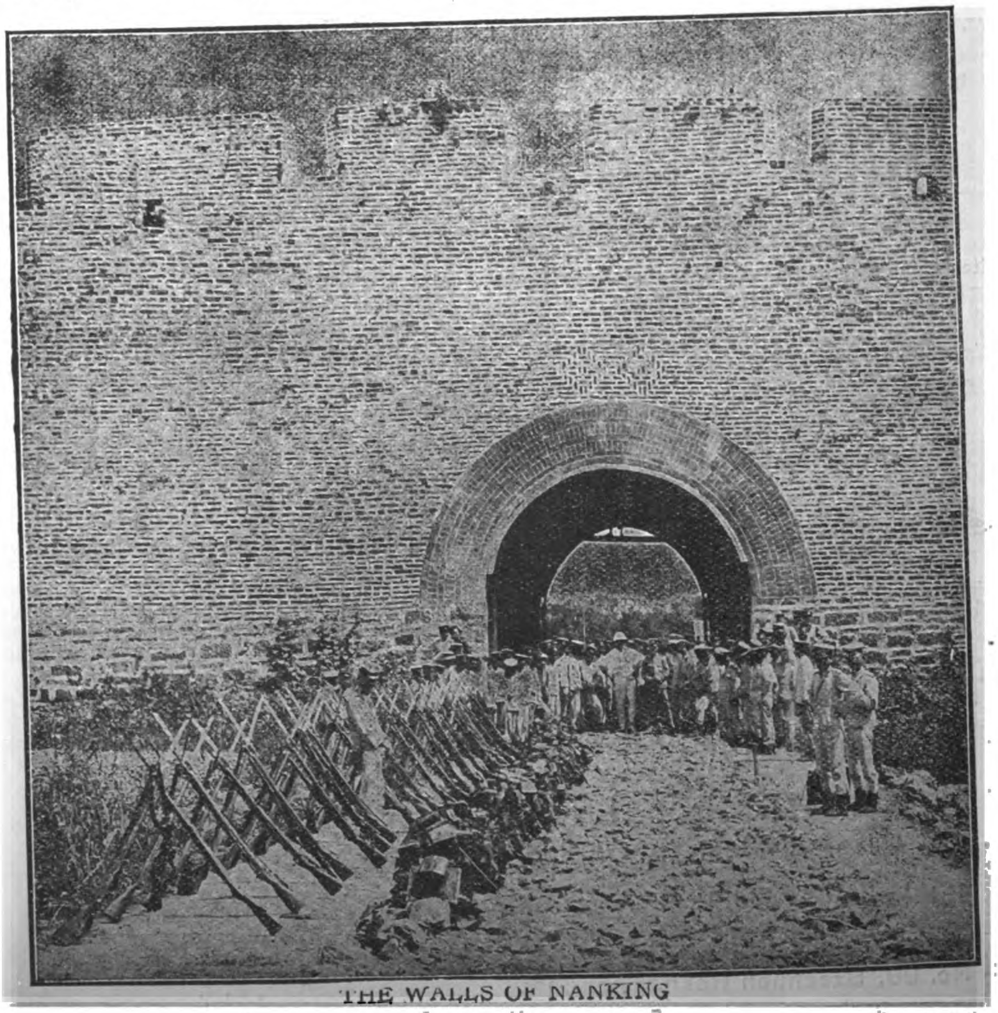
ARMCO IRON

# The Line of A Hundred Pagodas

SHANGHAI TERMINUS OF THE SHANGHAI-NANKING RAILWAY

**THREE EXPRESS SERVICES DAILY, WITH RESTAURANT AND SLEEPING CARS BETWEEN SHANGHAI, SOOCHOW, WUSIH, CHANGCHOW, CHINKIANG AND NANKING**

**SEE THE NANKING BATTLE-FIELDS**



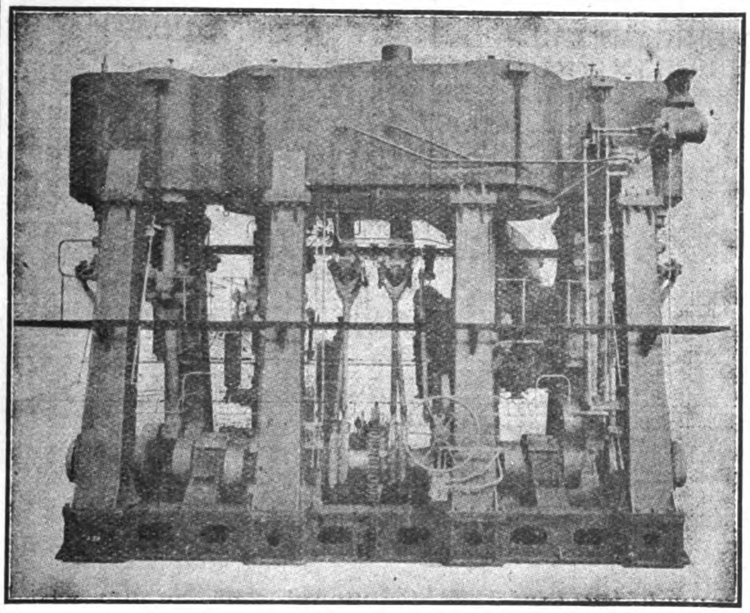
THE WALLS OF NANKING

**DELIGHTFUL WEEK END EXCURSIONS**

## North Eastern Marine Engineering Company, Limited

WALLSEND-ON-TYNE & SUNDERLAND, ENGLAND

BUILDERS OF TRIPLE & QUADRUPLE EXPANSION ENGINES, AND TURBINE MACHINERY for all Classes of VESSELS.



QUADRUPLE ENGINES.



## DU PONT EXPLOSIVES

Dynamite, Gelignite, Blasting Gelatin and Safety Powders for COAL MINING

Blasting Powder, Detonators, Electric Detonators and Electrical Blasting Machines

OVER A CENTURY'S EXPERIENCE enables us to produce explosives which are recognized as standards throughout the world.

Especially packed to comply with the needs of your particular country.

Our safety explosives, for use in dusty and gaseous coal mines, have passed the rigid tests of the United States Government's Bureau of Mines.

Thirty factories in the United States. Factories on Atlantic and Pacific coasts insure prompt shipments.

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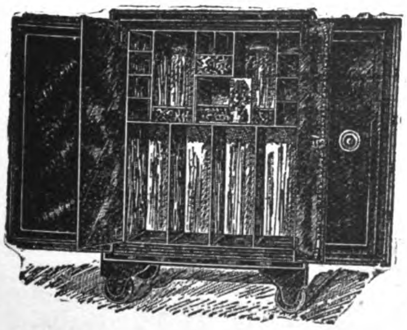

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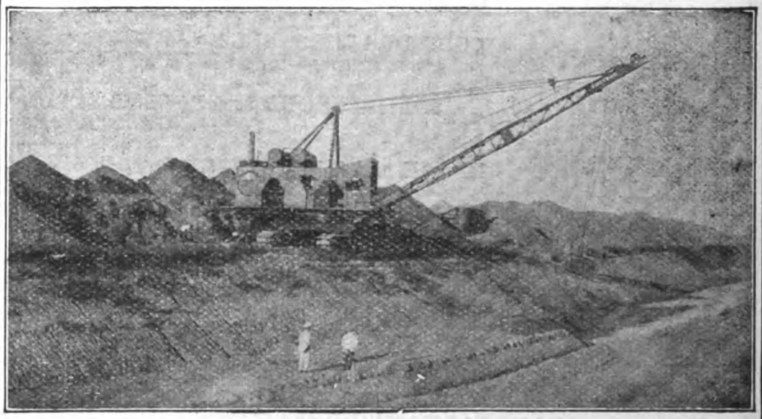

This view shows a Class-14 Bucyrus Dragline Excavator with a 60-ft. boom and 2 cu.yd. bucket enlarging old canals in the Caucasus. Observe it is mounted on caterpillar traction to facilitate moving about. It uses oil for fuel. Russian Government, owners.

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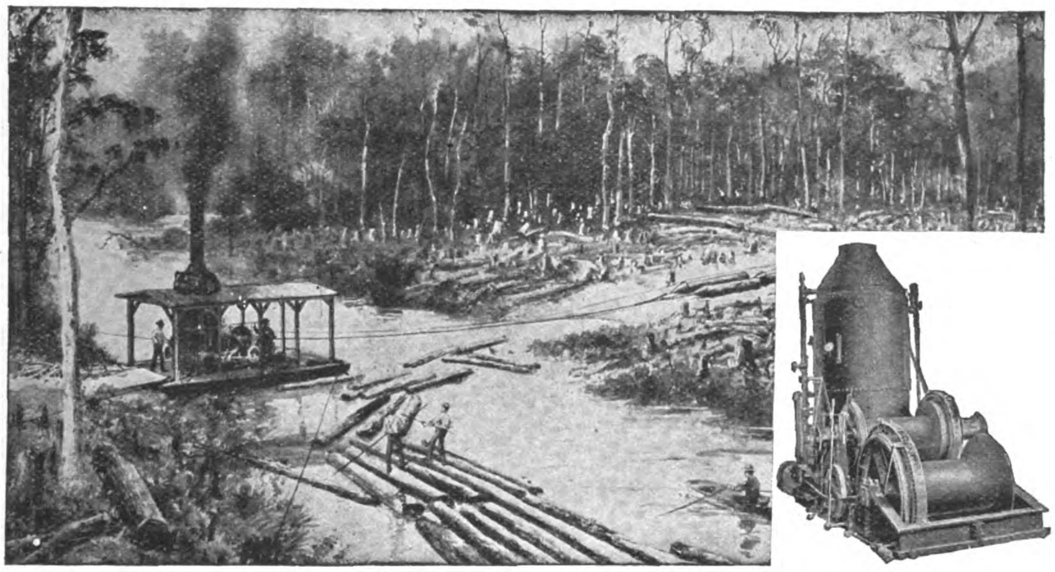

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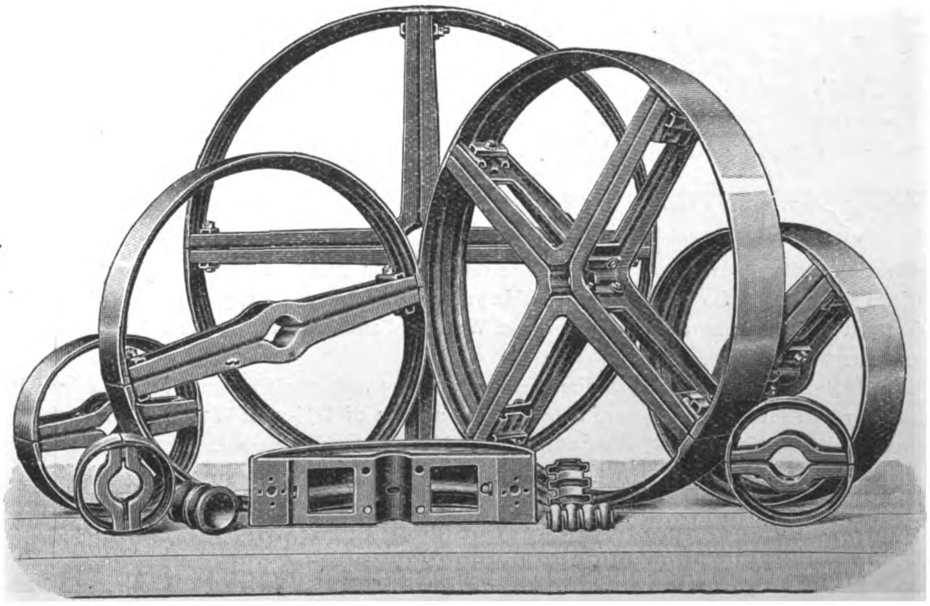

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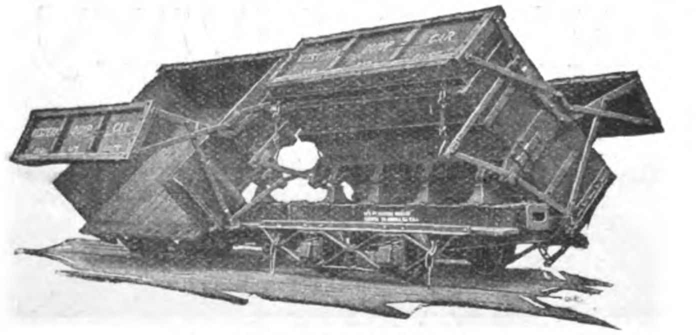

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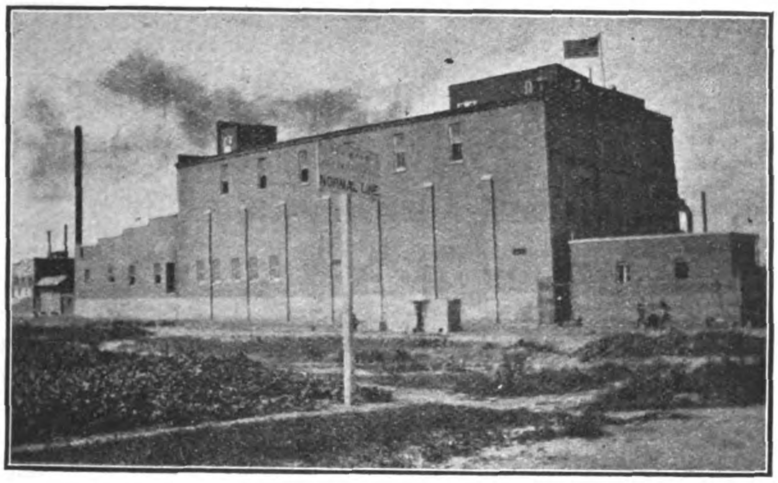
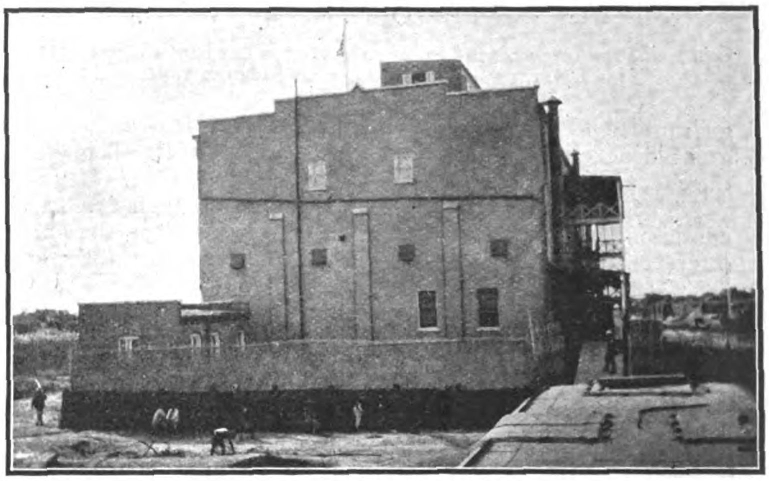
COMMERCE :-: ENGINEERING :-: FINANCE

VOL. XIII. SHANGHAI, OCTOBER, 1916 No. 5

SIDE ELEVATION ON AMOS BIRD CO.'S EGG PRODUCTS FACTORY. BOILER ROOM IN DETACHED BUILDING AT REAR

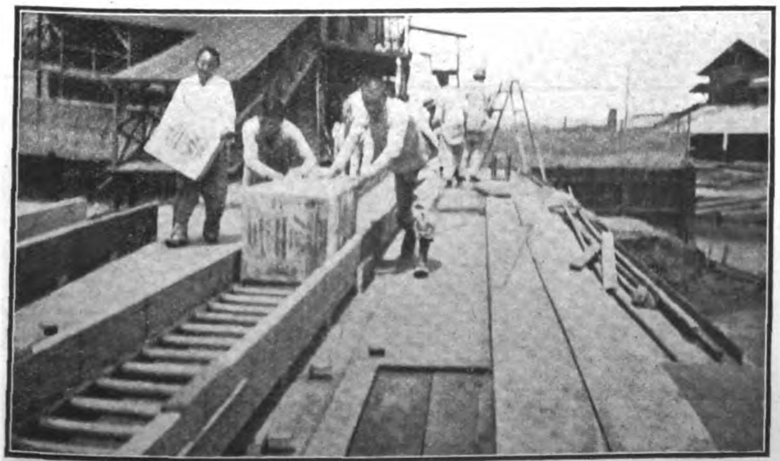


EGG PRODUCTS PLANT FROM WATER FRONT, WITH LIGHTER IN FOREGROUND PLACED READY FOR LOADING

# SANITARY EGG PRODUCTS PLANT IN SHANGHAI

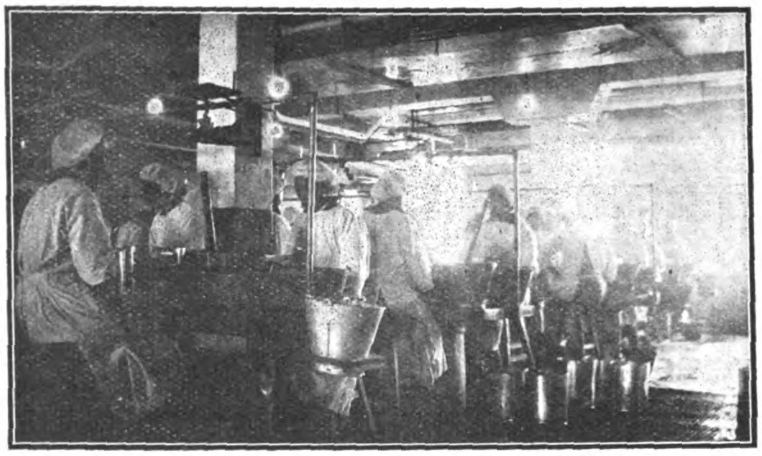
To those who think that China is the last word in lack of sanitation, it may come as a surprise to know that here in Shanghai is now in operation a plant for the manufacture of egg products, in which the principles of factory sanitation are carried to the highest point of application. The factory is that of the Amos Bird Company of Boston and is located in the Yangtszepoo district, occupying a site on the Whangpoo which gives perfect receiving and shipping facilities. The plant is housed in a three story brick structure that has the distinction of having the only basement in Shanghai, the floor at high tide, being considerably below the water level of the river that flows outside its walls.

China is known as a land of cheap raw material, and eggs are no exception. It may astonish the American housewife who pays fifty cents a dozen in winter (even in summer the price of eggs in the memory of the writer has never gone lower than fifteen cents a dozen), to know that eggs delivered at the doors of this plant are only $9.00 Mexican or $4.50 gold a thousand and that in summer the price sometimes goes down as low as twelve dozen eggs for one Mexican dollar, approximately fifty cents gold. And these are fresh eggs which the grocers in the United States would label "strictly fresh eggs" since in China, a land where everything is up-side-down to foreign nations, the older an egg is, the more valuable it becomes, and eggs

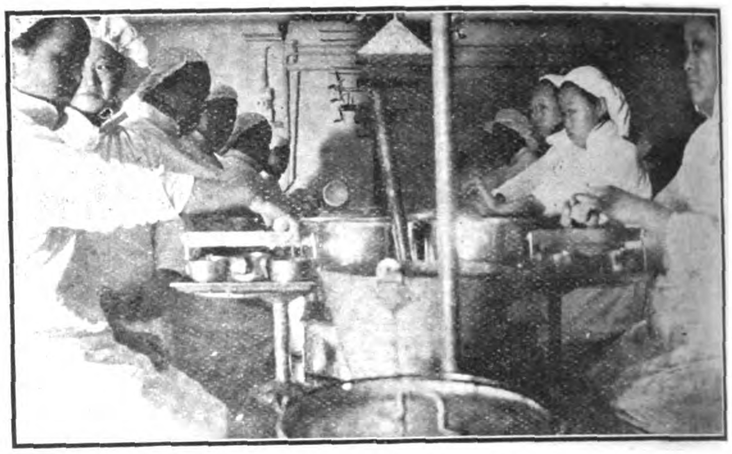


GRAVITY CONVEYOR FROM FACTORY TO LIGHTER

RECEIVING RAW MATERIAL, CARRIED IN BASKETS BY COOLIES WHILE FINISHED PRODUCT IS PASSING DOWN COVERED CHUTE AT LEFT



GENERAL VIEW OF BREAKING ROOM CONSTRUCTED ENTIRELY IN CONCRETE AND METAL TO PERMIT THOROUGH STERILIZATION



GROUP OF GIRLS BREAKING AND SEPARATING EGGS INTO STERILIZED APPARATUS OF NICKEL.

guaranteed to be at least one hundred years old are served as great delicacies at Chinese banquets while the fresher the egg the cheaper it is.

The eggs are received at the door of the factory in baskets containing approximately one thousand eggs and as the factory offers better prices for choice eggs, it is securing the highest class of egg produced within a circle of probably a hundred mile radius. The eggs are brought into the examining room where the contents of the baskets are gone over and all cracked or otherwise damage eggs are separated. The eggs are then candled by Chinese who pass them before the candling lamps at the rate of five hundred an hour. The candling rooms are kept in a temperature not exceeding 56 degrees Fahrenheit, the range of temperature in the building used both for freezing and for drying eggs, being from zero to upwards of 100 degrees Fahrenheit in the freezing and drying rooms respectively.

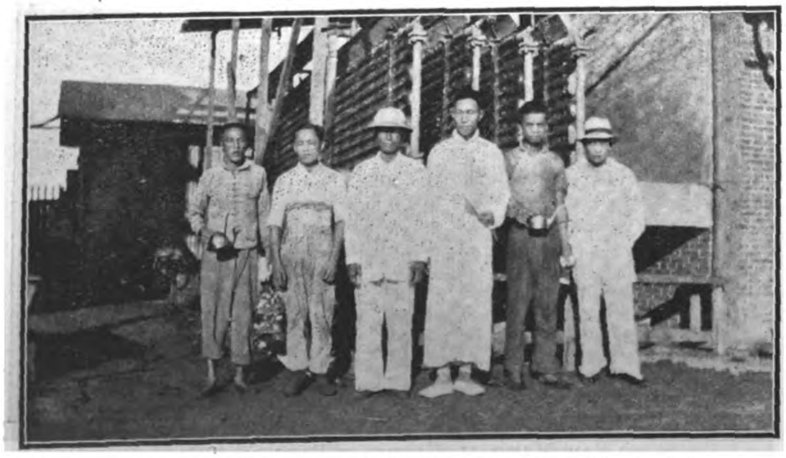
ONE OF THE WORKERS

From the candling room the fresh eggs with unbroken shells are taken to the breaking room, which, in point of sanitary appliances and attention to details of personal hygiene scarcely is surpassed by the operating room of a hospital. In fact the general effect of the room, aside from its low temperature, is that of a well ordered hospital but with ten white capped and aproned nurses, where the ordinary hospital would have but one. The factory now employs one hundred girls each of whom is expected to break and separate from fifteen hundred to two thousand eggs a day of twelve hours. Owing to the factory paying higher wages than other similar plants and working only six days a week instead of seven, which is the rule of the cotton mills and silk filatures of Shanghai, it can pick and choose in its labor so that the type of girl employed in the egg breaking room is far above the standard of any other Chinese factory and a composite picture of them all probably would come nearer the Chinese idea of feminine beauty than any other one hundred girls that can be found in Shanghai.

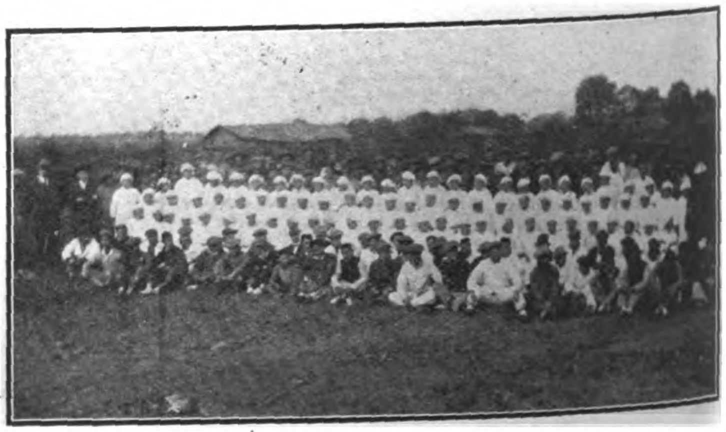
THE FOREWOMAN

As the workers enter in the morning, they are dressed in freshly sterilized clothing furnished by the factory and after their nails are manicured, they are allowed to proceed to the work room.

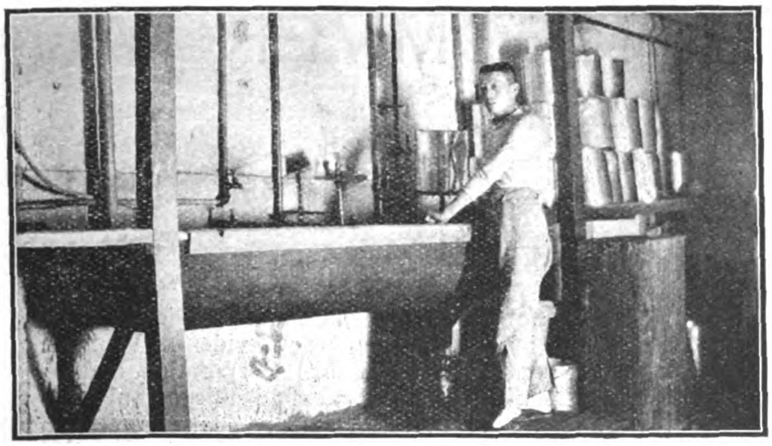
The breaking room is solid concrete and is sterilized each day as carefully as the operating room of a hospital. The girls are seated on metal stools at low zinc tables. Before each one of them is a curious appliance which mechanically separates the white of the egg from the yolk. The girl takes an egg from the can into which they have been counted by the candlers, and with the right hand cracks it on the bar of the separating machine. The breaking is then finished by a dexterous movement of the fingers which permit the egg to drop into a shallow cup where the yolk is caught and the white allowed to drain off the sides. Only three eggs are broken before the contents of the cup containing the yolks are inspected as to the odor, since an egg may be musty and yet look all right to the eye. If any egg prove musty they are thrown away and a freshly sterilized cup brought into place.



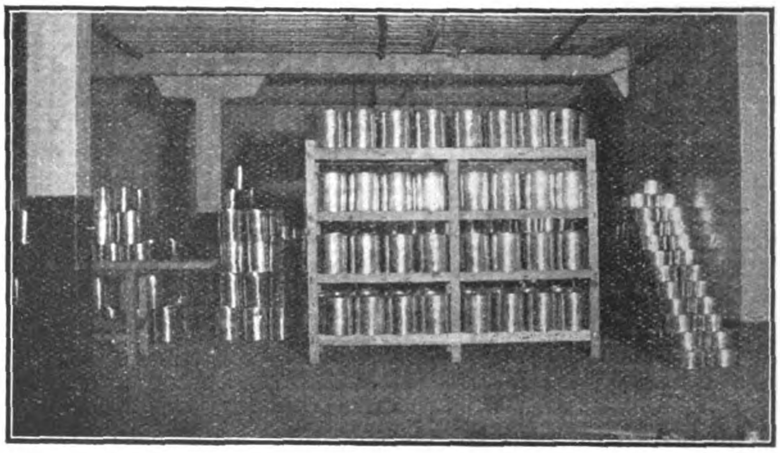
TYPES OF MEN WORKERS—IN BACKGROUND STEAM CONDENSER



GROUP OF WORKERS SHOWING BREAKING ROOM GIRLS IN WHITE UNIFORMS LIKE NURSES



Live Steam Room for Sterilizing Cans used for Shipping Frozen Eggs



Section of Refrigerating Rooms Showing Method of Stacking Cans for Filling with Mixed Yolks and Whites

At present the factory is drying only the yolks and these are collected from the smaller cans of the separator into larger cans after which they are passed through strainers that break the yolks and thoroughly incorporate them so that the yolks when run off from the strainers, form a thoroughly homogeneous liquid ready for drying.

The drying room is worthy of an extended description as it embodies all the latest features in the sanitary handling of this food product. In the antechamber, the visitor is struck by the curious apparatus that hangs from the ceiling to within seven feet of the floor. It looks much as though some enormous bees or wasps had invaded the place and hung their fluted combs from its ceiling. This is the air filter, through whose pores every particle of air must pass before it reaches the heaters on its way to the drying machines. From the strainers the air goes to the heating room where it passes over pipes filled with steam at a pressure of forty pounds and is then sent by means of a blower into the drying apparatus. The egg comes out in flakes and allowed to cool to a temperature slightly above the freezing point. It then goes to the packing room where it is placed in boxes lined with wax paper, which are then stencilled and ready for shipment.

From the time that the egg was rapped against the breaking bar of the separating machine, no hand has touched it and it has been under strictly sterile conditions so far as human ingenuity could make them. The one offence for which a worker in the drying or packing rooms will be instantly discharged, is that of handling any of the products. The egg yolk when placed on board the steamer for shipment is in a form of dry flakes. These flakes if put in water immediately form yolk of egg. By taking dry whites and yolks in proper proportion, and allowing them to absorb the proper amount of moisture, they can be made into an omelet, scrambled eggs and in fact any form of egg dish except fried and poached eggs, although of course their use is more largely among bakers than in the household.

So much for the hot side of the plant. For the freezing of eggs the separation and straining are carried out just as for the manufacture of dry yolks, only after the straining the large cans are taken to the freezing chambers. Here the temperature is kept close to zero Fahrenheit and the separate whites and yolks are poured into cans standing on racks that line the walls of the freezing chamber.

The cans which contain thirty pounds of egg, either white or yolk, as the case may be, are as sterile as live steam at a hundred and twenty degrees centigrade can make them before the eggs are frozen in them. They are packed two cans to the case and are shipped as fast as cold storage facilities can be secured on the steamers.

The cold storage rooms are kept at proper temperature by two Frick compressors, one of forty tons and the other of twenty, only one being operated at a time so that the plant always has a safe margin of cold storage apparatus in reserve for use in case of a break down. These compressors are operated by electric motors of the Allis Chalmers pattern, which take current from the Shanghai Municipal plant, a transformer station being located on the premises of the company. The steam plant consists of an Erie boiler and with only half of the plant working, forty pounds of steam on the guage is found sufficient. A second boiler is kept in reserve, the designer of the plant having provided against stoppages from a break down of any part of the machinery. The ammonia compressors are arranged with an electric device that insures immediate stoppage of the motors in case of the breaking of a pipe or any other accident.

Beside the frozen eggs and dried yolks, the company soon will begin the manufactures of dried white of egg operating under a newly patented device which gives a product as thoroughly sterile as does the present drying method for the yolk. This device is now being installed and upon its completion, the activities of the plant will be considerably augmented. The demand for whites, contrary to the current opinion, is greater than for yolk, and the large drying plant in the United States never have been able to supply the demand for dried white of egg or egg albumen as it is called in trade.

In the United States, the experience has been that each case of eggs contains five pounds of shells, eighteen pounds of yolks and seventeen pounds of whites. The Chinese egg being from a smaller and different variety of chicken, runs about sixty per cent of white. In drying the egg, it has been found that two pounds of yolk make one pound of the flake while it takes seven pounds of whites to make one pound of dry product, so that the whites are much more expensive than the yolk.

The demand for frozen eggs in the United States is extremely large and growing rapidly so that Messrs. Keith and Company, who have the selling agency for the Shanghai plant as well as for other important ones in the United States, had an output of six million pounds of frozen eggs last year.

The Amos Bird Company also supplies sugared egg yolk and sugared frozen eggs, having a patent on the process and product which has been found to be a great advantage over the use of simple frozen eggs. This variety of product is also being made at the Shanghai plant.

The Shanghai plant was erected by Mr. L. Nordmeyer, refrigeration engineer, and it embodies the latest improvements as developed by the Seymour Packing Company of Topeka, Kansas, which is considered the model plant of the United States and in addition operates under the various egg product patents owned by the H. J. Keith Company, Boston, which firm was the pioneer in the drying and freezing of eggs. The plant is regularly inspected by the United States health officer located in Shanghai, both as to its general sanitary features and as to the health and cleanliness of the workers.

# DEVELOPING AMERICAN COMMERCIAL INTERESTS IN CHINA

## Railway and Canal Contracts Signed

American commercial activity has been of little importance in China since the early Co-hong days of Canton when some of the best sailing vessels were laden with American products bound for the China coast, with full return cargoes of silk and tea from the Orient for American and European markets. There was a time when the coast steamers plying between Japan and China numbered among them many under the American flag, but for the past twenty-five to thirty years America has been little known in China as a trading nation, practically all of her ships, those traversing the Pacific, the coast lines as well as river steamers, having entirely disappeared. The Standard Oil Company alone has kept the American flag flying in China, the vast organization which this company has developed carrying it into nearly every part of the interior. With the exception of the Standard Oil Company there has been little or no American trade of a permanent nature. For a while American cotton goods found a market in Manchuria but only to be driven out by Japanese rate-discrimination, this large field for one of America's greatest products thus also being lost.

In the many Treaty Ports opened to foreign trade in China we find every Power represented in the form of large concessions, each placed under the flag of a foreign nation, but in no instance do we find the American flag thus flying. This, of course, is a matter of gratification to many Americans, it being typical of the real American spirit manifested towards China, proving to China and the world that territorial aggression is not a policy followed by the United States in her endeavor to secure her share of foreign trade. One thing that Americans rightly pride themselves upon is the magnanimous manner in which she has undertaken the modernizing of Young China through her educational institutions scattered throughout the Provinces. Ninety percent of the young men educated abroad, other than those educated in Japan, have studied in the colleges and universities of the United States. In the various philanthropic institutions, such as hospitals and orphan asylums, the United States has also, through her missionaries, taken the lead, and to-day there are to be found few of the largest cities of China that do not have American doctors in charge of hospitals largely supported by American money.

The birth of the Chinese Republic is largely the direct result of American education. The recent awakening of the Chinese to a realization of their position has been attributable solely to the work of the American missionary, and to-day China cannot place her hand upon a single instance in which either the Government of the United States or her people have taken advantage of her weakness, while there are hundreds of occasions upon which her cause has been championed by the American public in a struggle to secure for China fair play from other nations.

The history of Great Britain in China has been second only to the United States in consideration of the men and money directly spent upon China in the development of education. In commerce Great Britain has kept the lead until very recently, the European war temporarily suspending her Far Eastern trade. The United States has, because of the vast territory undeveloped within her own borders, given but slight attention to the expansion of trade in China. It is also true that until very recently America has been a borrowing nation, and within the last few years only has she been able to find a surplus of capital for foreign investment.

The object of America to-day is to invest capital upon purely commercial principles in those countries that will afford the investment adequate protection. Of recent years the South American fields have been exploited to some extent by New York financiers and that the United States is now seriously considering China as a great field for commercial and industrial development through the aid of American money, is self evident. With the formation of the American International Corporation and its allied companies for foreign trade we find this organization undertaking work upon a large scale in China. This organization is thoroughly commercial, and is in no way political. For this reason, if for no other, we feel certain that the Chinese people will welcome American capital in the development of her vast resources; and other nations interested in China will undoubtedly feel towards American capital as China does, for in the greater development of China upon modern lines will come greater opportunities for foreign trade of all nations.

The American International Corporation on April 19, 1916, signed an agreement with the Government of China for the dredging of the Grand Canal, including the reclamation of large tracts of land which will produce the very best results in the way of farming. This work was initiated by the Red Cross Society of the United States and was taken up by the American International Corporation not only from the standpoint of a purely business transaction, but also as a scheme which is humanitarian and will prove of the greatest benefit to a population of more than ten million people that live upon either side of this great water way between the Yellow River and the Yangtse. The American people have contributed during the last decade something over five million dollars gold to relief work in the famine districts along this waterway, and it is significant to note that the present estimate for the conservation of this Canal is approximately the amount already spent by the Americans in relieving the distress which has been the result of negligence upon the part of the Chinese Government in taking care of the Grand Canal.

On May 17, 1916, the firm of Siems & Carey signed a contract with the Chinese Government for the building of railways in China, and on September 29 the detailed agreement in regard to the working out of the original agreement was decided upon. Siems & Carey will have entire charge of the construction of the railways to be built under this contract and the American International Corporation has undertaken the flotation of the bonds for the Chinese Government in this work. In the Grand Canal scheme Siems & Carey will also have charge of the work. The railways contemplated by the agreement are as follow, though it is provided that if they are not feasible equal mileage shall be allotted elsehere in China.

1.—From Fengcheng in Shansi Province to Ningsia in Kansu Province.

2.—From Ningsia in Kansu Province to Lanchowfu in Kansu Province.

3.—From Hangchow in Chekiang Province to Wenchow in Chekiang Province.

4.—From Hengchowfu in Hunan Province to Nanning in Kwangsi Province.

5.—From Lu Hwei in Kwangtung Province to Chungchow in Kwangtung Province.

These lines are to be built upon a percentage basis as initiated by Pauling and Company in their Shasi-Shingyifu railway agreement.

The Chief Engineer appointed for the proposed lines is Mr. George C. Kyle, who is recognized as one of the first engineers in the United States, having also had foreign experience. There will be several other prominent American engineers associated with Mr. Kyle in his work. The construction will be undertaken by the very best men to be found among construction engineers in America. Mr. E. J. Purcell, who is considered in both Canada

and the United States as among the very first of construction Superintendents, is already in China. The Siems-Carey Railway and Canal Company will make every effort to employ the very best of Chinese engineers, and a special effort will be made to use as many Chinese as can be found competent for such work.

Mr. William F. Carey, one of the partners in the firm of Siems and Carey of St. Paul, Minnesota, is the President of the Siems-Carey Railway and Canal Company, and is known as one of the three leading railway contractors in the United States. He is a man of slightly under forty, who has had the very highest training to be had in his line of work and just recently had a great portion of the Grand Trunk Pacific of Canada to construct.

The Vice-President and General-Manager of the Siems-Carey Railway and Canal Company is Mr. F. C. Hitchcock, who recently resigned his position as Vice-President and General-Manager of the great New York firm of contractors, MacArthur Bros. Company, to take up his position in China with the new firm.

In Messrs. Carey and Hitchcock, China can boast of having two of the greatest contractors in the world to-day in charge of the construction of railways to be built under the contract recently concluded between the Chinese Government and Siems and Carey.

One of the Vice-Presidents of the Siems-Carey Railway and Canal Company is Mr. Willard D. Straight, who is well known in China and is now considered one of the leading young financiers in the United States. Mr. Straight's continued interest in China has had a great deal to do with the splendid start made by the American International Corporation here.

In building these railways the Chinese and Americans feel that they have the good-will of all other nations in that new railways will be the means of affording greater facilities for the marketing of European products as well as the building up of a greater export trade. It is significant to note that the entire export and import trade of China for the year 1915 did not exceed the total of manufactured products exported by the city of Milwaukee in the year 1914. The building up of trade in China is largely dependent upon the development of communication, and China can well afford to have a railway system of no less than two hundred thousand miles. In the United States to-day there is approximately three hundred thousand miles of railway, with a population of one hundred million.

In the development of Chinese mines there will also be found a greater necessity for rail communication, and there is hardly any form of trade and industry that will not profit by the building of railroads.

The railway project will embrace something over 2500 miles of railway in China at a cost of approximately $120,000,000 gold and it is estimated that a period of from five to six years will be consumed in carrying out this construction if work can be continuously carried on.

# THE SHUIKOUSHAN LEAD MINE IN HUNAN

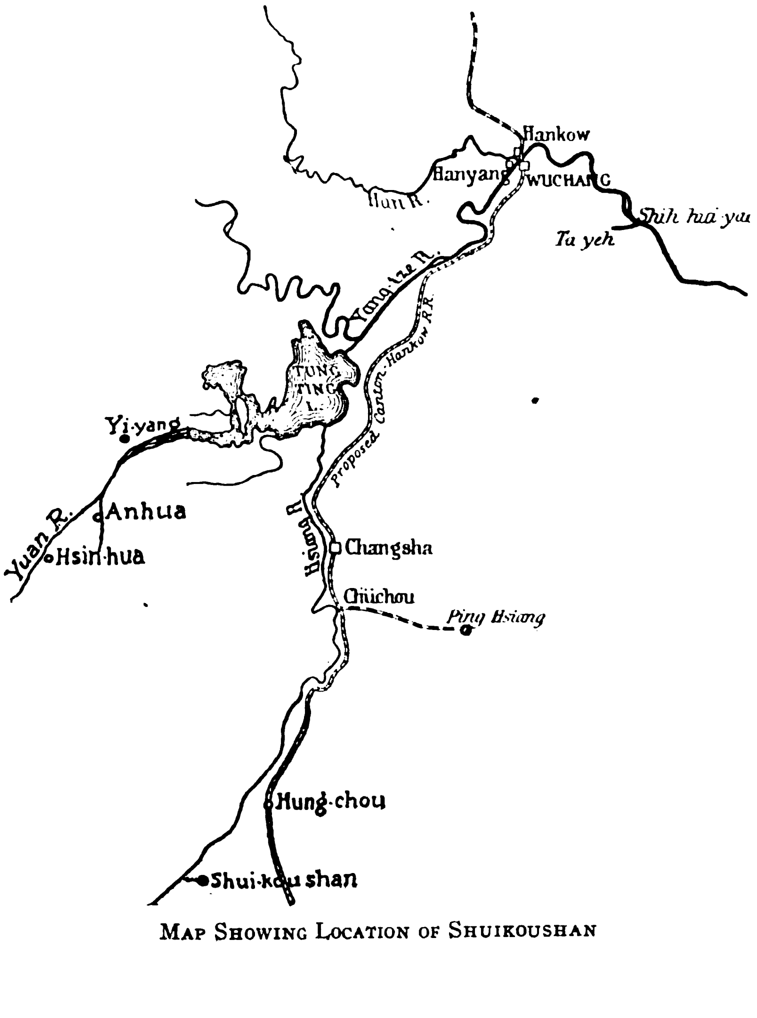
The efforts of certain Japanese financiers to secure the lead mines at Shuikoushan, in the Province of Hunan, as security for a loan to the Chinese Government of some five million dollars has evoked quite an amount of interest among foreigners, and raised not a little stir among Chinese, particularly those of the province concerned. The result of agitation against pledging the mine as security is that the Peking Government has found other security for the loan.

While many Chinese recognise that there must be foreign participation in mining in China before proper development can be expected they do not wish to see the participation come about as a result of an agreement for a loan for purely administrative purposes. Bona fide investment in mining enterprises in accordance with the laws governing mining in China is welcomed, and if the laws are not acceptable to foreign investors sensible Chinese agree that they should be amended until they are. Strong opposition of a successful nature consequently arose to the government proposal to pledge the Shuikoushan mine as a loan security; and until that opposition manifested itself few people had ever heard of the mine. An article contributed by Mr. H. Y. Liang to the "Mining and Scientific Press" gives the following facts which may prove of interest:

The Shuikoushan mining district is in the Changlin prefecture of the province of Hunan, about 46 miles south from Hungchoufu, on the south or left bank of the Hsiang river, at an altitude of 1,600 ft. above sea-level. The Hsiang river is navigable throughout the year, either by steamers of shallow draft, or by native junks, to lake Tungting, which has an outlet to the Yangtse river. There is a narrow-gauge railroad connecting the mine with the river-bank. When the Canton-Hankow railway is completed this mine will have direct railway connection with both those cities.

The Shuikoushan mine has been worked continuously for the past 200 years by the primitive methods practised by the natives of the district. On account of the crude methods and equipment employed, the mines were never worked to any great depth, and until recently there has been no extensive development.

In 1896 the governor of the province, Cheng Pao-chung, heard of the richness of this deposit and appointed Mr. Liau as the first director of the mine. At the same time Government funds were set aside for developing the mine. Mr. Liau being only a scholar, was not able to make a success at mining because of his lack of mining knowledge and experience. It was found necessary to employ local miners who had some practical experience. They sank another shaft at a place called Hsichiu-chang, and fortunately succeeded in striking the orebody at a depth of about 300 ft. As the shaft increased in depth, considerable difficulty was found in hoisting ore to the surface. In 1905. T. P. Sha was appointed mining engineer, and sank an




MAP SHOWING LOCATION OF SHUIKOUSHAN

inclined shaft on the south side of Hsichiuchang. He also built a hoisting-plant and a pumping-station. The maximum capacity of this hoisting-plant is 200 tons per day. A sorting-house, an ore-dressing plant, and a narrow-gauge railway were soon built. At present a second vertical shaft and a new ore-dressing plant are under construction. The new plant will be completed within two years, and the total output of the mine will then be doubled.

The mine is at 26°40′ north latitude and 112°40′ east longitude. The climate is mild, the maximum temperature in summer being 104°F. and the minimum during winter 40°F. Under these conditions work can be carried on almost throughout the year.

GEOLOGY. The rocks of the Shuikoushan district are granite and limestone, the ore occurring near the contact. The granite is much altered by weathering. The rocks have been so metamorphosed by the mineralizing agencies which produced the ore deposits that but few of their original characteristics are distinguishable.

The granite is traversed by joints and shear-planes, which are easily seen in fresh exposures, and which form characteristic fissure-systems. The orebody is deposited as a linked vein parallel with the joints. The ore has been extracted for a length of about 1,000 ft. along the strike from the southeast to northwest dipping to the northeast 80°. The characteristic fossils found are trilobites, corals, starfish, graptolites, etc. The geological horizons are Silurian and Devonian.

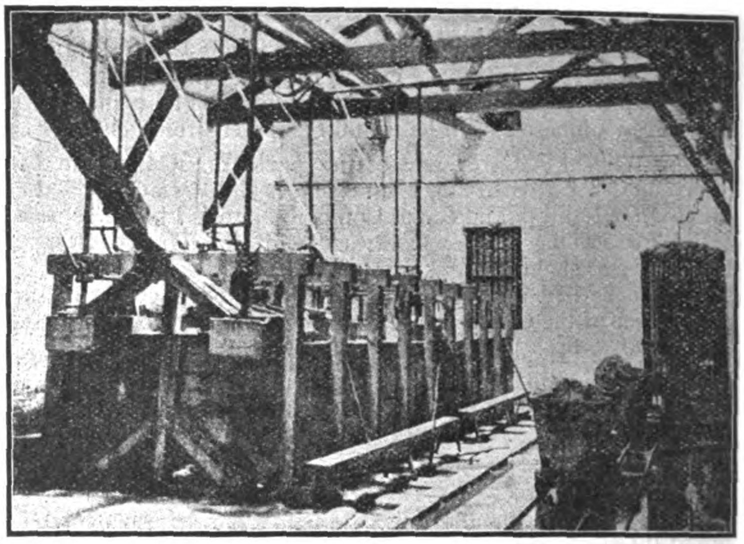
The ore is a mixture of galena, zinc-blende, and pyrite, and the gangue minerals are calcite, granite, with some dolomite. As it comes from the shaft the ore has the following average analysis:

| Shaft. | Lead, % | Zinc, % | Silver, oz. |
|---|---|---|---|
| No. 1 | 33.00 | 29.40 | 21.2 |
| No. 2 | 19.10 | 29.40 | 18.0 |
| No. 3 | 23.40 | 23.70 | 18.0 |

DEVELOPMENT. There are now two shafts in operation: one, called Hsichiuchang, is only worked by native methods and is about 600 ft. deep: the other is an inclined shaft with a slope-length of about 800 ft., at an angle of 51°. It just reaches the third level. The size of this shaft inside the framing is 9 by 10½ ft., and the head-frame is built of 10-in. pine timber. A 50-hp. hoisting-engine has been erected at the mouth of the shaft and there is a vertical winze from the third to the fourth level with a 15-hp. hoisting-engine installed underground. The depth of the winze is about 150 ft. The length of the drifts in the present workings varies from 600 to 900 ft. and the ore developed amounts to about 200,000 tons. The width of the orebody is 45 to 60 ft. Another vertical shaft has been started to the west, and has reached a depth of 100 ft. This will be continued until the orebody is reached at a depth of 600 ft. The size of this shaft is 9 by 15 ft. and it is divided into three compartments. The head-frame is made of 10 by 12-in. Oregòn pine.

In developing the mine practically no timbering was required in the drifts and cross-cuts. In the orebodies, after putting in stulls over the drifts and placing chutes at proper intervals, stoping was continued without timbering, only enough ore being drawn to allow room for stoping operations. Therefore in the most productive part of the mine there is at all times a large tonnage of broken ore in the stopes. Square sets are used only where it is necessary, the excavations being filled with waste as the stoping progresses. The stoping method used is practically a combination of under-hand stoping and filling. As the depth of the mine increases, a large amount of water has to be handled. There are three pumping-stations underground and ten pumps have so far been installed. Power is furnished by six boilers having a capacity of 600 hp., which furnish steam for hoisting-plant, compressed-air plant, pumps, and electric-lighting equipment. Rock-drills as well as hand-drills are used. Oil lamps are used instead of electric lights in some parts of the workings. Ventilation underground is entirely by natural draught.

MILLING. The ore from the mine is separated by two methods: by hand, and in the ore-dressing plant. The hand-method is the native way of working, it is as follows: First the lumps of galena and zinc-blende are separated by workmen and broken by hammers. Then the smaller particles of galena, zinc-blende, and pyrite are separated by panning. This is done in round wooden barrels with bamboo sieves. The barrel is filled with water and the sieve, placed therein, is filled with ore, which is worked by two hands with a circular motion. The particles of galena and zinc-blende are thus separated quite thoroughly and the result attained by this process is nearly the same as with the ore-dressing plant. However, the hand-process is very slow, so an ore-dressing plant had to be built in order to take care of the increasing output of the mine. The treatment is as follows. The ore from the mine is screened in a trommel with 2½-in. holes, the over-size is crushed and the combined under-size and crushed over-size then passes over a picking belt, on which coarse clean ore and waste are picked out. The ore then passes to trommels which grade it into sizes that go to their corresponding jigs. The jig tailing goes to waste, but the middling is re-crushed by rolls screened, and sent to the fine jigs. The tailing of these goes to waste, the middling is sent over Wilfley tables, which make concentrate and a tailing which goes to waste. No attempt has yet been made to recover lead and zinc lost in the coarse tailing.



JIGS IN CONCENTRATION PLANT

As has been stated already, the final products obtained by hand-concentration and the ore-dressing plant are much alike. Their average analysis is shown in the table below.

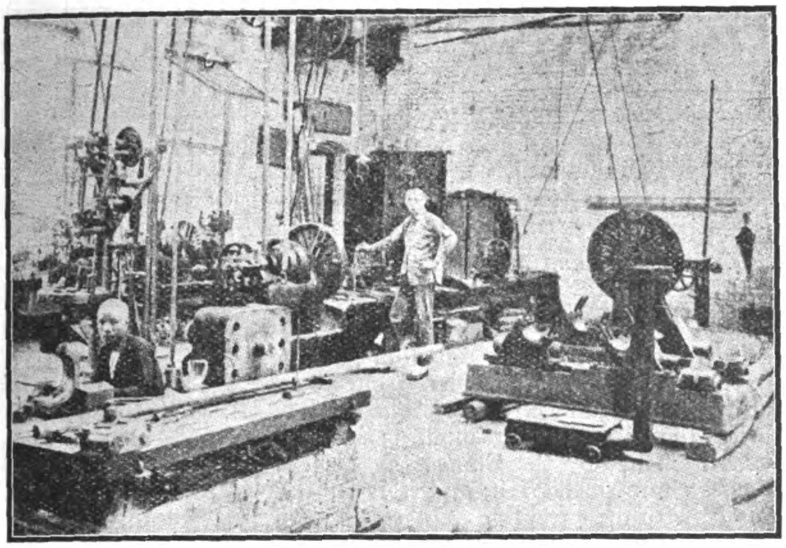
| | Lead, % | Zinc, % | Silver, oz. |
|---|---|---|---|
| Coarse lead ore: (1) | 73.3 | 4.7 | 29.8 |
| (2) | 58.3 | 11.4 | 22.5 |
| Coarse zinc ore | 2.3 | 53.4 | 3.8 |
| Fine lead ore | 74.8 | 6.6 | 24.4 |
| Fine zinc ore | 4.7 | 36.2 | 3.8 |

These five products are made by the native method.

| | Lead, % | Zinc, % | Silver, oz. |
|---|---|---|---|
| Fine lead ore | 73.3 | 7.7 | 29.5 |
| Fine zinc ore | 10.4 | 30.5 | 5.1 |

ORGANIZATION. The officers of the mine are organized into two distinct departments and each department has its own building. One department goes by the name of the Head Office and the other is called the General Mining Office. The Head Office is divided into three departments: transportation, supplies, and miscellaneous. The General Mining Office is divided into five departments, including prospecting, mining, ore-dressing, assaying, surveying, and machinery. Each department has its own staff of officials with its own head in charge.

PRODUCTION. It is not worth while to attempt to estimate the output in the early days of the mine, but since 1905, when the hoisting-engine was erected, records have been kept and the output is given in the table below. As the rock-drills are just now coming into use a great increase in the output may be expected in the next few years.



THE MACHINE SHOP

| | Galena. Tons. | Zinc-blende. Tons. | Sulphur. Tons. |
|---|---|---|---|
| 1896 | 503 | 678 | 105 |
| 1897 | 807 | 1,832 | 155 |
| 1898 | 1,882 | 1,888 | 200 |
| 1899 | 3,036 | 4,571 | 104 |
| 1900 | 2,791 | 5,822 | 205 |
| 1901 | 2,260 | 4,806 | 216 |
| 1902 | 3,627 | 5,721 | 252 |
| 1903 | 3,690 | 5,307 | 85 |
| 1904 | 2,342 | 5,558 | 58 |
| 1905 | 2,079 | 5,187 | 59 |
| 1906 | 1,792 | 6,662 | 47 |
| 1907 | 1,973 | 10,011 | 34 |
| 1908 | 2,910 | 8,134 | 39 |
| 1909 | 3,088 | 8,483 | 83 |
| 1910 | 3,553 | 7,787 | 44 |
| 1911 | 4,035 | 9,798 | 97 |
| 1912 | 2,987 | 9,444 | 339 |
| 1913 | 3,164 | 10,319 | 182 |
| 1914 | 7,625 | 22,875 | None |
| Total | 53,164 | 134,875 | 2,304 |

LABOR. The total number of workmen is about 5,000, most of whom are from the surrounding district. The scale of pay varies greatly, the highest being for underground work. The following table gives the rates of pay:

| | Rate per day. | | Rate per day. |
|---|---|---|---|
| Drillers | P0.24 | Bricklayers, No. 3 grade | P0.16 |
| Pump attendants | 0.14 | Painters | 0.16 |
| Common laborers | 0.14 | Machinists, No. 1 grade | 1.50 |
| Carpenters, No. 1 grade | 0.24 | " " 2 " | 1.20 |
| " " 2 " | 0.20 | " " 3 " | 0.90 |
| " " 3 " | 0.16 | " " 4 " | 0.60 |
| Bamboo workers | 0.16 | " " 5 " | 0.30 |
| Laborers | 0.12 | Ore-dressers, No. 1 grade | 0.18 |
| Bricklayers, No. 1 grade | 0.20 | " " 2 " | 0.16 |
| " " 2 " | 0.18 | " " 3 " | 0.14 |

The underground laborers work 8 hours per day, surface laborers work 10 hours per day.

TRANSPORTATION. From the mine the ore was transported formerly to Sungpe (the bank of the Hsiang river) a distance of about 4⅔ miles by coolies at a cost of P1 per ton. In 1912 a single-track narrow-gauge railway was built, reducing the distance to 10 li or 3⅓ miles. The train makes 10 trips per day and has entirely displaced the coolies with all the attendant trouble. The distance by water from Sungpe to Changsha is about 200 miles, and the ore is transported in native junks carrying cargoes of 20 to 120 tons each at a cost of about P1 per ton. In the spring and summer, when the river is high, transportation is very easy, the time being about four days; but in the autumn and winter, when the water is low there is great difficulty on account of the shallowness of the river. When the new developments are completed and the output increased, the mining company intends to build a number of shallow draught launches and transport as much ore as possible in the spring and summer.

GENERAL DATA. There formerly was in operation at Changsha a modern lead-smelting works, but for some reason or other it has ceased to work and the lead and zinc ore is at present sold abroad.

The police force was organized in 1912 and 70 policemen are now employed; formerly the protection of the mine was in the hands of soldiers. The police have also to undertake the work of sanitary inspection in order to safeguard the health of the people. The force is divided into groups of seven men each, under a petty officer, and the whole force is under the control of the Chief Officer of Police. They are drilled every other day for two hours and have one day in the lecture room under a trainer.

As machinists are the most important workmen, a mechanical training school was opened in 1912. There are 40 students, who are trained under a practical mechanical engineer. A series of lectures in English, Mathematics, Mechanical Drawing, and Chinese Literature is given, the course lasting three years.

Close to the Shuikoushan mine, at about a distance of one mile, is the Tsiagungchung coal mine, which was opened in 1913. The seam of bituminous coal is about one foot thick, the output per day varies between 20 and 40 tons. The coal seam is bedded in red sandstone. Prospecting work is being done through an inclined shaft at an angle of 35°, sunk at right angles to the seam in order to intersect other seams. If this coal mine is developed it will be able to cover the demand of the Shuikoushan mine and will decrease the present expense for fuel.

## JAPAN'S NEW STEEL COMPANY

One hundred names now are on the promoters' list of the Oriental Iron Smelting Company, which is to work the Taochun Iron Mine, Anhui, China. The proposed company, according to the prospectus, will have a capital of 25,000,000 yen, and plans to produce 170,000 tons of pig iron and 150,000 tons of steel annually. The company principally depends upon the Taochun Mine, but ores will be imported from Chosen and elsewhere. Coal for the smelting operations will be obtained by mixing Kyuchu, Kaiping and Penchifu coals. The works will be modelled after the Government Iron Works at Yawata.

The work will cost 18,680,000 yen exclusive of the import tax estimated at 2,300,000 yen. The whole amount is to be defrayed in three years, and at the end of the third year the buildings will be completed and the plants fully installed. However it is planned that half the subscribed capital will be paid in and the other half will be raised by the flotation of a loan. During the three years required for the preparations, the company will pay interest at 5 per cent. per annum on the capital paid in, and during the year after the commencement of actual operations shareholders are assured of annual dividends at 7 per cent though the total volume of production will still be half the maximum. The second year of actual business the company will pay 8 per cent per annum as dividend, while in and after the third year dividends at 10 per cent. per annum are expected to be paid as then the maximum amount of production will be attained and the net profit will be raised to 3,458,700 yen.

The shares of the company will be of the denomination of 50 yen each, the whole amount of capital being divided into 500,000 shares. The board, after the formal organization of the company, will consist of ten directors and five auditors.

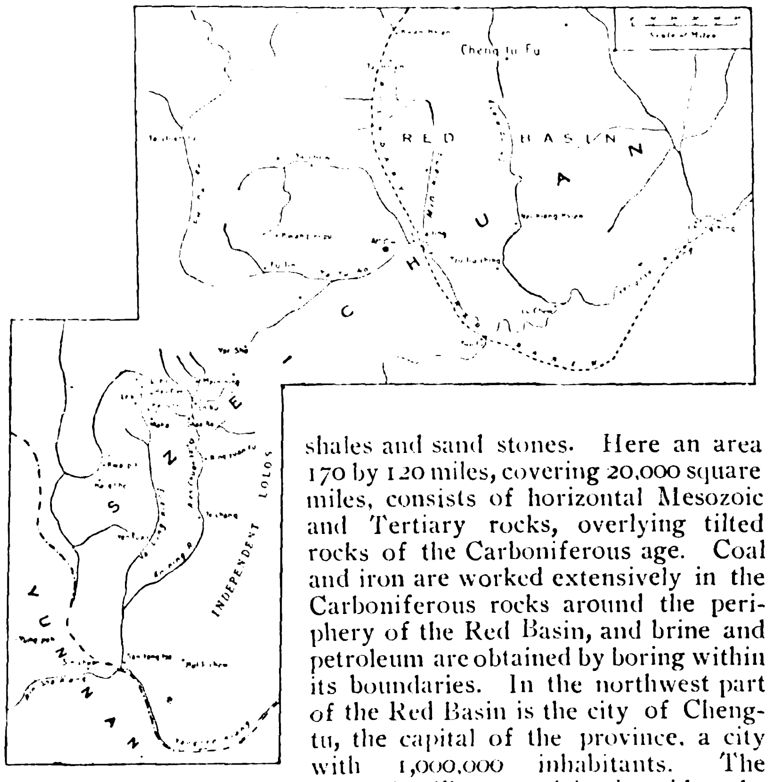
# THE MINERALS OF SZE-CHUAN, CHINA

By Herbert W. L. Way

*The author of this article has been recently engaged in investigating the mineral resources of Sze-chuan, a province of China that has for centuries been a large producer of metals and salt. Petroleum is plentiful, but has not yet been worked to any extent. Gold, silver, and copper deposits offer promise for development and treatment by modern methods.*

Sze-chuan is one of the south-western provinces of China, and it has been famous for centuries for its yield of metals, coal, oil, and salt. Its area is about equal to that of France, and it has a population double that of Shantung in the north, the next most populous province. Its mineral resources have not often been described, and are little known to English engineers. Having recently made a journey through the province, some notes of my observations may be of interest.

Sze-chuan is roughly divided into an eastern and a western part by the Min Kiang river which flows from north to south. On the west the mountain ranges rise one above the other to 10,000 ft., 15,000 ft., and 20,000 ft., and form the eastern flank of the great Tibetan plateau. On the east lies the Sze-chuan 'Red Basin,' so called from the prevailing colour of the Triassic red shales and sand stones. Here an area 170 by 120 miles, covering 20,000 square miles, consists of horizontal Mesozoic and Tertiary rocks, overlying tilted rocks of the Carboniferous age. Coal and iron are worked extensively in the Carboniferous rocks around the periphery of the Red Basin, and brine and petroleum are obtained by boring within its boundaries. In the northwest part of the Red Basin is the city of Cheng-tu, the capital of the province, a city with 1,000,000 inhabitants. The surrounding plain, known as the Chengtu plain, is said to be the most fertile in the world and it supports a population of 4,000,000 inhabitants. Here agriculture has reached a high level of perfection, and opium, tobacco, sugar cane, wheat, barley, rice, peas, buckwheat, oats, and all kinds of vegetables are produced in large quantities. Among the fruit trees are the orange, persimmon, apricot, pear, plum, and mulberry. The plain is irrigated by a complex system of water-courses extending between the Min Kiang and Chung Kiang rivers.




*The Red Basin.*—In the southwest of the Red Basin are the noted brine and petroleum wells of Tzuliuching and Chia Ting, which are distant about 35 miles apart. Between these two centres there are from 8,000 to 10,000 of these wells, and also some natural gas wells, the gas being much used by the Chinese. Of the brine and petroleum wells, the most profitable to the Chinese are those which produce the highest percentage of brine and the lowest percentage of petroleum; in fact, a great many wells are closed-down because the percentage of oil is too great for the profitable production of brine. If a well produces over 50% of oil it is considered unprofitable. Those wells that are working produce from 15% to 50% of oil, 50% to 85% of brine, the average being about 33% of oil and 66% brine. The oil is reckoned by the Chinese as a necessary evil. They hate the touch or smell of it, and it is run out to soak back in the sands, with the exception of a small quantity used for lighting the works. For the latter purpose it is burnt in a crude state in earthenware lamps such as were used by the Romans. At Tzuliuching, the chief centre of the industry, there are about 3000 wells from 1700 to 3000 ft. deep, producing in the aggregate 400 tons of brine and petroleum per day, that is 300 tons of brine and about 100 tons of oil, most of the latter being run to waste. The brine is a saturated solution, and by evaporation yields about 25% or 70 tons of clean white salt per day.

These wells take from one to three generations to sink. The shortest time in which a well has been sunk to brine is 30 years. When the brine weakens, the well is sunk a few feet deeper, and the brine immediately strengthens. The wells are sunk by hand for 100 to 300 ft. according to the nature of the rock, and are filled with baulks of cypress timber, which have 6 in. holes bored through them from end to end. These baulks are gradually built up and wedged in place by rock, and the space in the well unoccupied by the timber is filled with clay puddle to keep out the surface water. Afterwards the bore-hole is sunk with a jumping beam having a long iron drill with a chisel bit at the end attached to a bamboo ribbon rope. A high derrick is erected over each well. The bucket for drawing the brine and oil is a bamboo 20 or 25 ft. in length and 4 to 5 inches in diameter, with a valve at the bottom. This is hoisted by various methods, but usually by winding the rope round a large vertical drum 20 ft. in diameter. The drum is rotated by 6 or 8 buffaloes, or at some wells by mules or oxen. After the bucket is hoisted, the man in charge puts a hook round the lower end, pulls it over a small cistern, and opens the valve with an iron rod. From here the brine and oil run through bamboo pipes to settling tanks where separation is effected by specific gravity. The oil is first run off, and the brine then pumped by wooden chain pumps through bamboo pipes to the elevated tanks at the various evaporating plants. Each of these plants has about two dozen evaporating pans of heavy cast iron about 4 ft. in diameter and 1 ft. deep, into which the brine trickles slowly through the bamboo pipes. The natural gas is led by the same means under each pan and escapes through a hole in the pipe, to which a burner in the shape of a ball of clay with a hole through is attached. Wells which produce an abundance of natural gas are used solely for supplying these plants with fuel. It is said that the chief well has been supplying gas continuously for 280 years.

At Chiating the brine industry is not so prosperous as it was 50 years ago, as the oil has been constantly increasing, and the brine decreasing. In this locality two wells are worked by one hoisting drum placed equidistant between them, the wells being 200 ft. apart, and the drum hoisting the bucket from one well while it lowers the bucket in the other. Otherwise the conditions are the same as at the Tzuliuching.

About 18 miles south of Tzuliuching, there is a seepage where the ground is so saturated with oil that the latter will burn, and there are crevices in the rocks which continually emit gas, which is sometimes set alight by the Chinese.

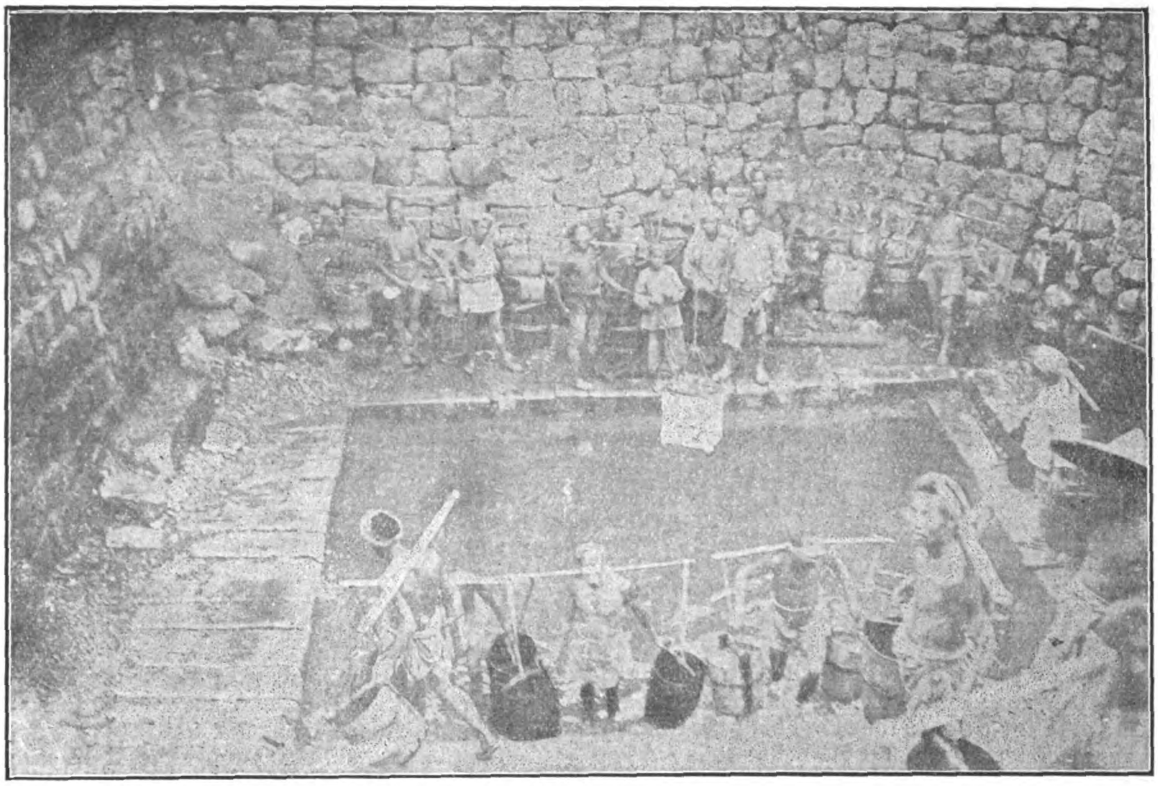
*The Lolo Country.*—On the western side of the Min Kiang, after passing Ya Chow and entering the mountains to the north

and west of the independent Lolo country, are the two prefectures of Yachow and Ningyuen, which cover an area of about 72,000 square miles. From the Chienchang valley through which flows the Anning river on the east, to the Tibetan frontier on the west, and from Tachienlu on the north to the Kinsha river (or river of golden sand) on the south, there is a stretch of country having an area of 40,000 square miles that is without doubt richer in mineral wealth than any other part of China, and one of the most highly mineralized spots in the whole world. This is a region of a great disturbance geologically, and it is full of lodes and veins carrying gold and metallic ores. The streams and rivers contain many deposits of alluvial gold. Evidences of mining activity are seen on all sides, and mule trains are seen carrying copper metal and matte, lead bullion, iron, and other metals.

The lodes are worked in a primitive way in the oxidized zones by the aboriginal tribes, some under the supervision of Chinese. The sulphides are left behind as too refractory. the miners are paid half its value, as they work on a 50% royalty.

The workings are quite free from water, and as the lode dips with the slope of the mountain, the mine can be worked by adits to a great depth. A new cross-cut tunnel has recently been started, which should cut the vein at 260 ft. from its entrance. The workings on the Mala mine extend for 550 ft. along the strike of the vein, and to a depth of 400 ft. on its dip which is 35° from the vertical. The new adit should open up a large body of ore, and is expected to give at least 1400 ft. of backs below the outcrop.

Four miles north of Maha is the Ko Lo Lo copper mine, part of the workings of which have been carried away in a landslide. The workings are extensive, and are of more miner-like character than those at Maha. Near the entrance, and in the main adit, is a deep untimbered shaft 6 ft. square, descending in a series of steps, vertical for 6 ft. then a step 3 ft. wide, evidently constructed in that way for passing up ore by hand, and in



Salt Wells of Szechuan

The principal gold mine worked by the Lolos under the Imperial Government and Merchants of Szechuan is the Maha. This contains a wide lode varying from 10 ft. to 50 and 100 ft. The richer ore-shoots average 12 or 14 dwt. of gold per ton, and carry considerable silver, copper, and lead and the lode from end to end averages 6 dwt. The ore has only been worked for about 20 years, but alluvial gold has been washed from time immemorial by sometimes as many as 15,000 men at a time, both in the valley in which the mine is situated, and in the sands and gravel bars of the Yalung river, 4000 ft. below the present workings.

There are extensive native workings on a lode that outcrops beyond the Maha mine on the next mountain, but there the oxidation has not gone so far, and most of the ore is too refractory for the primitive methods of the Lolos, who throw the sulphides, chiefly pyrite, galena, and chalcopyrite, on the dump. The ore selected for crushing is carried by hand over the summit of the ridge to the Kololo creek 400 ft. below, where there are 80 stamps worked by 40 overshot water-wheels. Each stamp weighs about 40 lb. and crushes 600 lb. of ore daily in a stone mortar. About 50% of the gold content of the ore is saved by means of quicksilver, which is obtained from a cinnabar mine situated at Hangcho to the south of Kwa Pit. The amalgam is taken to the Mining Bureau at Shaaba, where

reality forming an incline shaft at an angle of 27° from the vertical. The mine has not been worked within the memory of man, and no records are in existence at the Mining Bureau. A very large quantity of mineral must have been extracted when the mine was working. The ore visible on the roof of the adit consists of a reticulation of quartz veins containing copper sulphides, carbonates, and sulphates. There are a great number of derelict stone blast-furnaces in the valley below.

The Chinese smelt their copper by the same process as Europeans, but their methods are crude. After stall-roasting the sulphide ores, they smelt in diminutive blast-furnaces, 4 ft. high by 3 ft. wide internal dimensions, built of stone and fireclay. Each furnace is only good for a 24 hours run, after which it is pulled down and rebuilt for another run a few days after. The blast is supplied by double-acting square wooden bellows, usually worked by hand, though sometimes by water-power. After the ore is reduced, and the slag run off, the molten copper is run into a hemispherical well, and quenched with water.

At Kwang Ni Pu, near Ya Chow, and also at Lo Ku, are iron-smelting works and foundries, treating hematite and limonite ores of high grade, though the extraction is low, averaging 45%. The fuel used, as in copper-smelting, is charcoal, and limestone is used for fluxing. The furnaces are

substantially built of hewn stone and fire-clay; 30 ft. high and 5 ft. wide at the tuyeres, widening out to 10 ft. at the bosh, and tapering to a small opening at the top. The tuyere is of sandstone, having a round hole drilled through for the blast. The blast is supplied by double-acting bellows worked by a water-wheel. The iron is cast in thin plates of fine quality, which are broken up and melted in cupolas with hand bellows, and the molten iron is cast in moulds made of kaolin on a wicker foundation. They cast pans for evaporating brine, and cooking pans for boiling rice. The latter are real works of art, being from 20 to 30 inches in diameter by 9 to 12 inches deep, the thickness of the casting being only 1/16 of an inch at the rim, and 1/4 of an inch at the base.

*Other Mineral Deposits.*—So far, I have based my account of the mineral deposits of the province on my own observations. The Mining Bureau contains many other records some of which I quote in the following paragraphs.

The records show that in the Sichang district there are veins carrying ores of gold and copper. To the north of this at Lokutetze are veins carrying gold and lead ores high in silver, said to produce 20 oz. of silver per picul of ore (a picul being 133 lb.)

At Haupien, on the Yalung river, is an iron mine containing a large body of highgrade ore, which supplies the Loku smelter. West of this, across the Yalung river, at Lokoti are veins of copper ores; this is close to the spot where the Yunnan Company's survey of the railway from Burma crosses the Yalung river.

At Tzukuo Pit, northeast of Lokoti, there is a rich gold-quartz vein, on the outcrop of which a historical nugget weighing 97 lb. was found. This vein has been worked to a considerable extent by the Government Merchant Co-operative Mining Bureau, who abandoned it because the oxidized ores were exhausted, and from lack of capital to supply means for reducing sulphides.

A Matusan in this district is a vein of silver-lead ore, said to produce 8 oz. of silver per picul of ore. Also a vein carrying silver in the form of argentite.

In the Yungchang district, southwest of Tatsienlu, are numerous quartz lodes and alluvial gravel bars. From Mazahan to Lakwan many outcropping quartz veins are known but have never been prospected.

At Tatsienlu there are government silver mines producing 5 to 6 oz. of silver per picul. The vein is 4 ft. wide, and is worked along its strike for over 10 miles. This vein contains complex ore carrying copper silver and lead, but it is worked only for its silver content.

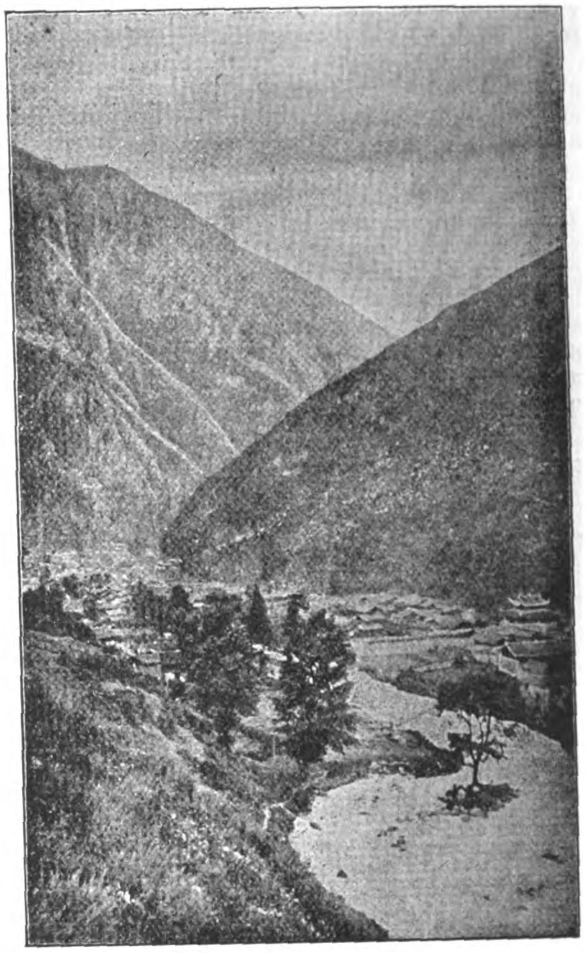
To the north of Tatsienlu is a large auriferous gravel area, situated at the junction of a stream with the Yalung river north of Hokea, said to produce 13 dwt. of gold per cubic yard.

Near Yershe, at Tzutidi on the Tatu river in the neighbourhood of three lakes and hydrothermal springs, there are veins of gold, silver, and copper ores. At Huilungchang in this district there is a vein 6 ft. wide containing copper oxides. At this place 90 smelters worked very prosperously until 10 years ago, when the Lolo Chiefs summoned their men and drove out the Chinese, and have never allowed them to return. But it is not anticipated that any objection would be raised against Englishmen working it.

In the southeast section of the Yershe district veins carrying silver-lead ores are found, and also deposits of bituminous coal of good quality.

In the Yachow district at Lushan there are the best coal seams in the two prefectures, and also a stratum of calcareous conglomerate impregnated with native silver and horn silver. South of the Kinsha river at Fukean, the limit of navigation, on the range facing Liupo, there are numerous veins containing copper and silver ores. These mines supplied the greater part of the silver used in the Tang dynasty. The property is outside the two prefectures, but is included in the copper monopoly.

Near Huilochow are numerous veins of gold, copper, and silver ores, which are worked extensively by the aborigines, especially the Tatungchang (prosperous silver mine) and Ta Whan Shan (10,000 jewel mine).



TATSIENLU WHERE GOVERNMENT HAS SILVER MINES

At Kwapit there are extensive alluvial deposits rich in gold, and well situated for hydraulic sluicing, especially in the Weilitotze nine miles distant.

In the Yenyuan district are veins containing gold, silver, lead, copper, and zinc, and also quicksilver. There is a quicksilver mine also at Hangcho south of Kwapit. This is worked by native miners, who supply the Maha mine with quicksilver in lieu of royalty. This mine also supplies the Chung King vermilion works with cinnabar.

In the Kwapit district there are extensive alluvial gold deposits, well situated for hydraulic mining, especially at Weihitotse, nine miles from Kwapit.

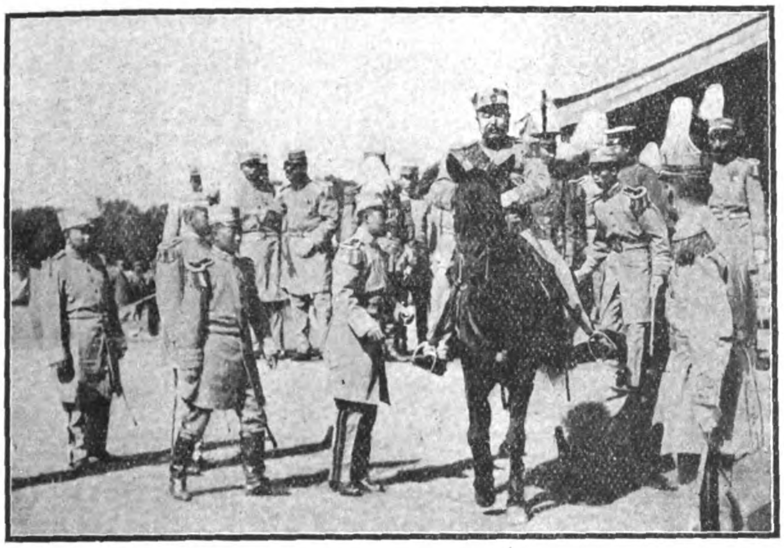
In concluding this sketch of Szechuan, I may say that the higher plateaux and slopes of the mountain ranges are well wooded with trees useful for their timber, besides pine forests in which the Chinese have movable match factories.

## MINING IN KOREA

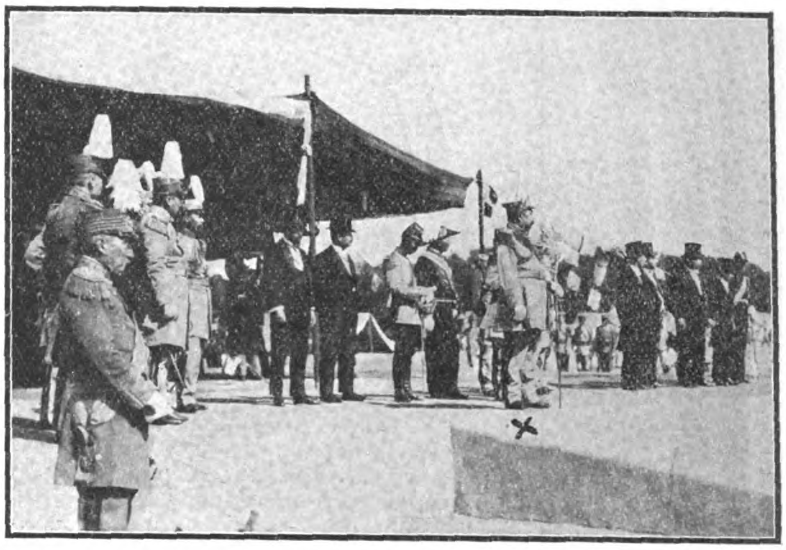
According to an official report quoted by the "Seoul Press," the total output of minerals in Korea during last year was Y.10,515,966 in value, showing an increase of Y.1,990,000 as against the preceding year. Foreign mining people obtained the lion's share of the proceeds, their earnings being Y.7,311,200, Japanese obtained Y.2,820,600, while minerals collected by Koreans amounted only to Y.2,820,000 in value, or one-twentieth of the output by foreigners. Particulars according to different kinds of minerals taken are as follows:—

Gold bullion, Y.6,767,253; Gold ore, Y.192,108; Alluvial gold, Y.699,390; Tailings, Y.970,298; Silver, Y.22,594; Copper, Y.9,506; Iron ore, Y.357,409; Zinc ore, Y.269,438; Graphite, Y.215,077; Coal, 997,746; Other minerals, Y.15,147; a total of Y.10,515,966.

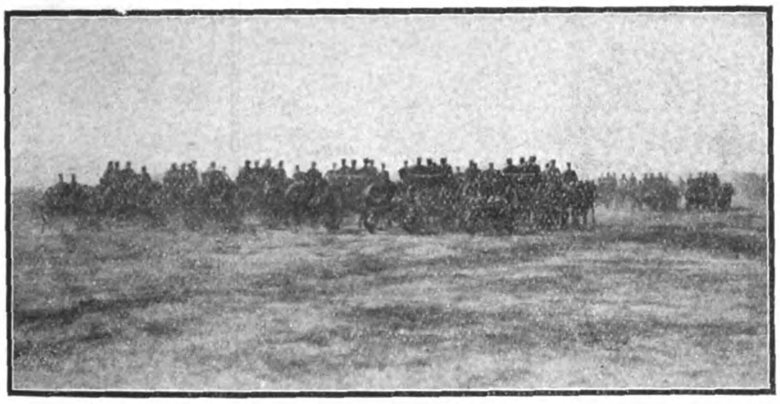
# REVIEW OF CHINA'S MILITARY FORCE



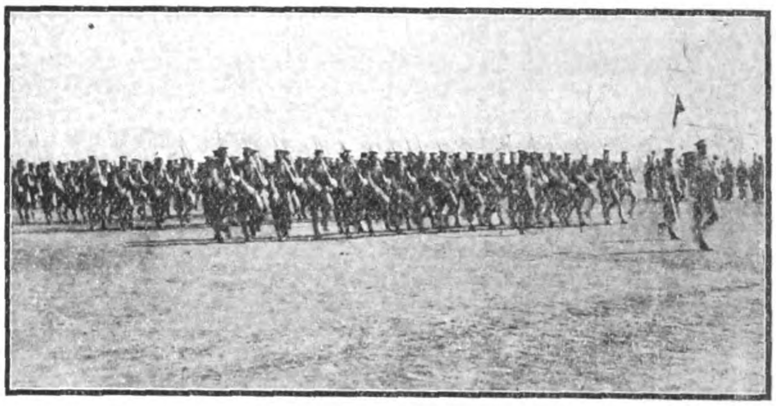
President Li Yuan-hung about to Inspect the Troops



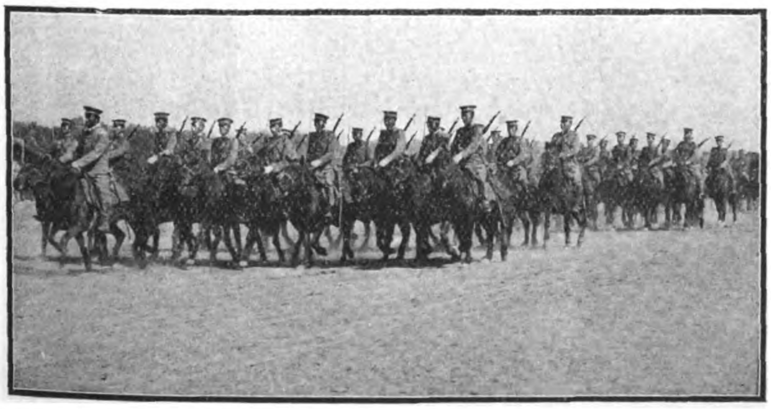
President Li Yuan-hung Viewing the March Past



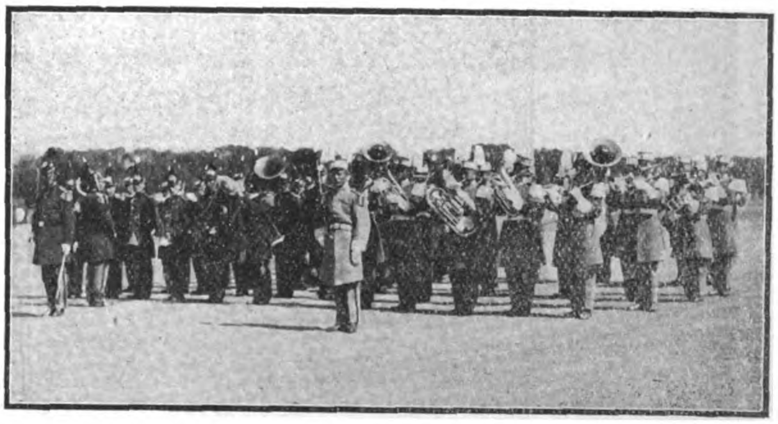
Portion of the Artillery



Infantry Marching Past

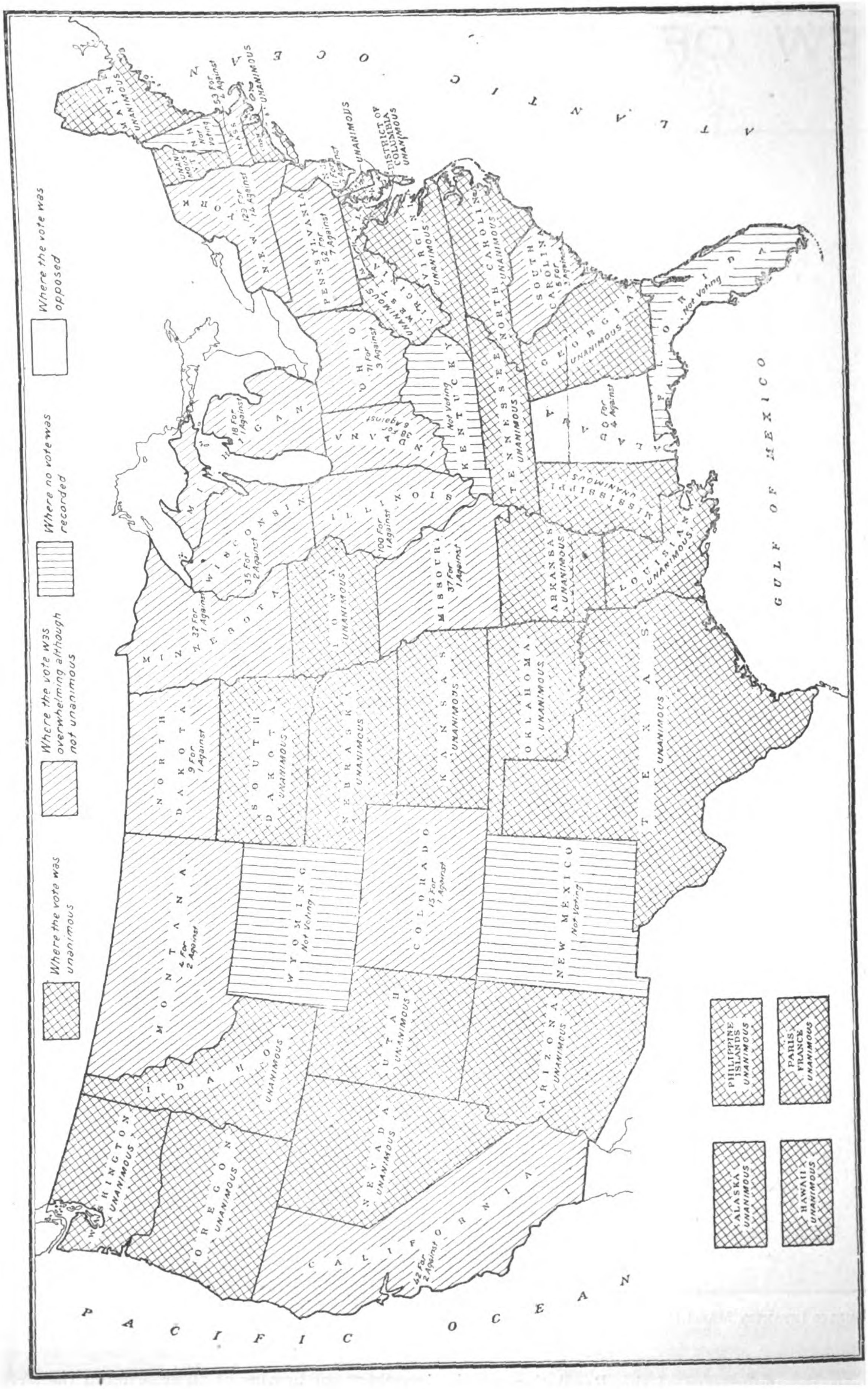


Mounted Infantry Marching Past



Military Band

On October 10, the anniversary of the Revolution which overthrew the Manchus and brought about the establishment of the Republic, President Li Yuan-hung reviewed the troops stationed at Peking. The turn-out was excellent and the marching and bearing of all branches of the service evoked warm appreciation from foreign spectators. Three aeroplanes ascended and two flew to Peking after the march past of the troops.



Where the vote was unanimous
Where the vote was overwhelming although not unanimous
Where no vote was recorded
Where the vote was opposed
PACIFIC OCEAN
ATLANTIC OCEAN
GULF OF MEXICO
PHILIPPINE ISLANDS UNANIMOUS
PARIS FRANCE UNANIMOUS
ALASKA UNANIMOUS
HAWAII UNANIMOUS

# THE OVERWHELMING BUSINESS VOTE FOR UNIVERSAL MILITARY TRAINING

*A Graphic Presentation of the Actual Vote by States Cast by Commercial and Trade Organizations in the Referendum on National Defense Taken by the Chamber of Commerce of the United States*

(HERE IS WHAT IS MOMENTOUS IN THIS CHART OF HOW 359 COMMERCIAL ORGANIZATIONS VOTED ON UNIVERSAL MILITARY TRAINING. ORGANIZATIONS IN 26 STATES VOTED *unanimously* IN FAVOR; IN 16 OTHER STATES THE VOTE WAS OVERWHELMING ALTHOUGH NOT UNANIMOUS; 5 STATES FAILED TO VOTE; IN ONLY 1 STATE WAS THE VOTE AGAINST. SUCH A DISCLOSURE OF PUBLIC OPINION IS WITHOUT PRECEDENT IN THIS COUNTRY).

How many people in the United States, even how many business men, would have ventured six months ago to predict that the commercial and trade organizations of the Chamber of Commerce of the United States, the leading business associations of the country, would come out solidly for universal military training? Yet such a prediction would, if anything, have proved short of the truth. Business men have gone further. They have registered their support of a system of universal military training which is to be enforced by law to provide adequate industrial, as well as military and naval forces, both in peace and in war. The system is not to stop short at the brink of war and turn the fate of the country over to patriotic volunteers; it is to be enforced by law to provide man power for defense in war.

Public opinion has gone forward with giant strides since the outbreak of the European war. The army and navy appropriation bills in Congress go far beyond anything ever before considered in time of peace. The navy building program of the Senate includes eight capital ships for the first year, in a scheme covering a period of three years. This very nearly measures up to the standard set in Referendum No. 15, calling for a navy second in the Atlantic with a surplus force in the Pacific big enough to protect our possessions, trade routes and the Canal. The army reorganization law has already provided for a regular force in excess of two hundred thousand men—very nearly up to the number called for by the General Staff of the Army and endorsed by the referendum. The army appropriation bill reported by the Senate Committee on Military Affairs provides for a Council of National Defense whose functions measure very closely to the combined duties of the Council of National Defense and Staff of Industrial Mobilization called for by the vote of the business men of the country. A further provision authorizes direct purchases from private firms analogous to the system of prearrangement for war supplies approved in the referendum ballot.

However, one essential element of the referendum, indeed the keystone of the arch, at time of going to press is still lacking consideration by Congress. There is no bill before either the Senate or the House which provides for a national system of universal military training. Yet publicopinion is swinging strongly to a final conclusion on this vital subject. One of the most significant indications of this was the resolution drafted at the conference of mayors of a large number of cities at St. Louis last winter. Added to that has been the active propaganda of the National Security League and a number of other patriotic associations. And now has come the overwhelming testimony from that section of opinion which is not only most conservative but which is also most closely concerned with the actual cost and with the economic problems which go with any system of universal military training. The ballot shows 889 votes in favor and only 56 against a system of universal training which shall be enforced by law to furnish men for defense in war as well as in peace. Forty-three States were represented. A responsible and intelligent element of the citizens in twenty-four of these States voted unanimously. In eighteen others the vote ranged from more than 100 to one to two to one. In only one State was the vote opposed.

It is no exaggeration to say that this is the most momentous disclosure of public opinion which has yet been produced. What does it mean?

The actual wording of the question as finally drafted in the ballot was the result of exhaustive study and discussion on the part of the committee which drew the referendum report. Here it is:

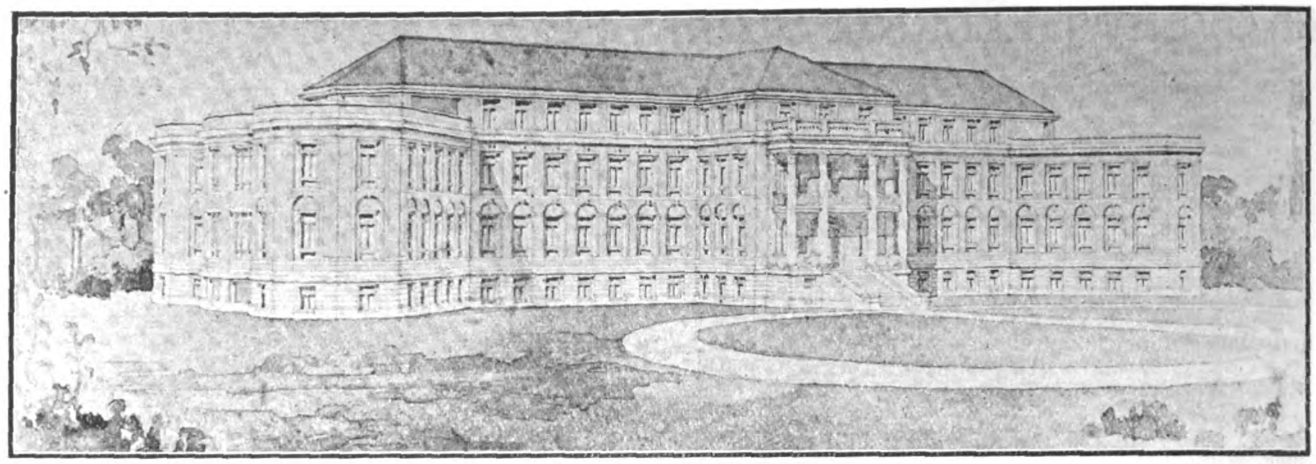
The Committee, recognizing military obligation equally with the civic obligations as a fundamental duty of democratic citizenship in a republic, and to establish a system which will affect every man alike—recommends that universal military training be adopted as a fundamental democratic principle of our military policy and be enforced by law to furnish adequate land, sea and industrial forces in peace and war.

This is not a simple statement for a ballot. But the subject is a new and complicated one for Americans and has many angles which are as yet unfamiliar in the country. The main point is that business men have now recognized the military obligation in a democracy as of equal rank with the civic duties of citizens and stated their conviction that recognition of this principle is fundamental. They have gone further, and recorded a conclusive vote that a system of universal military training is one which will affect every man alike. In other words, instead of being militaristic or aristocratic, it is a thoroughly democratic principle.

Finally, business men are not afraid of compulsory military education. They believe it will develop a better-balanced and more self-disciplined youth from which to build succeeding generations of American citizens. They have registered their opinion that it will not only prepare citizens for wars which all hope to avoid, but will fit them better for virile, substantial peace which all hope to enjoy. They do not fear the obligation of military training any more than that of taxes or of education. Few believe that if the collection of taxes were left to the compulsion of the spirit of America very much revenue would accrue. There is no less reason to believe in obligatory taxes than in obligatory defense. Long enough the patriotic and self-sacrificing volunteer has shouldered the rifle, and with it the duty, of his neighbor. Long enough has he been the victim of the loosely knit and slow-moving military machine which, in our own history, invariably results from such a system. The beginning of compulsory education was regarded by a famous English philosopher, Herbert Spencer, as the doom of progress; it has proved to be one of its mainstays. The acceptance by the American people of an equal obligation for military duty on the part of all citizens should, it is believed, prove of equal value. It is now urged emphatically by a responsible and conservative element of the public and in this movement the Chamber of Commerce of the United States will, therefore, be led necessarily, to play a large part.

## THE SIAMESE SOUTHERN RAILWAY

A new section of the Siamese Southern Line was opened on July 17, some 194 kilometres in length, from Bang Na to Chumpon. This connects Chumpon with Trang and Singora, the service being on alternative days. Trains will leave Singora and Trang on Sundays, Tuesdays, and Thursdays. Trains will leave Chumpon for Trang and Singora on Tuesdays, Thursdays and Saturdays. The opening of this section leaves unfinished only a section of 86 kilometres of the main line communication between Bangkok and Singora and Trang. The uncompleted section is between Bangtaphan and Chumpon. This it is expected to open in October. The total length of line open including the Chumpon Section is 995 Kilometres. The line between Ootapo and the Kedah boundary has a total length of 48 kilometres. The earthwork is nearly finished, and rails have been laid for about 27 kilometres. The connection with the F.M.S. system, which will be available for construction trains, is expected to be made about October.



Plan Front Elevation of the Peking Central Hospital

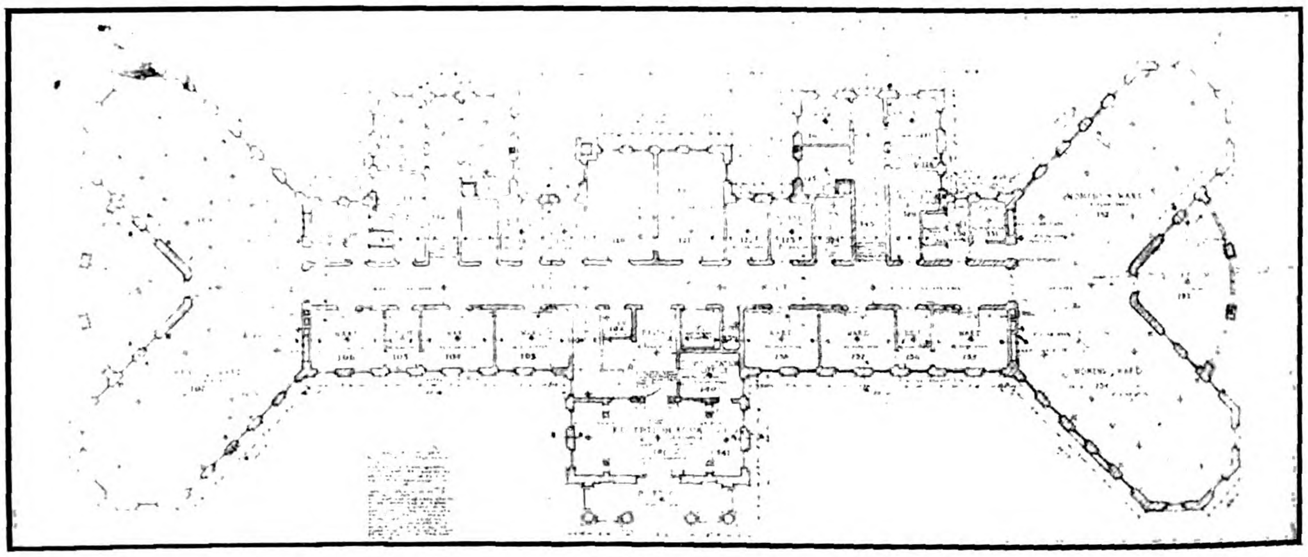
# CHINESE MODERN HOSPITAL FOR PEKING

The modern buildings gradually being erected in Peking for public purposes are seriously threatening the disuse of the ancient type of picturesque architecture confined in these days to dirty if not dilapidated yamens. As time goes on all important public offices will be transferred from the mouldy, labyrinthine structures designed hundreds of years ago to compact quarters constructed on up-to-date models, a change which will in itself make for greater official efficiency if there is anything at all in the theory that environment exercises an influence upon the human mind and moulds the conduct of man.

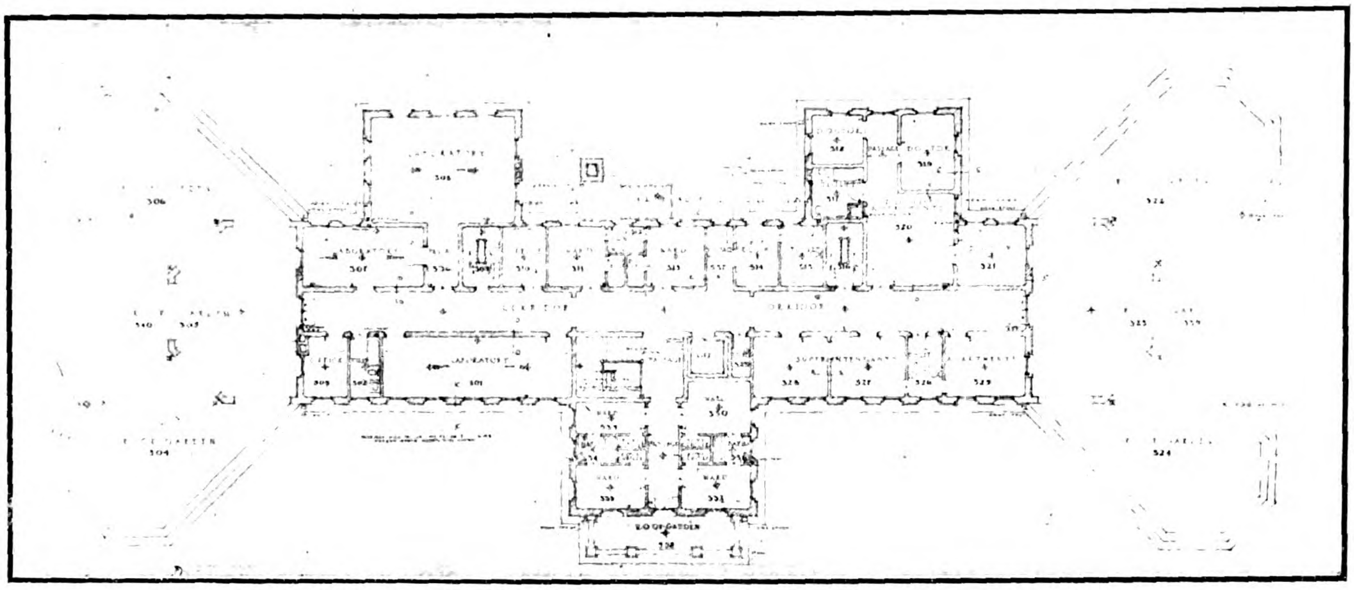
Among the important modern structures now beginning to grace the Capital is one that will be known as the Peking Central Hospital—an institution which will stand alone as the first thoroughly equipped hospital in China erected and controlled solely by Chinese.

The site of the hospital is an excellent one. It is in the western part of the city, on the main street to the gate known as the Pingchihmen, between the Temple of Imperial Ancestors and the unique Mongolian Pagoda which towers above all houses in the vicinity. Five or six acres of land were procured and upon this the building is in course of erection—a building which is to be up-to-date in all respects. To Dr. Wu Lien-teh, the organizer of the hospital, has been left the whole arrangement of building and equipment. He happens to be supported by a Board of Trustees who, an unusual thing with Chinese Boards, seem to be of a progressive turn of mind, and with a free hand is able to accomplish much more than is usually the case in China. But he has not gained his success without bitter disappointment. It has come as a result of tenacity of purpose in the face of heart-breaking official indifference or obstruction and perhaps bare-faced corruption in one outstanding incident. The conception dates back to the period immediately preceding the Revolution of 1911-12, when Dr. Wu had made such headway with his propaganda for a Central National Hospital that certain provinces had been induced to subscribe a total of Taels 50,000, which sum was placed in the hands of the then Treasurer of the institution, Prince Tsai Shun, and there it has remained ever since, prayers and threats being alike unavailing.

The scheme of operations at that time embraced co-operation with the American Red Cross, both parties to provide a moiety of the capital required, but progress along this line was rendered abortive by the outbreak of the Revolution. Temporarily interrupted in this sphere Dr. Wu Lien-teh devoted himself to the organization of a plague preventive service in Manchuria, and with a smaller annual sum from the Government than what one Peking journal describes as "the salary of a foreign adviser," he has managed to perform highly commendable work, hospitals being established in Harbin and centres along the Peking-Mukden Railway. While thus engaged the original scheme was kept in mind by Dr. Wu, and when Mr. Chow Hsueh-hsi became Minister of Finance he arranged for the provision of $100,000 as an earnest of the Government's interest in the proposal. With



First Floor Plan



THIRD FLOOR PLAN

this sum available a meeting of prominent Chinese was called and there a total of $200,000 was promised and the decision was made to go ahead with the work, a Board of Trustees being appointed to take charge of the finances. Mr. Tsao Ju-lin was appointed Chairman and Mr. Sze Sheng-tze Treasurer, Dr. Wu being the Medical Director in charge of the erection and equipment of the hospital. Dr. Wu was instructed to consult architects and the firm of Shattuck and Hussey, of Chicago and Peking, were engaged to design the buildings. They have planned a compact modern structure consisting of a basement and three storeys, spacious enough to accommodate the various departments of a modern hospital for 150 patients and a large number of out-patients.

The building, which faces south, is of grey brick, with a roof of red tile. The floors are reinforced concrete throughout. Heating will be effected from a central hot-water installation, with a special steam heating equipment for the operating rooms.

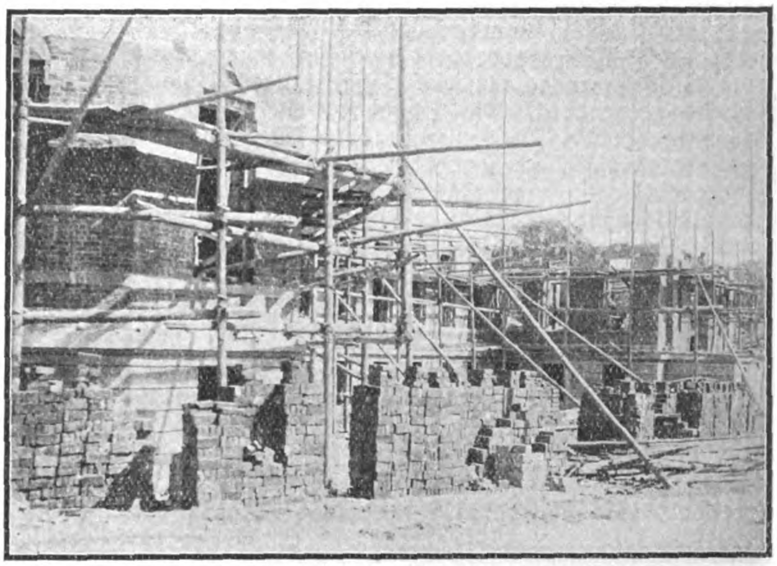
The basement will contain the out-patient department, the surgical department, medical department, skin department, opthalmic department, nose and ear, and women's departments, as well as X-ray, massage, photographic, and disinfection chambers, the kitchens and servants' quarters. All the rooms are large, well lighted, and well arranged, as is the case with the floors above.

The main entrance to the hospital is on the south side, a flight of wide granite steps leading to the first floor, where, in the centre, are the reception and consulting rooms. At each end of the building are excellent general or third-class wards, splendidly lighted, capable of accommodating 25 patients each. Lavatories, bath rooms, service rooms, diet kitchens, linen rooms, and nurses rooms are arranged in proximity to constitute distinct units. Near the general wards are the second class wards facing south. One bathroom and lavatory serves three wards and each ward accommodates two beds. The first-class wards are in the centre of the building facing south. Each has a lavatory and bathroom attached and a separate verandah. A solarium is provided at each end of the building.

The second floor is arranged in a manner similar to the first, with the exception that it contains the operating chamber, facing north. Special instrument cupboards are provided in this room with a movable auditorium for students, while an ante-room for surgeons will give ample space for private lockers, etc. Adjoining the operating theatre is an anæsthetic room, wash room, sterilizing room and recovery room.

The third floor contains more first-class wards, facing south, quarters for the superintendent and medical staff in the east wing, and chemical and bacteriological laboratory in the west wing. On the roof is a large garden for the use of patients, access being had by a lift. The building is equipped with fire escapes and water services. The furniture will be upon best hospital lines, and the equipment will be of the most modern character. Seventeen cases of surgical instruments have already been presented to the hospital by the Chinese Government.

Owing to the distance of the hospital from the city a clinic and dispensary will be established near the Chin-men (the central south gate of Peking Tartar City) for the examination of paying and other patients, and an automobile ambulance service will be maintained between the clinic and the hospital.



STATE OF BUILDING ON SEPTEMBER 25, 1916

The staff will consist of one superintendent, four resident medical officers, consulting surgeons and physicians for special departments. It is desired to utilise the services of graduates from Europe and America, of whom quite a number have returned to China, and it is hoped that other doctors will use the hospital for the treatment of their patients who may be disposed to go there. An important aim of the founders of the hospital is to make it the nucleus of a proper medical school under Chinese auspices.

The walls of the building are now erected and it is expected that the opening will take place sometime in September next.

# THE NEW REGIME IN CHINA

## Review of Political Developments since the Death of President Yuan Shih-kai

With the death of President Yuan Shih-kai the political situation in China underwent a sudden and great change. The new President, General Li Yuan-hung, assumed office with the confidence and goodwill of all parties. Regarded by many as the man primarily responsible for the success of the anti-Manchu rebellion, it was held to be peculiarly fitting that he should be the titular head of the Republic. That General Li should seek self-aggrandizement was not deemed possible even in the most suspicious quarters, and fears of a struggle for power between the Chief Executive and the representatives of the people disappeared.

Great as the change was, however, there remained problems whose solution was certain to prove difficult. Feeling between the north and south had been exacerbated during the progress of the anti-monarchical movement. The death of President Yuan Shih-kai suddenly transformed a number of men who had been fugitives and outlaws into powerful political factors. These men during their lengthy period of exile abroad or in the foreign settlements or concessions in China had nursed their resentment, not only against Yuan Shih-kai, but also against all those who had supported him or had been at all closely identified with the carrying out of his policies. Some of the extremists called for capital punishment of those who had supported the monarchical movement and the confiscation of their estates. The good sense of the majority, however, prevented support being given to these vindictive counsels, though it was found necessary to placate the extremists by proscribing certain prominent "monarchists."

The first definite indication that there was still a divergence of political thought between north and south was given when the south demanded that the Nanking Provisional Constitution should be restored. The Premier, General Tuan Chi-jui, for some time resisted the demand. From his point of view it was undesirable and unnecessary to change the Provisional Constitution, or Constitutional Compact of May, 1914, in view of the fact that in all probability a permanent Constitution would be enacted in a few months. The south, however, was adamant. The Nanking Provisional Constitution imposed great restrictions upon both President and Cabinet and gave paramount power to Parliament. On the other hand the Constitutional Compact vested supreme power in the hands of the President, and it was apprehended that although General Li Yuan-hung would not personally abuse his powers, the Cabinet might arrogate them to itself.

The demands made by the south in the first instance were as follow. (1) Immediate reconvocation of the former National Assembly; (2) Punishment of monarchist leaders; (3) Reorganisation of the provisional Cabinet so as to exclude all persons connected with the Chou An Hui or the movement to place the late President on the throne; (4) Control of the police and garrison in Peking to be placed in the hands of one of the southern leaders; (5) The revival of the Nanking Provisional Constitution. These demands were put forward a few days after the death of the late President. The Premier was understood to be averse to the reconvocation of the former National Assembly on the ground that it would be better to convene a smaller body representative of the provinces to pass a new Election Law so that a new Assembly could be summoned with as little delay as possible. This view was supported by General Feng Kuo-chang, the Military Governor of Kiangsu, who further recommended the revival of the Nanking Provisional Constitution by Presidential mandate. The Premier, however, deemed that it would be inadvisable to restore the Provisional Constitution by mandate as if that were done the Government might be accused of having acted unconstitutionally. The matter continued in abeyance for some time. Until June 21 there was no move on the part of any of the provinces that had declared independence to acknowledge the authority of the Central Government, but on that day a mandate in the following terms was issued:—

> A telegram from Chenwu Shang Chiang Chun Lung Chi-kuang, Director of Military Affairs of Kuangtung, states that Kuangtung cancelled its independence on the 16th inst. and that the said province will hereafter obey the orders of the Central Government, etc. The said Chiang Chun is inspired by the broad view of the modern world and is now energetically working for the unity of the nation. His public spirit and patriotism are indeed worthy of our admiration and praise. The said Chiang Chun shall now proceed to devote his attention to the future reorganisation of his province in an effective manner and to secure the maintenance of the situation in the territory under his jurisdiction.

On the same day a mandate was issued accepting the resignation of Mr. Liang Shih-yi of his post of Director General of the Revenue Council. On June 23 the resignation of Mr. Chow Tzu-chi, Minister of Finance, was accepted, and a few days later Dr. Chen Chin-tao was appointed to the post. The attitude of the Premier on the question of the Nanking Provisional Constitution was clearly defined in telegrams which he sent to the provinces and to the members of the National Assembly who had assembled in Shanghai. These telegrams were as follow:—

### THE TELEGRAM TO THE PROVINCES

"The right man has been found in Huang-pei [the President] who has succeeded to the office of the Great President. The only question of hot dispute among the people of the country, high and low, relates to the Provisional Constitution. The majority of the people advocate the adoption of the old Provisional Constitution of the 1st year. Regarding this the Government holds no prejudiced views. The sole point of controversy is about the method to be adopted for the restoration of the Provisional Constitution. Most people are willing that the same should be done by a declaration or a mandate so that time may be saved. In the opinion of the Government, however, this must not be done. To change the law by mandate is a thing condemned by all legal schools. If the step be taken without due precaution, there will be endless trouble in future. For this reason the Government has been hesitating and unwilling to become a supporter of the course put forward. Some say that the Revised Provisional Constitution of the 3rd year [Constitutional Compact] cannot be considered as a law and that it will not be an offence to cancel it by a mandate. But this is impossible. The [Revised] Provisional Constitution of the 3rd year has been in force for some time and has been repeatedly quoted as the standard for administration. If it be blotted out by one single sentence, all the laws of the nation may similarly be shaken. Not only must we take long and deliberate consideration before taking action in view of the grave consequences which this step will cause in connexion with foreign treaties, but we have also to bear in mind that domestic loans as well as decisions of the judicial courts may be revoked on the same basis, which is of course impossible.

Others say the Provisional Constitution of the 3rd year derives its origin from the Provisional Constitution Conference and the Provisional Constitution Conference had its origin in the Political Council, and since all the members of the Council were appointed by the Government, they could not be considered as a legally constituted representative organ and consequently to revive the Provisional Constitution of the 1st year is tantamount merely to the cancellation of an old mandate. But this is also impossible. The reason why the people are not satisfied with the Provisional Constitution of the 3rd year is because the organ which made this law had its origin in a mandate. How then can we tolerate the idea of reviving the Provisional Constitution of the 1st year? Furthermore, the reason why the Provisional Constitution of the 3rd year has been condemned by the people because it was not made in accordance with process sanctioned by law and was therefore tantamount to an arbitrary order. Yet in spite of it all it was not until many enquiries had been made and many processes had been gone through before the suggestion was made to revise the same. How then can anyone expect the government to restore the law in force before the revision by a mere mandate? A mistake has already been made some time ago. How can we repeat the same mistake this time? I do not see why the people want to follow an example which they know to be wrong. If it is to be held that a law can be restored by a mandate, why then can it not be cancelled by a mandate also? A law then can be restored to-day and then be cancelled to-morrow. What value will there be in law when it has

reached this stage? Again, if A has the right to restore a certain law why cannot B cancel the same for the same reason? And if this can be done to the Provisional Constitution, why cannot it be done to the Permanent Constitution? If so then with every change of President there will be a change of law. What then can the people follow as a stable guide? Still others say that the desire of the people to see again the Provisional Constitution of the 1st year is such that they are unwilling to see a single day go by without it. It would therefore be better to bring it about speedily by the issue of a mandate. They seem to forget that the requirement of a law lies in its being good or bad and not whether it will come into being sooner or later. If the law is good there will be no harm if it be delayed. If it be bad then the sooner it is promulgated the worse its effect will be on the people. The whole nation will rise and censure it. Even if we were to accept the proposition that the people will not condemn such a step as a result of their eagerness to see a settled Government, we have to reckon with the possibility of our future generations rising in rebellion with this as an excuse. In extreme cases our actions may be quoted as a precedent for the purpose of wilfully violating the law. We would then have added one more blot to the everlasting history of our country. This is certainly not what the Government is willing to do. In that the Government has no prejudice respecting the re-adoption of the old Provisional Constitution of the 1st year. What we should consider is how to go about it. It is hoped that none of you gentlemen will spare your advice so that the Government MESSAGE to M. P.'S. may have some thing to go upon.

To Members of the Parliament c/o the Information Bureau of the Members of the Parliament, Avenue Paul Brunat, Shanghai. As there have been considerable controversial views respecting the question of the Provisional Constitution, the Government is not willing to make an arbitrary decision. You, gentlemen, being leading patriots of the country and well informed in law, should be able to find a happy solution. It is hoped that you will carefully consider the question and advise me as to the best method to adopt. With unspeakable expectation.

The arguments put forward by the Premier were hotly criticized by those in favour of the revival of the Provisional Constitution. It is impossible to say what action the provinces would have adopted as, almost immediately after the despatch of these telegrams the Chief Commander of the Yangtsze Fleet, Admiral Li Ting-hsin, wired to Peking declaring "independence" of the Central Government and demanding the immediate revival of the Nanking Provisional Constitution. The day that this news was published in Peking reports came from Kuangtung to the effect that fighting had occurred between the troops of General Lung Chi-kuang and those of General Li Lieh-chun, a revolutionary who attained some prominence during the 1913 rebellion. In view of the novelty of a section of the naval forces of a country declaring "independence" it is as well to put Admiral Li Ting-hsin's telegram to the Cabinet on record. It read as follows:—

"Ever since the attempted restoration of the Imperial regime, the North and the South have been divided into two camps. While the Navy was engaged in making arrangements with the Military Council of the South to support the latter, the news of the death of Yuan Shih-kai and the succession of the present Great President was announced. But reading between the lines of the declaration made by President Li, it is not difficult to see that the President's freedom of action has been greatly restricted by the followers of Yuan Shih-kai. This bears out the fact that President Li is still not free to express his own opinions. Although the great danger of the country has not yet been averted, fresh ones are following fast upon our heels. Under these circumstances, the Navy hereby announces that on and from the 25th inst. it has joined the Army for the Protection of the Country with the object of supporting the President and upholding republicanism. The Navy will not obey the orders of the Ministry of Navy in Peking until the restoration of the Provisional Constitution of the 1st Year of Min Kuo, the re-assembly of Parliament and the formation of a responsible Cabinet."

The effect of this move on the part of the Navy was shown on June 29 when a mandate reviving the Provisional Constitution was issued, couched in the following terms.—

In a Republican country the will of the people is supreme; and the constitution expresses the concentrated will of the people. But the making of the constitution depends solely on the Parliament. The Parliament of the Republic of China, however, has not been re-convened ever since it ceased to meet on the 10th day of the 1st month of the 3rd year—a lapse of two years. Consequently the constitution has not yet been fixed, although the Republic has been in existence for five years; and as the great foundation has not been laid administrative progress has been impossible. In order that the will of the people may be satisfied and the foundation of the country consolidated, the Parliament should be convened and the constitution made without delay. Pending the promulgation of the constitution, the Provisional Constitution promulgated on the 11th of the 3rd month of the 1st year of the Chung Hua Min Kuo shall be observed until the Constitution [Permanent Constitution] shall be passed. As the Presidential Election Law promulgated on the 5th of the 10th month of the 2nd year is a part of the Constitution, the same shall continue to be in force.

Simultaneously mandates were issued summoning Parliament to meet on August 1; cancelling all laws relating to the Li Fa Yuan and the Citizens' Convention; abolishing the Tsan Cheng Yuan (Council of State); abolishing the Censorate, and appointing General Tuan Chi-jui Premier (his former official designation was Secretary of State). The following day a mandate was issued accepting the resignation of the Cabinet and the following new appointments were made.—Tang Shao-yi, Minister of Foreign Affairs, Hsu Shih-ying, Minister of Interior, Chen Chin-tao, Minister of Finance, Chang Yueh-tsen, Minister of Justice, Sun Hung-yi, Minister of Education, Chang Kuo-kan, Minister of Agriculture and Commerce and Wang Ta-hsieh, Minister of Communications. The Premier was to act concurrently as Minister of War and Dr. Chen Chin-tao was to act as Minister of Foreign Affairs pending the arrival of Mr. Tang Shao-yi. From the first some doubt was expressed whether Mr. Tang Shao-yi would accept the portfolio of Foreign Affairs. Mr. Wang Ta-hsieh definitely declined to accept the position of Minister of Communications a few days after his name had been gazetted.

The fighting in Kuangtung between the troops of General Lung Chi-kuang and those of General Li Lieh-chun and General Tsen Chun-hsuan continued, neither side paying the least attention to the commands of the Central Government to cease hostilities. The avowed object of Li Lieh-chun and Tsen Chun-hsuan was to drive Lung Chi-kuang out of Canton. As the Central Government had confirmed Lung in his post of Military Governor it was placed in an extremely awkward position by the independent action of Li and Tsen. A further cause of anxiety was desultory fighting in Hunan and Szechuan.

A series of mandates issued on July 7 showed that the Government was ready to do its utmost to meet the wishes of the south half-way. The provincial system established by the late President was abolished and the Peerage Law, Traitors' Law, Law on the Pardon of Rebels and Impeachment Law met the same fate. General Lu Yung-ting was appointed Military Governor of Kuangtung, while General Lung Chi-kuang was given the post of Director-General of Mining Affairs in Kuangtung and Kuangsi. General Li Lieh-chun was ordered to proceed to Peking to await an appointment, an order, it may be remarked, that he has not yet obeyed. A special deputy was ordered to investigate conditions in Kuangtung.

The members of the National Assembly who had gathered in Shanghai did not at first receive with cordiality the proposal that Parliament should be opened in Peking on August 1. In fact the counter suggestion was made that as Parliament has the right to convene itself, it should reopen in Shanghai. On July 12 certain changes were made in the Cabinet, Sun Hung-yi being appointed Minister of the Interior, Fan Yuan-lien Minister of Education and Hsu Shih-ying Minister of Communications.

The Government for some time disregarded the demand of the south that the leading "monarchists" should be punished. However on July 14 a mandate was issued in the following terms.—

The movement for the change of form of State plunged the whole country into utter confusion and nearly caused it to suffer national extinction. Those who promoted the movement must be held responsible. The arrest is hereby ordered of Yang Tu, Sun Yu-chun, Ku Ao, Liang Shih-yi, Hsia Shou-tien, Chu Chi-chien, Chow Tzu-chi and Hsueh Ta-ko, who are to be handed to the Judiciary carefully and strictly to be tried and punished according to law to the end that a warning may be registered for the guidance of future generations. Others are hereby pardoned in the interest of leniency.

It is interesting to note that no arrests in connection with this mandate have yet been made. A mandate issued simultaneously ordered the Bank of Communications, of which Mr. Liang Shih-yi is Director General, to carry on business as usual.

Early in the year the seceding provinces established a Military Council at Shaoching in Kuangtung to control the anti-monarchist troops and form a provisional Government. In some

quarters it was expected that this body would dissolve as soon as General Li Yuan-hung had effectively assumed office, but no move was made in this direction until July 17. A manifesto was then issued by the Military Council declaring its voluntary dissolution. On July 21 a mandate was issued praising the Southern leaders for their action in dissolving the Council, it being remarked:—"Their righteous reputation and benevolent name, which are as glorious as the radiance of the sun and moon, will last for endless ages to the glory and honour of the country." The "independence" of the Navy was cancelled on July 20.

The situation in Kuangtung continued to cause grave anxiety to the Government. Although General Lu Yung-ting was constantly urged to proceed to Canton without delay to take up the Military Governorship, it was not until August 6 that he announced that he was proceeding to Canton. In the meantime General Li Lieh-chun and General Tsen Chun-hsuan were continuing to attack General Lung Chi-kuang's forces. The situation in Shantung was also causing anxiety. Several thousand men who described themselves as a patriotic army continued to act independently of the Government, and complaints came from several districts that they were looting and illtreating inoffensive villagers. In Shensi also bandits were operating freely.

The Parliament was formally opened in Peking on August 1, President Li Yuan-hung being present. On August 21 the House of Representatives, with practical unanimity, elected General Tuan Chi-jui Premier, the appointment being subsequently confirmed by the Senate. The new Cabinet consisting of General Tuan Chi-jui, concurrently Minister of War; Dr. Chen Chin-tao, Minister of Finance; Mr. Tang Shao-yi, Minister of Foreign Affairs; Mr. Chang Yueh-tsen, Minister of Justice; Mr. Sun Hung-yi, Minister of Interior; Mr. Hsu Shih-ying, Minister of Communications; Mr. Kuo Chung-hsiu, Minister of Agriculture and Commerce; Mr. Fan Yuan-lien, Minister of Education; and Admiral Cheng Pi-kuang, Minister of Navy, was submitted to the House of Representatives for approval on September 1 and successfully passed the ordeal. The Senate gave its endorsement three days later. An endeavour had been made to secure the rejection of Messrs. Hsu Shih-ying and Sun Hung-yi on the ground of alleged nepotism and of Mr. Chang Yueh-tsen, Minister of Justice, on the ground that he was alleged to have been associated with an endeavour to smuggle a large quantity of Yunnan opium into Shanghai. The Parliament, however, as already stated, confirmed all the Ministers in their posts. Having disposed of this matter Parliament proceeded with ordinary business, and throughout September and October was occupied, *inter alia*, with consideration of the draft permanent Constitution. Other matters that engaged its attention were the Japanese loan of $5,000,000 and the demands presented by Japan in connection with the Chengchiatun incident on August 13, which resulted in some Chinese and Japanese soldiers being killed. As these matters have been already fully discussed in the FAR EASTERN REVIEW further reference here is not necessary beyond the statement that negotiations are still pending. The negotiations in connection with the Chengchiatun affair were delayed owing to the uncertainty that existed in regard to Mr. Tang Shao-yi's acceptance of the post of Minister of Foreign Affairs. Mr. Tang arrived at Tientsin on September 17 en route to Peking, but on September 25 he resigned and subsequently returned to Shanghai. There was considerable opposition to Mr. Tang on the part of sections of the military. A conference of military chiefs held at Hsuchowfu under the presidency of General Chang Hsun in the middle of September claimed the right to be consulted in political matters, and it is understood that Mr. Tang's resignation was a protest against military interference with politics.

Towards the end of September the sensational Press in Peking spread rumours of an alleged plot to "remove" the President with the object of establishing a military dictatorship. It was definitely stated that this plot was to be carried out on the occasion of the Republican Anniversary Review which was to be held on October 10. There appears to have been no foundation whatever in these rumours; at any rate the review passed off without incident. On September 29 a mandate had been issued which obliquely censured the military chiefs who had attended the conference at Hsuchowfu. An endeavour was made by the Government to persuade General Chang Hsun to leave Hsuchowfu and take up his post of Military Governor in Anhui, but without success.

In view of the resignation of Mr. Tang Shao-yi of the post of Minister of Foreign Affairs, which was accepted on September 29, Mr. Lu Cheng-hsiang was offered and accepted the position. Unfortunately there was considerable feeling against Mr. Lu Cheng-hsiang in the House of Representatives and when the appointment was submitted to that body for endorsement on October 3 endorsement was refused by 198 votes to 189. The position was then offered to Mr. Wang Ta-hsieh, and his name was submitted to the House of Representatives on October 17. The House refused to appoint him.

During September the position in Canton materially improved and hostilities ceased. There was an improvement also in Shantung and Shensi, but the bandits in Eastern Inner Mongolia continued to give trouble. The local Chinese officials declared that the bandits could have been suppressed without difficulty were it not for the aid extended to the bandits by Japanese, both officially and unofficially.

Reviewing the march of events during the last three or four months it will be seen that some progress has been made towards settling internal conditions. The respective powers of the civil and military authorities, however, remain undefined, and there has not been the cordial co-operation of political parties that was hoped for. The Cabinet is composed of men of different parties, and the differences have not been sunk so as to enable the carrying out of a truly national policy. The financial situation has continued to be desperate. The Government is not in receipt of sufficient revenue to meet its administrative expenses, much less to disband the tens of thousands of superfluous troops. The floating of a reorganization loan sufficiently large to place the finances of the country on a healthy basis has been prevented by the political uncertainty that has continued to prevail. Moreover the precise attitude of Japan towards China remains obscure. On the other hand the participation of a powerful American concern in railway and industrial development in China, to which reference is made elsewhere, is a hopeful indication of confidence in China's ability to overcome the obstacles which beset her path.

## CHINA'S VICE-PRESIDENT

Feng Kuo-chang, one of the most able of the generals who helped to wrest the sovereignty of China from the Ching dynasty, was elected vice-president of the Chinese Republic on October 30 on the third ballot taken by Parliament, although the result was a foregone conclusion when the first ballot was announced. The second choice of the legislators was Lu Yung-ting, the military Governor of Szechuan. General Feng was elected by 520 votes to 201 cast for Lu Yung-ting. The *Peking Gazette* in describing the election, commented on the difference between the scene now and that when Yuan Shih-k'ai was chosen president.

"In 1913 the House of Parliament was surrounded by many cordons of armed soldiery and the gates were blocked by troops to prevent any of the M.P.'s escaping during the proceeding. Looking over the walls surrounding the House, one saw plainly the many troops with fixed bayonets peering into the Parliament Building, for what, every one was free to imagine himself. Yesterday only a handful of soldiers patrolled the streets to direct the traffic. With the exception of Parliamentary guards in full uniform and about half a dozen military police, there was nothing unusual about the policing of the occasion. People, including the M.Ps., moved about freely and the spectators were not subjected to close scrutiny as if they were assassins. The Republic is indeed among us. In perfect harmony with this promising atmosphere was the very orderly conduct of the members of Parliament."

There was little doubt that the public was greatly interested in the election, as was shown by the large number of spectators who crowded the galleries and overflowed. Every available seat was taken and many had to stand in the passage way. The unusually large number of Chinese ladies attracted much attention. Two galleries were completely filled by them—an unprecedented thing. Even more remarkable was the fact that many of the ladies remained until the election was finished, a tedious affair even for the average man, as the meeting lasted from 9 a.m. until well after five in the afternoon.

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## COTTON MANUFACTURING IN CHINA

The day is far distant, if it ever dawns, when China is likely to provide sufficient manufactured cotton goods to meet her own demand. When it is considered that the population is somewhere between 350,000,000 and 400,000,000, that cotton material is used for the national dress; that it has hitherto been found impossible to manufacture the finer counts in China, and that imported goods, owing to the eccentricities of Chinese methods of taxation, enjoy immunity from certain charges levied on the native article, it will be realized that no immediate anxiety need be felt by those interested in the importation of cotton goods. At the same time it is well to bear in mind that China has made a start, and a good start, towards supplying some of her needs, and that there are factors in her favour which must necessarily tend to the development of local manufacturing.

An investigation made last year showed that there were then in the mills in Shanghai, the chief centre of the industry, over 500,000 spindles and about 300 looms. The difficulty of obtaining exact statistics in China is notorious, but it is estimated that the spindles in operation in the country number a million and the looms 4,000. From these figures it will be seen that Shanghai practically monopolizes the weaving industry. The counts manufactured are practically confined to 10s; 12s; 14s; 16s; 18s; and 20s. The claim has been made that an attempt to spin 32s met with success.

The amount of cotton grown in China cannot be accurately determined. All that can be said with certainty is that it is over 750,000 tons per year and under 1,000,000 tons. Formerly the staple was very short, but the introduction of new seed in some places has resulted in an improvement, and some of the Chinese cotton has been described by a competent American investigator as having good lustre, fair strength and staple from ¾" to ⅞". For mechanical looms it has been found generally advisable to use about 25% of American cotton, but in many instances only the local product is utilized. In the present stage of development of the industry the amount of cotton grown in China is ample for requirements, and cultivation can be extended almost indefinitely as the demand increases. The cost of the raw cotton, of course, fluctuates, but the cheaper qualities are usually available at from about 5 to 6 cents per pound.

Apart from the cost of the cotton itself the price of labour gives the manufacturer in China a tremendous handicap. Undoubtedly the efficiency of the Chinese operative cannot be compared with that of the European, but the difference is not so noticeable in this industry as in others. The following table of approximate cost of production will be found of interest:—

| Count of Yarn | Cost of Production cents per lb. |
|---|---|
| 10s | 1.07 |
| 12s | 1.21 |
| 14s | 1.34 |
| 16s | 1.48 |
| 20s | 1.75 |

(Note: the cent, Mexican currency, is approximately of the value of a British farthing.)

The operatives work in two shifts of twelve hours, and the mills close only for twelve hours each Sunday. When working at full capacity the total annual production of the mills is between 200,000,000 and 225,000,000 pounds of yarn and 25,000,000 to 50,000,000 yards of cloth.

Costs other than labour are extremely low. Most of the mills in Shanghai are supplied with power by the Municipal Electrical plant at a very low rate. The vagaries of exchange, which are a factor of consequence in regard to imported goods, in no way disconcert those engaged in local manufacture. It is true that cotton goods manufactured locally have very little protection, the effective duty on yarn and cloth being only about 2½ to 3 per cent, but there is more than a probability that these duties will be largely increased. Such increase cannot take place at once, as China has to obtain the consent of all the Treaty Powers before modifying the tariff, but she has such a reasonable right to expect consideration for her frequently pressed request to be allowed to readjust the Customs schedule,

that it may be expected that the request will be honored as the Chinese Government gives adequate proof that it intends to fulfil the counter-obligations to which it has pledged itself. At present, as mentioned earlier in this article, not only is the amount of tariff protection exceedingly small, but locally manufactured goods are subject to heavier inland taxation than the imported article. On the imported article a single additional payment of half the import duty enables it to be sent to any portion of the interior without payment of likin, while it can be sent from one Treaty Port to another without any payment in addition to the import duty originally paid. The local article on the other hand has to pay likin if sent from one Treaty Port to another, and if it is sent far inland it has likin levied upon it at an unknown number of likin barriers. Thus it will be seen that the local manufacturer, in regard to trade with distant inland localities, is seriously handicapped against the importer. As already stated, however, it is not likely that this anomalous condition of affairs will be allowed to continue much longer. By arrangement, the increase in Customs duties will synchronis with the abolition of likin charges, and when this takes place the local manufacture will receive protection to an appreciable exten

## CHINA'S POSTAL SERVICE

Seven hundred and seventy-three million articles, letters, parcels, newspapers and postcards, were dealt with by the Chinese Postal Service during the fourth year of the Republic, according to the report of the Directorate General of Posts for 1915 which has just been issued from the press. While this huge total is an increase of 76 millions over the previous year, some ten percent, the real magnitude of the growth of the Chinese postal activities can best be seen by a comparison with the figures for the Second Year of Hsuan T'ung, the baby emperor deposed in 1911. During the six years that have intervened, many of them marked with widespread disturbance and insurrection, the total of articles handled by the post office has more than doubled and with this great increase has come about such an increase in efficiency that the failure of a letter to arrive reasonably on time is generally traceable to floods, brigandage or some cause outside the province of the postal officials.

According to the report of the number of newspapers circulated through the mails, some curbing of the press by the Government took place last year in that the total of such articles is still 19 millions behind the banner year of 1913. The report openly states that this was due to the more rigid censorship that undoubtedly drove many "agin-the-government" organs out of existence. Increases of 25 percent in the parcels post and $3,000,000 in money orders made up for the lack of second class matter lost to the post office through this censorship, and bear witness to the increasing confidence of the merchants and people in the mail order business, one of the greatest factors in the growth of postal facilities throughout the world.

To gain an adequate idea of the meaning of this great advance in postal services, one must remember that China is a country only partly developed, lacking railroads and highways, some of the outlying postal routes zigzagging up and down mountain declivities that would seem to defy even goats to cross. Nor is the service without danger. Each year's report carries its story of couriers attacked and robbed, and while the death toll for 1915 was lower, yet several couriers gave their lives in defense of the mails against brigands. In the province of Honan no less than 14 couriers were attacked, although only one was killed, while the Tibetan frontier troubles made the life of the postal couriers most precarious, 28 attacks having taken place. Six couriers were killed. Not even the water services were devoid of danger, for the mail from Szechuen was wrecked seven times in the Yangtze gorges, not a bad record, however, in view of the 730 trips made by the postal boats through these dangerous rapids.

Taken all in all, especially considering the difficulties that have to be met daily and hourly, the Chinese postal service may be congratulated on its success in maintaining its service and in speeding up the delivery of mail not only through the more densely populated sections served by rail and water routes, but in the outlying districts such as those of Kansu where the time of transit from the coast has now been reduced to one month, whereas formerly it took from sixty to ninety days. Given facilities similar to those that obtain in more advanced and better developed countries and it is certain that China's postal department which has done so well under adverse conditions, will in future measure up well with other postal services throughout the world.

## CHINA'S IRON IN THE JAPAN FIRE

Peter the Great is credited with being the farthest seeing sovereign of his day in that he laid down a policy for the Russian people that has compelled them to extend their rule over wide territories until the Russian Empire now stretches from ocean to ocean and includes a domain of resources so vast and undeveloped that one fears the rest of the world will have used up all its wood and coal and iron, before Russia has more than begun to clear the ground for the opening of her treasurehouse of raw materials.

The case is not otherwise with Japan if her recent activity in the acquisition of China's iron mines is given its full value in forecasting events. Only she is confronted by lands already fully occupied by races in competition with whom the Japanese cannot make a living in agriculture or handicrafts. But Japan, perceiving this factor, has planned to push Peter's policy just a notch further and instead of asking for the lands, she is in the position of saying, "Keep your lands, but give me their resources."

That is what it will amount to if the present rate of acquisition of mining, especially iron mining, properties in China is kept up. Japan has developed just far enough to have a broad outlook on the future of her manufactures. She sees that without iron, she will forever be at the mercy of the more fortunate nations over whose once submerged lands nature laid a blanket of hematite and other ores of iron beside which has arisen that most potent force of modern civilization, the blast furnace and the rolling mill.

Japan has seen the writing on the wall, great dazzling letters of molten iron that spell: "Thus far shalt thou go and no further." She has interpreted it aright and perceived that without iron her industries cannot reach their full measure of competition with the foreigner. Without iron, her forty odd millions must be doomed forever to futile handicrafts of whose products the world eventually will tire. Given unlimited supplies of the brown earth which she can turn into steel with her unlimited mines of coal, Japan sees world domination in an industrial sense as her ultimate goal, and one which she believes she can reach through her resources of cheap yet skilled labor, her ability to counterfeit every foreign product—imitation which the Japanese argue and hope may later lead to origination—and her willingness to employ every national resource, her own and China's too, if need be, in the extension of her foreign commerce.

To be sure it is a litttle rough on China to have to hand over the iron mines, but she is doing nothing with them herself, say the Japanese, and as China has neither the capital nor the ability to develop them, it were a shame, the Japanese argue, for them to sit idly by and wait until China shall awake to a realization of the meaning of iron and steel in modern civilization. Even the most hearty well wisher of China cannot fail to give Japan the credit for her foresight and certainly no observer of the events of the last few years in the Orient can fail to contrast the forward march of the Japanese with the seeming apathy of the Chinese in regard to their country's development. Perhaps apathy is too strong a term, since it is rather lack of leaders and an utter absence of that co-operation so necessary for the successful completion of any large enterprise. But the result is the same, and week by week the iron mines of China are passing into the hands of so-called Sino-Japanese companies. In these the participation of the Chinese is purely passive, and the

inclusion of Chinese directors is a mere fiction to comply with the popular cry that China's resources are for the Chinese.

To be sure, the mines are not being handed over without protest from the provinces, but having made their protests, the provincial authorities fold their hands and ask what more can they do. If the Government pays no heed to their outcry, the blame is not with the provinces but with those in Peking. It may comfort the provinces to have passed the responsibility on to some one else, but the eventual result is the same—Japan will rule China with the rod of iron she has forged from China's own mines.

If the Chinese people coulc family and clan, and get down sufficient money in most of the provinces to open the mines anu convert their latent resources into actual wealth. If the Chinese doubt the ability of their own people to mine the iron and convert it into rails and bars and sheets of steel, surely there is enough of this sort of ability in the world and it can be bought for a price. At that almost any price would be cheap compared with the price that China will some day pay unless she turns her hand at once to the conservation of her iron in the only way it can be conserved, by development and use.

# BUILDING ACTIVITIES OF SHANGHAI

(*Continued from the September Issue*)

In the September issue of the FAR EASTERN REVIEW were shown a number of the many new buildings that have been or are being erected to care for the rapid increase in business and residential requirements of this fastest growing city of the Far East. Owing to lack of space, in some cases the descriptions of the buildings there illustrated had to be carried over to the present issue.

### Yangtse Insurance Association Building

Another handsome structure that is being erected on the Bund is the seven-story reinforced concrete building for the Yangtse Insurance Association from Plans of Messrs. Palmer and Turner. This structure which will be faced with granite, occupies a site fifty feet frontage on the Bund with a depth of 117 feet and is situated between the Peninsular and Oriental Steamship office and the Jardine Matheson Hong. The ground floor will be occupied by a bank, while the Yangtse Insurance Association will take the entire first floor for its offices. The second, third and fourth floors will be divided for offices while the two upper stories will be residential quarters, the whole being topped by a roof garden which will be 115 feet above the street level.

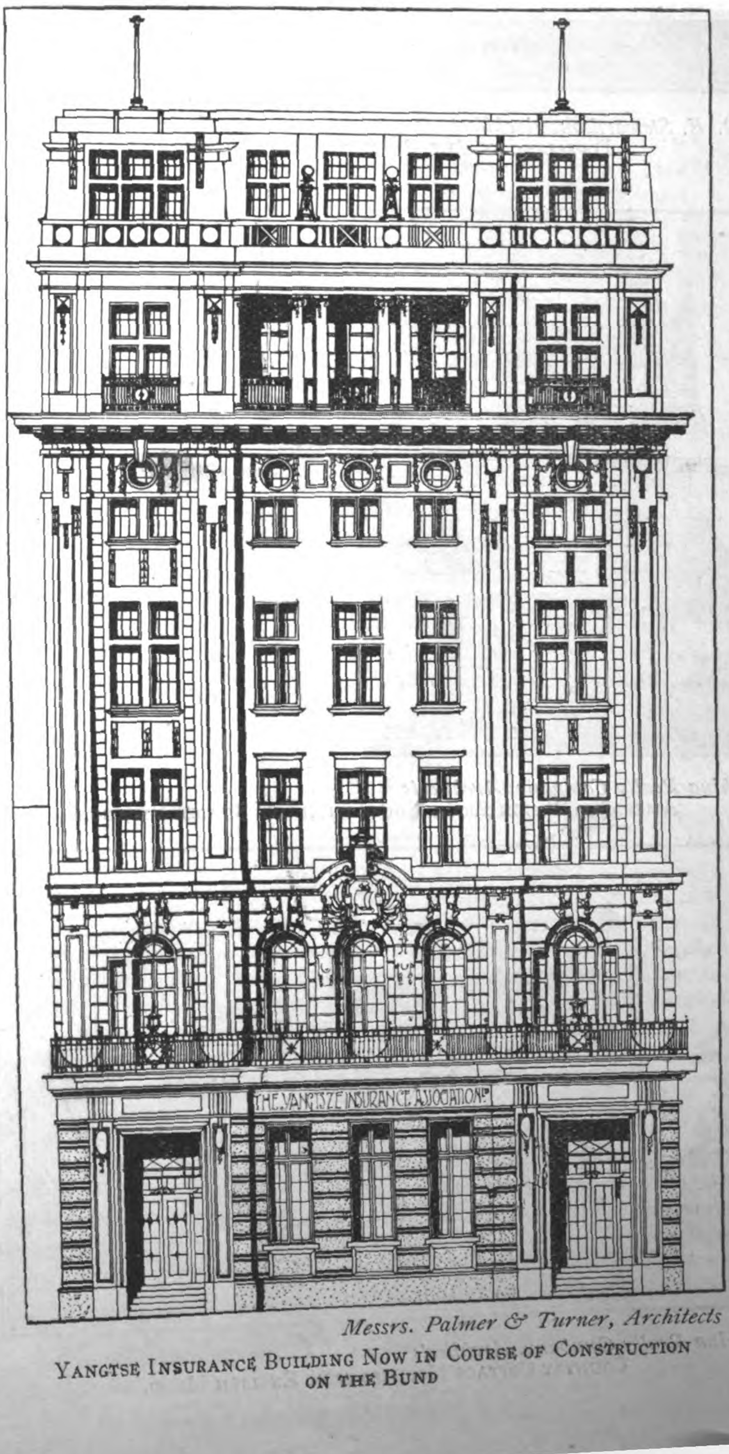
The building will have a handsome marble entrance contrasting with the severer granite facing and every fitting will be chosen with an endeavor to making this building the most modern and best equipped structure of its kind in Shanghai. The board room of the insurance company's quarters will be panelled in teak which material will be used for doors and panellings throughout the building including the dining rooms and halls of the residential quarters of the upper stories. As there will be only one residence on each of the two top floors, the quarters there will be commodious in the extreme. A feature of the fittings of this building will be the use of metal sash throughout and the latest sanitary appliances will be installed in every department of the structure.

### Russian Consulate General

This building, illustrated in the September, issue which is nearing completion is situated on a prominent site near the Garden Bridge opposite the Astor House Hotel and takes up a conspicuous place in the Consular quarter of Shanghai.

The ground available was not extensive and it was not easy to meet the necessary requirements of providing suitable accommodation for the offices as well as residential quarters for the Consul-General and two vice-Consuls and several minor officials. On account of the limited ground it was necessary to make arrangements for placing servants quarters, kitchens, store rooms, etc., in a basement. The building consists of a basement, ground floor, first floor, second floor and a finished attic which is available also for servants quarters, store rooms, etc.

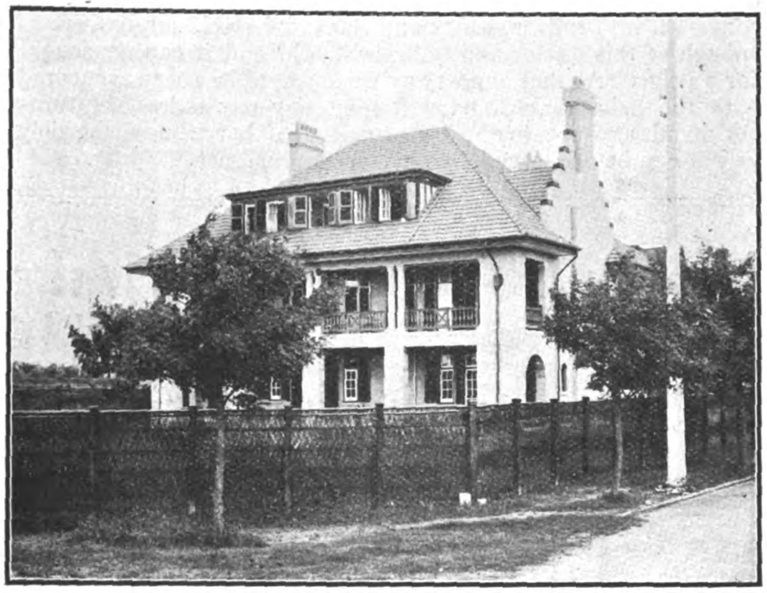
The ground floor contains besides the necessary office quarters a court room and a large assembly hall. The two latter are according to their purpose finished in a dignified and artistic manner with dados and wooden ceilings of teakwood. The first floor contains principally the reception and living rooms of the Consul-General besides the quarters for one vice-Consul. There are two large drawing rooms and two spacious dining rooms which can be combined for festival purposes. Adjoining



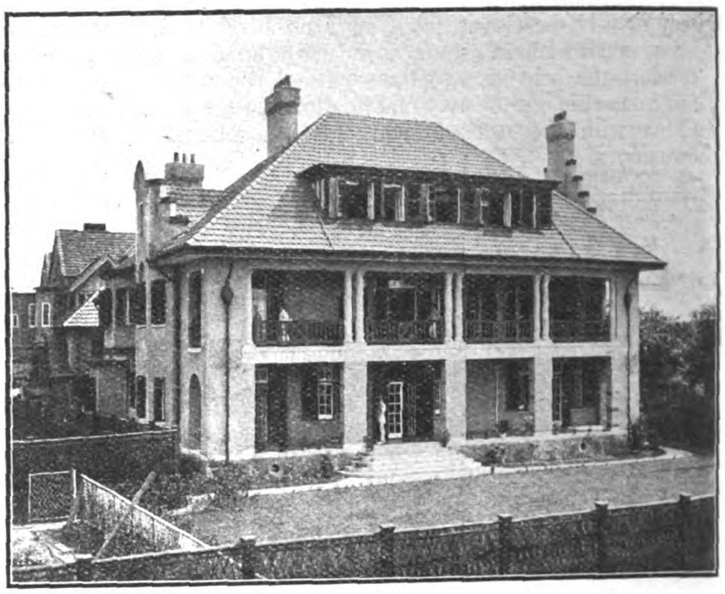
*Messrs. Palmer & Turner, Architects*

YANGTSE INSURANCE BUILDING NOW IN COURSE OF CONSTRUCTION ON THE BUND

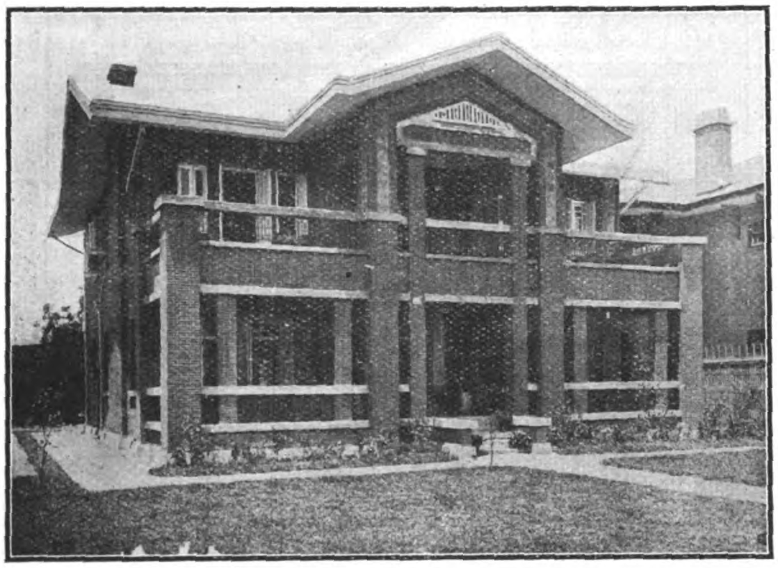
# EXAMPLES OF SHANGHAI'S MODERN RESIDENCES



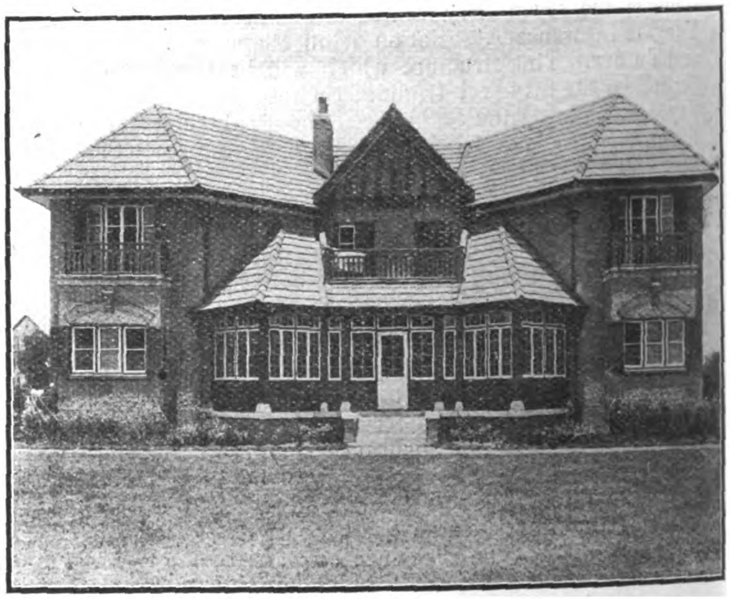
*R. E. Stewardson, Architect*
DWELLING ON RUE POTTIER, FRENCH CONCESSION



*R. E. Stewardson, Architect*
MODERN DWELLING WITH UPPER AND LOWER VERANDAS

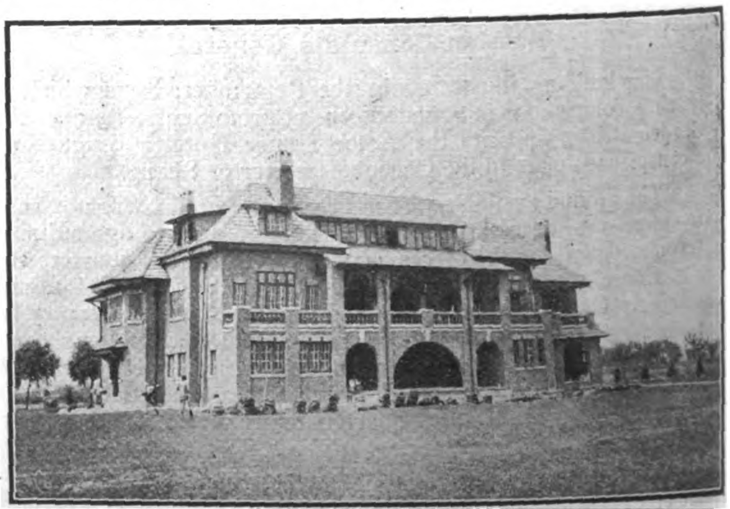


*China Realty Company, Architects*
AMERICAN DESIGN BRICK HOUSE WITH EVE SHADED VERANDAS



*China Realty Company, Architects*
ENGLISH STYLE COTTAGE WITH REMOVABLE VERANDA GLAZING

*China Realty Company, Architects*
COUNTRY COTTAGE MODIFIED FROM ENGLISH MODEL



*China Realty Company, Architects*
STATELY DWELLING SUGGESTING ENGLISH COUNTRYHOUSE

is a study which is connected by a circular stair case with the private office of the Consul-General on the ground floor. The second floor contains the roomy bed and bath rooms for the Consul-General and the living quarters for another Vice-Consul.

The building is constructed in the exterior of concrete blocks chiseled to give them the appearance of real stone; reinforced concrete is used extensively for the inner construction especially in the ceiling of the basement and fireproof staircases. The building is heated by a central hot water system. For decorative purposes the drawing rooms and the assembly hall are provided with marble fire places. For the climatic requirements large verandahs are provided on the south side.

The style of the building is modern and the interior fittings are simple and effort has been made to employ only first class material, as teak and marble.

The execution of the building has been entrusted to the Chinese Contractor Chow Soey Kee. The heating plant, the fitting of the bath rooms, kitchens, pantry, etc., has been executed by the Shanghai Waterworks.

Messrs. Anderson, Meyer & Co., Ltd., have installed the electric light. The plans and the supervision of the building have been in the hands of the Architect Hans E. Lieb.

## North China Insurance Company's Building

This imposing building at South-East corner of the junction of Kiukiang and Szechuen Roads, now in course of construction, when completed, will house The North China Insurance Co., Ltd., on the ground floor. The first, second and third floors contain up-to-date, well lighted offices fitted with all the latest conveniences. The entrance to these floors is on Szechuen Road.

In the construction of this building, great care has been taken to make it as fire-resisting as possible, all staircases, floors, etc., being of re-inforced concrete, the sash and window fittings of steel, and a complete fire service will be installed.

The principal elevations are entirely of granite and a dignified columnar treatment is the key note of the design, eight large columns rising to a height of 44 feet from the pavement, supporting the entablature (including the main cornice) and third floor. The corner is treated very simply, the main entrance to The North China Insurance Co.'s office being the only feature on otherwise plain rusticated walling.

Due regard has been given to the sanitary arrangements, separate lavatories, etc., being provided for foreigners (men and women) and Chinese.

The photograph in the September issue is of a half-inch scale model of the building, and is of interest in showing the abilities of the local Chinese carpenters in this class of work. The architect of this building is Mr. R. E. Stewardson, A.R.I.B.A., 22 Yuen Ming Yuen Road.

## Two Telephone Exchange Buildings

Another noteworthy building by Mr. Stewardson is the Shanghai Mutual Telephone Company's new West Exchange at Bubbling Well and Burkill Roads. It is of re-inforced concrete construction and is designed to admit of adding two additional stories, which, in view of the extraordinary growth of the telephone system, it is contemplated will have to be constructed at no distant date. Owing to the cramped nature of the site, it was found necessary to build right up to the eastern boundary, thus avoiding loss of space on this, the most valuable part of the site. This was made possible only by carrying the eastern wall on a system of cantilevers and beams.

During the construction of this Exchange, the then existing temporary Exchange had to be undisturbed, and was built around. All instruments, switch boards, etc., were lowered into position on completion of the new building, only a few hours interruption, in the early morning, being necessary to complete this delicate operation.

Owing to future additions having to be allowed for, the finished design could not be carried out in this building. When completed, a pilaster treatment of façades will be the result, the existing main cornice becoming a secondary string course, provision for this transformation being allowed for.

Owing to the great expansion in business of The Shanghai Mutual Telephone Company, Ltd., it also has been found necessary to construct at the corner of Haining and Fusan Roads, the North Exchange which will be a three storied building with its main entrance on Fusan Road. In the rear of the yard will be a garage for the company's vehicles, and living quarters for Chinese, lavatories, etc. On the first floor is the test and accumulator rooms, day and night operators' rooms, and superintendent's flat. On the second floor is the exchange and supervisor's retiring rooms.

The construction is of re-inforced concrete throughout, with windows of steel, the glazing of all windows facing adjoining properties being of wired glass, all such windows being fitted with armoured shutters. In this, as at the West Exchange, a simple pilaster treatment of the façades surmounted by main cornice and balustrade is adopted.

## Iron Merchants' Association Building

The important Iron Merchants' Association which owns the fine new premises illustrated in the September issue, was formed in 1912, the original founders being Messrs. Loh Bai-tsze, Ching Poo Yuen, Chan Tsze Chong, and Chan Chun Yuen. In 1915 the premises originally occupied by the Association on Ningpo Road were found to be quite inadequate, and the Association decided to erect suitable modern premises as a Club building, and for this purpose purchased a site on Hongkong Road adjoining the head offices of the Shanghai Waterworks Co. The preparation of the plans was entrusted to Messrs. Denham & Rose, Architects. The building was begun in September, 1915, and it was occupied in the following May.

On the Ground floor are the Club Room, 30 ft. × 27 ft., with two smaller rooms. The first floor consists of the general dining room and two private rooms. There are tiled lavatories and serving rooms on both these floors, and the kitchen and servants' rooms are situated in the rear. The second floor is arranged as a residential flat. The roof is flat and is arranged as a roof garden, approached from the main stairs, and is laid with Pabco Concrete.

The building has a granite base. The upper walls are of brick faced with cement stucco, with artificial stone columns and cornices. The front and back stairs are of fireproof construction. The former is faced with Sicilian marble, supplied by Messrs. Wm. Jacks & Co. The tiles and hardware were supplied by Messrs. Duncan & Co. who also carried out the roofing. The floors throughout are of Kapore hardwood, and the principal rooms are panelled to 8ft high. The wood was supplied by the Import & Export Lumber Coy. The Building Contractor was Mr. Tseng Seng-kee.

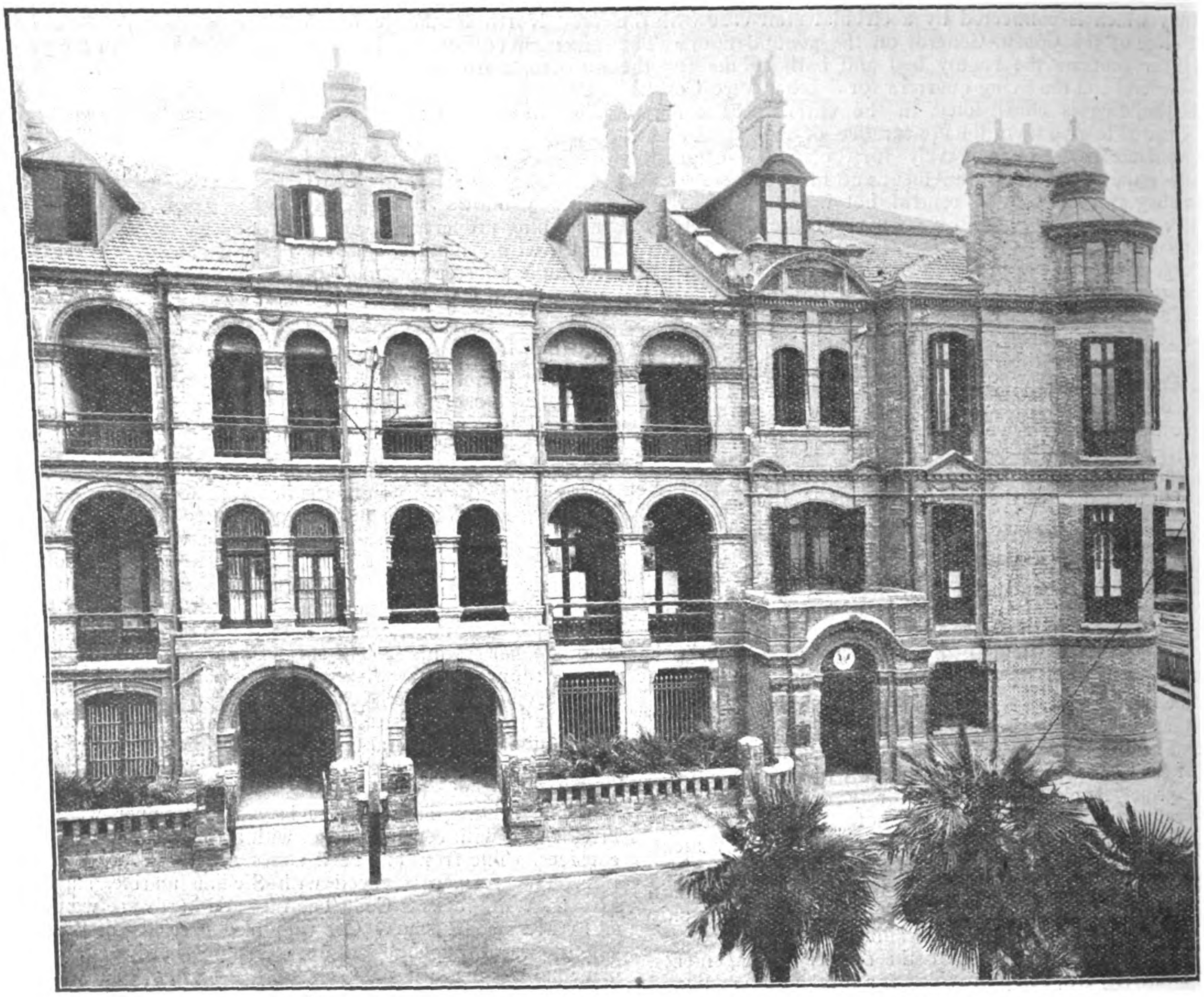
The electric installation was carried out by Messrs. Andersen, Meyer & Co. including "Veluria" ceiling lights, and the sanitary fixtures were provided by the Shanghai Waterworks Co. The Iron Merchants' Club is to be congratulated on its enterprise in possessing an up-to-date Club Building which will doubtless contribute largely to its future prosperity.

## New Shanghai Residences

With the great growth of the city commercially, a great increase in residence facilities has become necessary and on the opposite page are shown a few examples of the many noteworthy new dwelling houses. So great has been the demand for residence sites that many roads which were once dismissed as being too far out for such use now are fringed with handsome structures of brick, concrete and stucco, many of them surrounded by beautiful lawns and gardens where only two years ago the Chinese agriculturist pursued the even tenor of his truck farming.

*China Realty Company, Architects*

First Bungalow Built in Shanghai



PRESENT QUARTERS OF AMERICAN CONSULATE GENERAL, SHANGHAI. POST OFFICE IN GROUND FLOOR OF BUILDING AT LEFT

# UNITED STATES ACQUIRES CONSULAR BUILDING SITE

In the August issue of the FAR EASTERN REVIEW announcement was made of the purchase by the United States Government of the site at the junction of the Whangpoo river and Soochow creek, about an acre of ground, on which it is proposed to erect suitable buildings for the offices of the Consulate General, the American Court for China and the United States Postal Agency. On this page is shown the existing Consular quarters and at the top of the following page is the building now occupied by the Court.

When the purchase was finally made, it was found that a sufficient sum was in hand for necessary repairs and the question at once arose whether it would not be advisable in consideration of the wretched state of the present buildings, to construct a suitable building for consular offices at once rather than to make repairs to structures that had almost outlived their usefulness. The difficulty was that the funds available were insufficient for the erection of anything but a makeshift building at best. Any structure that could be built with the money in hand would hardly be big enough for the consular offices alone, and there was also the Court and postal agency to be taken care of.

The matter was one which aroused considerable discussion among American residents in Shanghai, and finally a meeting was called to consider it and to make recommendations to the Consulate General. It was the sentiment at this meeting, which representatives of all the American organizations attended, that any building that could be constructed with the funds available would be utterly wasted when the time came for the erection of a Consulate General worthy the site and that it would be folly to put money into what would at best be only a temporary expedient.

In the Orient, especially in China where the item of "face" or outward appearance is so vital a factor, it was felt that any building erected on the Consular site must be one worthy the nation whose offices it is to house. The location of the property is such a commanding one, with a frontage of more than 250 feet on the water, and lying immediately opposite the public garden, that it was felt any makeshift building would call into question in the Chinese mind the resources of the nation that would use a site worth half a million taels for a building costing only a tenth of that sum.

United States Court for China with Courtroom on Ground Floor, Judge's Chambers and Office of District Attorney Above

The present buildings whose repair will be undertaken at once, were erected in 1898, and reports of those who are familiar with the methods and materials of their construction state that it is a wonder they have stood so long. In fact, such serious settling of the foundations of some of them took place a few years after they were built that it was feared they would collapse. This was staved off by repairs, but the architects who have been consulted, state that no matter what repairs are now made, the buildings never will be fit for occupancy as offices as they are dingy, dark and damp, and about as far from the ideal of an American office structure as can be imagined. No amount of remodelling will make them other than poorly designed and worse constructed dwellings.

Nevertheless, the whole American community in Shanghai is exceedingly pleased that the consulate at last is in permanent quarters and that the fear of having to seek some other location, perhaps on some back street no longer exists. For several years prior to the rental of the buildings that the Consulate now owns, it was compelled to occupy a tumbledown structure far from the business section. This building, illustrated at the bottom of this page, was so utterly unfitted for any kind of human occupancy that it has remained unrented ever since the American Consulate was removed to the new site, a matter of seven years.

As Shanghai transacts more than half of the import and export trade of China, and as American interests in both branches of commerce are rapidly increasing, its citizens are hoping that Congress may take favorable action regarding an appropriation for a building which will be worthy the dignity of the United States and which will demonstrate to the Oriental world the best ideals of American architecture.

Ramshackle Dwelling which once Housed American Consulate—Has Stood Vacant ever since Consulate Moved, Seven Years Ago

# VIEWS OF NOTABLE BUILDINGS ALONG THE SHANGHAI BUND

RETCH OF THE BUND FROM THE CABLE COMPANIES OFFICES (ON LEFT) TO PALACE HOTEL

TWO WINGS OF THE CUSTOMS BUILDING, FRONTING ON BUND, WITH CLOCK TOWER. AT EXTREME LEFT IS HONGKONG AND SHANGHAI BANKING CORPORATION BUILDING

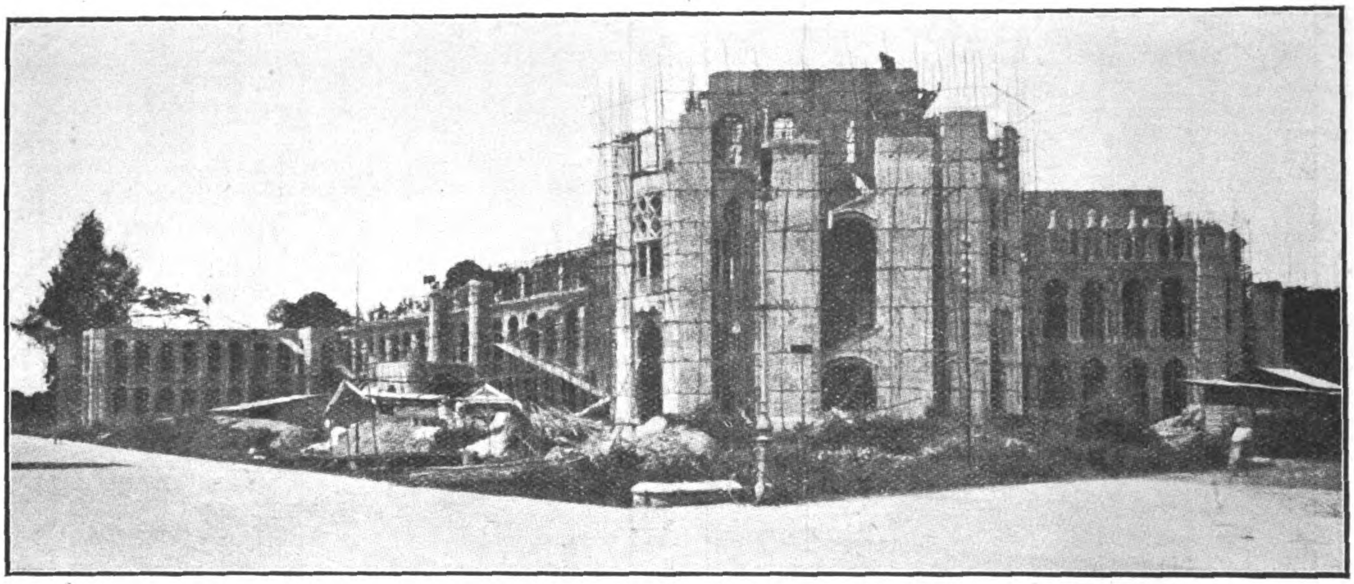
SIR ROBERT HART

THE BUND FROM THE BANK OF TAIWAN TO THE CLUB CONCORDIA (ON RIGHT)

THE JARDINE MATHESON (EWO HONG) BUILDING—ONE OF THE OLDEST IN SHANGHAI AND A TESTIMONY TO THE BUILDERS OF FIFTY YEARS AGO

# FEDERATED MALAY STATES RAILWAYS REPORT FOR THE YEAR 1915

[By G. H. Fox, Acting General Manager and Chief Engineer]



New Railway Administrative Offices in Course of Erection

The chief feature of the year's working of the railway has been the sharp recovery in traffic as a consequence of which the total earnings for the year are only $22,516.58 below 1914. This may be attributed to the following causes: The general feeling of security throughout the country resulting in steady trade; the demand and consequent good prices for tin and rubber and the diversion of a considerable amount of coastwise traffic to the railway; in connection with which I should like to emphasize the fact that the return of traffic between Singapore and the Peninsula across the Johore Straits has so increased, and is increasing at such a rate that in five or six years' time it can safely be predicted that any extension of the present ferry system will be insufficient to deal with the volume of goods required to be transported, and for this reason it will be necessary at an early date to commence the construction of a through line across the Straits.

It is worthy of special remark that the traffic earnings for the month of December, 1915, were the highest on record. While the falling off in receipts is very slight there has been a marked diminution in expenditure on revenue account, the reduction for the year being $629,727.29 or nearly 9 per cent. The gross receipts for the year are $9,051,243.17 and the gross expenditure $6,414,845.24, making net revenue $2,636,397.93, which is equivalent to, approximately, 3 per cent. on capital.

The total mileage of lines open for traffic on 31st December, 1915 (including Johore Leased Line), was 872 miles 26 chains, an increase of 49 miles 64 chains. The length of sidings was increased by 2 miles 77 chains, making a total of 118 miles 19 chains and a grand total of 990 miles 45 chains of railroad in operation. The railway system now comprises:

| | M. | Ch. |
|---|---|---|
| Prai to Johore Boundary ... ... | 351 | 15 |
| Kedah Line—Bukit Mertajam Junction to Alor Star ... ... ... | 56 | 18 |
| Singapore Line .. ... ... ... | 19 | 41 |
| East Coast Line, Gemas to Tembeling | 116 | 71 |
| | 543 | 65 |

The Branch Lines total 207 miles and the Leased Line of the Johore State Railway 120 making a Total of 872 miles and 26 chains.

The total number of stations open on 31st December, 1915, was 196 of which the Federated Malay States Railways had 178 and the Johore State Railway 18. In addition, 16 flag stations were open.

The capital account of the Open Lines amounted to $88,931,589.09 on 31st December, 1915:

| | |
|---|---|
| Federated Malay States Railways ... ... ... ... | $88,315,105.63 |
| Leased Line—Johore State Railway (Federated Malay States expenditure only) ... | 190,355.35 |
| | 88,505,460.98 |
| Automobile service ... ... | 426,128.11 |
| Total ... | $88,931,589.09 |

This total is an increase of $8,295,661.26 over the previous year, of which sum $5,777,706.21 represents the amount transferred from construction account in respect of new lines now open for traffic.

The principal Special Expenditure items are as follows:

| | |
|---|---|
| Additional Locomotives and Rolling Stock ... ... ... ... | $739,423.40 |
| New Station and Hotel, Ipoh ... | 130,083.58 |
| New Carriage Shop at Central Workshops ... ... ... | 212,188.49 |
| New Central Offices, Kuala Lumpur ... ... ... ... | 168,577.53 |
| New Wharf Accommodation, Port Swettenham ... ... | 388,675.28 |
| Purchase of Prai Dock and Wharves ... ... ... | 534,123.00 |

The most notable item is the one relating to the purchase of Prai Docks. These—formerly the property of the Straits Settlement Government—were taken over by the Railway Department as from 1st July, 1914, at a valuation of $1,000,000. Of this sum, $534,123 was paid in 1915.

The average capital cost per mile of line open on 31st December, 1915, was $117,508.66 as compared with $114,043.21 at the end of 1914. These figures, as in past years, are calculated on the total capital expenditure, excluding the Johore Lines, but including the very large amounts expended in connection with such undertakings as docks, ferry services, etc. It is proposed to revise the figures from 1916 onwards.

### Capital Account (Line Under Construction And Surveys)

The capital account of lines under construction and surveys on 31st December, 1915, stood at $10,078,315.68 as compared with $13,140,608.86 at the end of 1914, a decrease of $3,062,293.18.

The gross earnings from all sources (including the motor service) amounted to $9,051,243.17 as compared with $9,073,759.75 in 1914, a decrease of only $22,516.58. There is, however, a reduction in revenue from passengers (including season tickets and excess fares) of $185,821.40, but all other classes of traffic show increases; parcels and luggage $37,357.41, horses, carriages and dogs, $29,343.93, live stock $8,207.52. Miscellaneous earnings and sundry receipts together are up to $85,476.41, mainly due to the inclusion of the earnings of Prai Dock for 12 months as against 6 months in the last year. The increase on this account is $40,191.08. The item reimbursements show a decrease of $6,985.31.

In the comparison of the gross earnings of 1914 and 1915 the earning of the new lines and services opened must be considered. These are responsible for the following amounts:

| | |
|---|---|
| Kedah Line ... ... ... ... | $108,254.93 |
| Ampang, Batu Arang, etc. .. | 43,763.06 |
| Kelantan Line ... ... ... | 37,373.51 |
| Total ... | $189,391.50 |

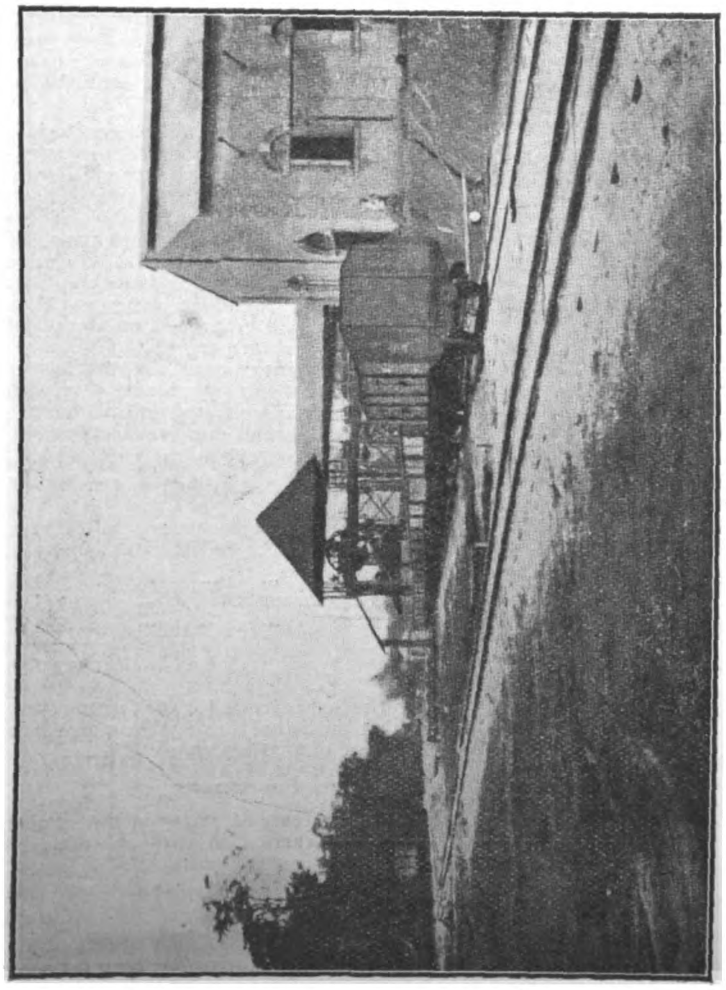
The estimated revenue for 1915 was $8,500,000, so that the actual earnings show an excess over estimate of $551,243.17.

### Passengers

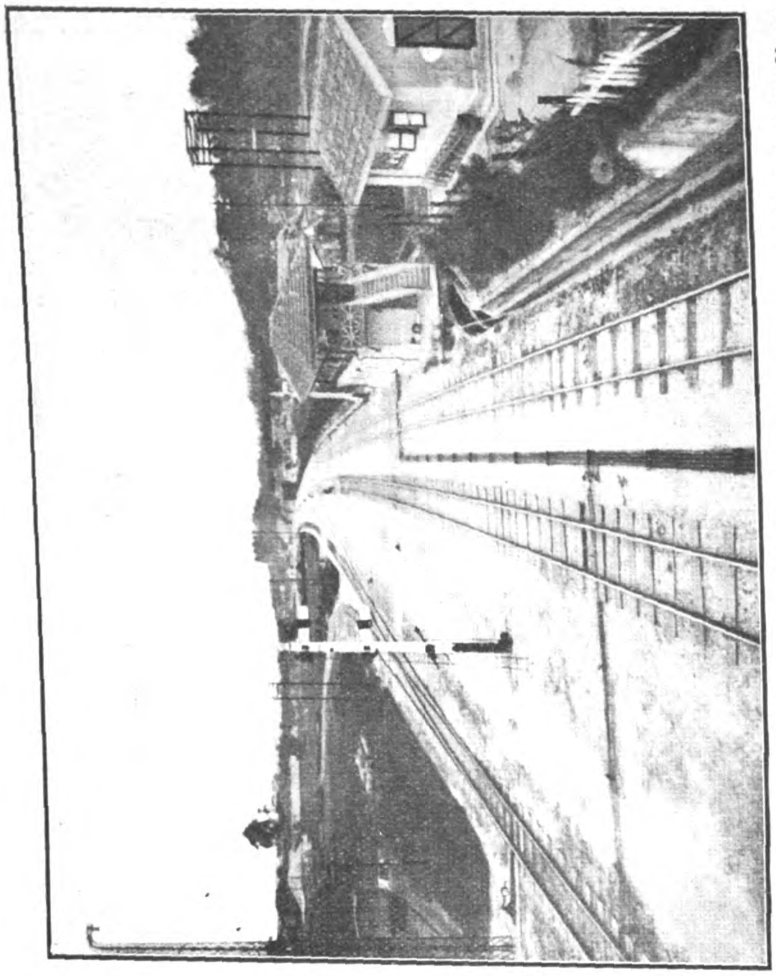
There is a decrease of 75,717 in the number of passengers carried in 1915 as compared with 1914.

The gross tonnage of goods carried in 1915 was 1,100,381 tons as compared with 1,140,253 tons in 1914, a decrease of 39,872 tons.

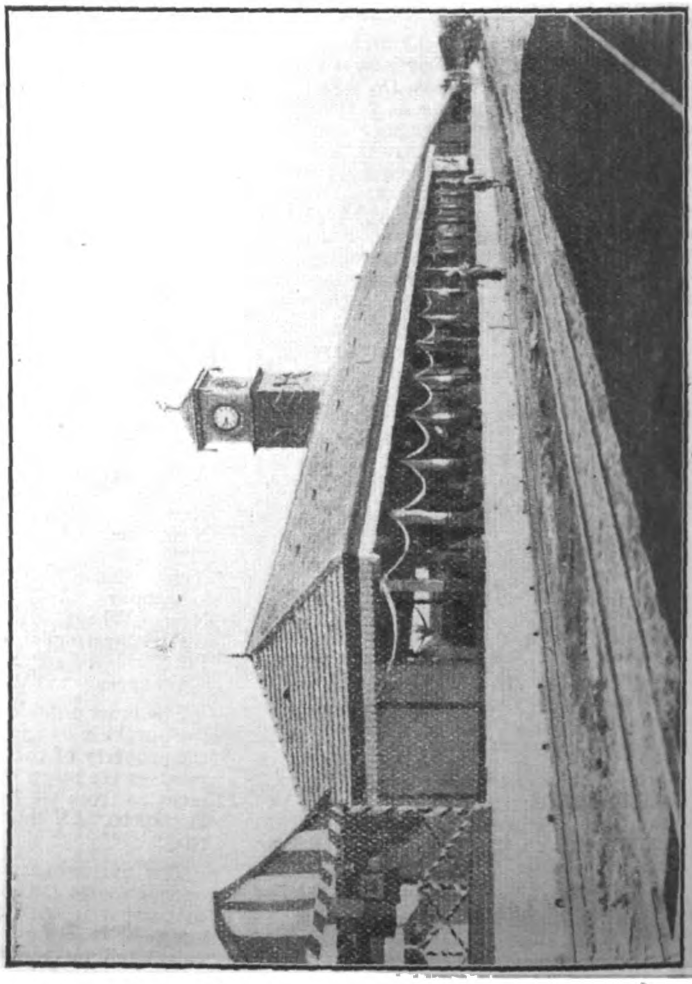
The earnings per mile of line open per week (excluding motor service) were $204.46 as compared with $217.70 in 1914. The gross



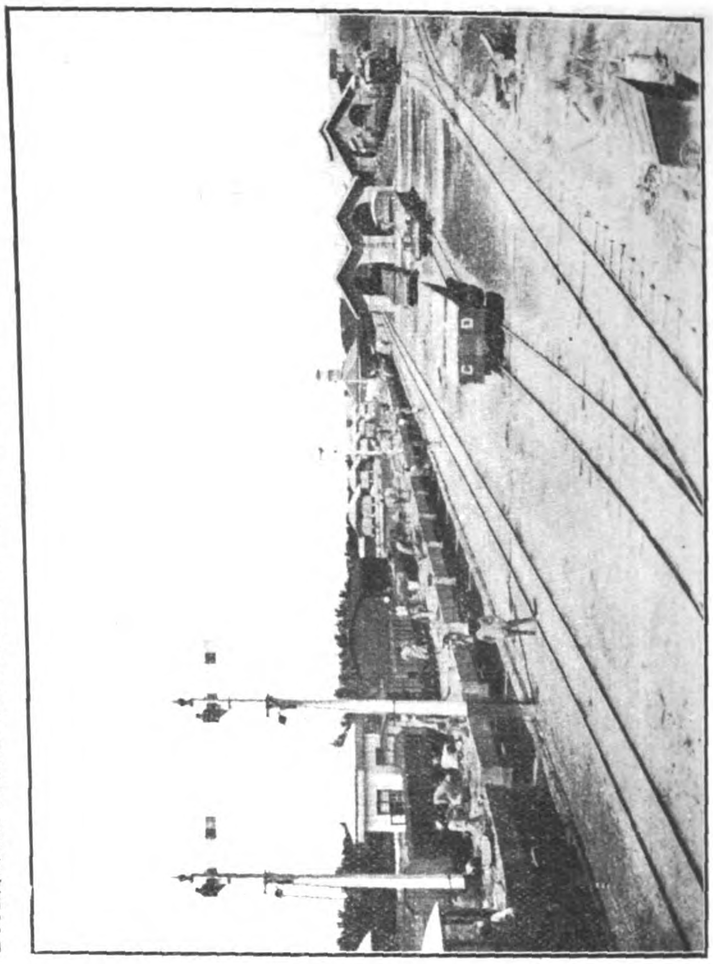
Kuang—Bating Berjuntai Railway. Malayan Collieries, Batu Arang



Double Line, Port Swettenham Branch, Showing North Approach to Marshalling Yard



Kedah Railway—Alor Star Station Decorations for Opening Ceremony, 4th October, 1915



Kedah Railway. Alor Star Station Yard from Signal Cabin

earnings per train mile were $2.81 as compared with $2.66 in 1914, and net earnings per train mile 82 cents as compared with 60 cents.

**Working Expenses**

The gross working expenses for the year, including motor service and special services on revenue account, amounted to $6,414,845.24 as compared with $7,044,572.53 in 1914, a decrease of $629,727.29. Of this decrease, $487,908.71 is in respect of special services. The proportion of working expenses to earnings works out at 70.79 per cent. as compared with 77.50 per cent. in 1914 and 71.36 per cent. in 1913.

The total railway expenditure per train mile is $1.99, which is applicable to the several departments as under:

| | 1915 | 1914 |
|---|---|---|
| General Management ... ... | $ .10 | $ .09 |
| Traffic Department ... ... | .44 | .43 |
| Locomotive Department... ... | .78 | .82 |
| Engineering ,, ... ... | .56 | .61 |
| Stores ,, ... ... | .02 | .01 |
| Telegraph ,, ... ... | .09 | .10 |
| Total ... ... | $1.99 | $2.06 |

The total number of passengers carried during the year was 11,899,029 against 11,974,745 in 1914, a decrease in number of 75,717.

Comparison of coaching goods 1915 and 1914.

| | 1915 | 1914 |
|---|---|---|
| Goods carried, in tons... | 1,100,381 | 1,140,253 |
| Passengers carried ... | 11,899,028 | 11,974,745 |
| Live stock (head) ... | 104,822 | 91,806 |

The cost of maintenance per mile of line open per week of the Federated Malay State Railways was $31.15 as compared with $37.59 in 1914. The expenditure on slips and washaways was $23.751.41. The 872 miles 26 chains of permanent line together with the 118 miles 19 chains of loop line and sidings were maintained in good running order.

No new locomotives were added to the stock during the year but a new steam rail motor designed and built at Central Workshops was put in service on 1st October, 1915, when it started to work a shuttle service between Sultan Street and Ampany. The working has so far been satisfactory considering the difficulties incidental to a new type of engine, etc. This is the first of the nine steam rail motors now under construction.

One small tender engine, "E" class, belonging to Construction Department (originally purchased from Burma Railways, second-hand, during the year 1913, at a cost of $3,896.24) was sold to the Malayan Collieries, Limited, for the sum of $5,000.

One small open line tank engine, "A" class, was transferred to Construction Department in place of the "E" class engine sold to the Malayan Collieries. Two other locomotives of similar type were also transferred to the same department during the year.

The open line stock of locomotives, including the steam rail motor, was 170 on 31st December, 1915, as against 172 on 31st December, 1914. Sixty-two engines of all classes passed through the Central Workshops for heavy and light repairs during the year as compared with 59 during 1914. Of these 62, 60 were paid for by revenue and two by construction votes. The cost per engine against revenue was $5,015.45 as against $6,921.46 in 1914, and the cost per engine mile was 6.87 cents in 1915 against 6.54 cents in 1914. The total engine mileage including the maintenance ballast for the year 1915 was 4,377,944 compared with 4,653,895 in 1914, a decrease of 275,951 miles.

The average daily miles per engine taken on the 170 locomotives was 70.86 compared with 74.12 for 172 engines in 1914. The average daily mileage per engine actually at work was 102.70 against 104.76 in 1914.

The consumption of engine fuel was equivalent to 96,471 tons 11 cwts. 1 qr. 21 lbs. of coal. Bakau firewood being included at ratio of 2½ to 1 and the cost per engine miles was 18.12 cents as against 20.18 cents in 1914, the figures per train mile being 24.80 and 21.77 cents, respectively.

# THE RAILWAYS OF CHOSEN (KOREA)

[ANNUAL REPORT FOR FISCAL YEAR ENDING MARCH, 1915]

The average working mileage of the Chosen Railways for the year 1914-15 in passenger traffic was 985.1, and that in goods traffic 986.2, showing increases of 75.1 in each over the preceding year. The train mileage totalled 3,461,716 miles, the number of passengers carried 4,768,251, and the tonnage of freight hauled 1,386,614 tons, showing decreases of 108,650 miles in train mileage, 227,190 in passengers, and 2,301 tons in freight, compared with the figures for the preceding year. The aggregate passenger and freight mileages were 166,791,661 and 139,797,759 respectively, being a decrease of 6,951,827 in the former and an increase of 16,370,086 in the latter when compared with the figures for the preceding year. The traffic receipts for the year were *Yen* 3,660,814 from passengers and *Yen* 2,756,666 from freight, making a total of *Yen* 6,417,480 and showing an increase of *Yen* 67,632.

The national mourning into which we were plunged in the beginning of the fiscal year caused the people in general to refrain from making pleasure trips, and the traffic in summer, too, was rendered dull in consequence of the war in Europe and of floods. In goods traffic, though, we suffered to a certain extent from the low financial condition in general. The quantity of freight conveyed over longer distances increased as the result of the opening of the Kei-Gen line. The transportation of coal was brisk in consequence of the war, and transportation of rice and other grains, too, became livelier after the end of 1914. The increase in goods of large consignment mentioned above was really responsible for the prosperous condition of the goods traffic during the year.

**New Traffic Arrangements**

The principal traffic arrangements made during the year were as follows. In consequence of the revision in the time-tables of the Chinese Eastern Railway ours were also revised in May. In October, joint transportation of passengers and goods was opened with the Kyodo Kisen Kaisha (Union S.S. Co.) of Awa province, Japan, and joint transportation of passengers and luggage was added to that of goods with the Chosen Yusen Kaisha (Chosen M. S. S. Co.). In November, the Japan-Manchuria-Russia through passenger traffic was put into force, and in the same month joint transportation of passengers and goods was started between Zenshu station on the Zenhoku Light Rly. and Kunsan Station on our line. In January, 1915, the Peking-Kalgan, Peking-Hankow, Tientsin-Pukow, and Shanghai-Nanking Lines were added to the Peking-Mukden Line in the Japan-China passenger through traffic. In March, through the agency of the South Manchuria Ry. Co., goods traffic was opened between Kirin Station on the Kirin-Changchun Line and the principal stations on our lines.

The Chosen Hotel in Hasegawacho, Keijyo, was completed and opened in October. This fire proof building of five storys has sixty-nine rooms and can accommodate 120 guests. The dining room can seat three hundred guests. The returns for our business at the above hotel and at the Fusan and Shingishu Station Hotels show that 1,237 guests stopped at the hotels, making 2,596 in the aggregate, 10,923 meals were served, 4,744 guests attended banquets, and the hotel receipts were Yen 40,750, this rather dull showing having been brought about by the decrease in the number of through passengers from Europe. The results from the dining-cars and the refreshment-room at Nandaimon Station were not very encouraging, either, on account of a decrease in the travelling public in general. The results for the year were 34,223 guests and yen 34,608 in receipts, being decreases of 9,056 in number of guests and Yen 6,695 in receipts.

In the warehouse business, we can point to an increase in the number of warehouses by three, one each at Mokuho and other two places, making sixteen in all. The tonnage of goods deposited was 18,303 and of goods delivered 15,048 tons, showing increases of 8,664 in the former and 7,166 in the latter over the preceding year. The receipts from the business were yen 7,268, being an increase of Yen 2,489 over the year previous. The principal goods deposited were grain, amounting to about 90 per cent. of the total, straw ropes, straw bags, straw mats, linen, cotton fabrics, and dried fish. As th financial condition in general was rather bad many persons availed themselves of our warehouses, resulting in the fine expansion we enjoyed in this department.

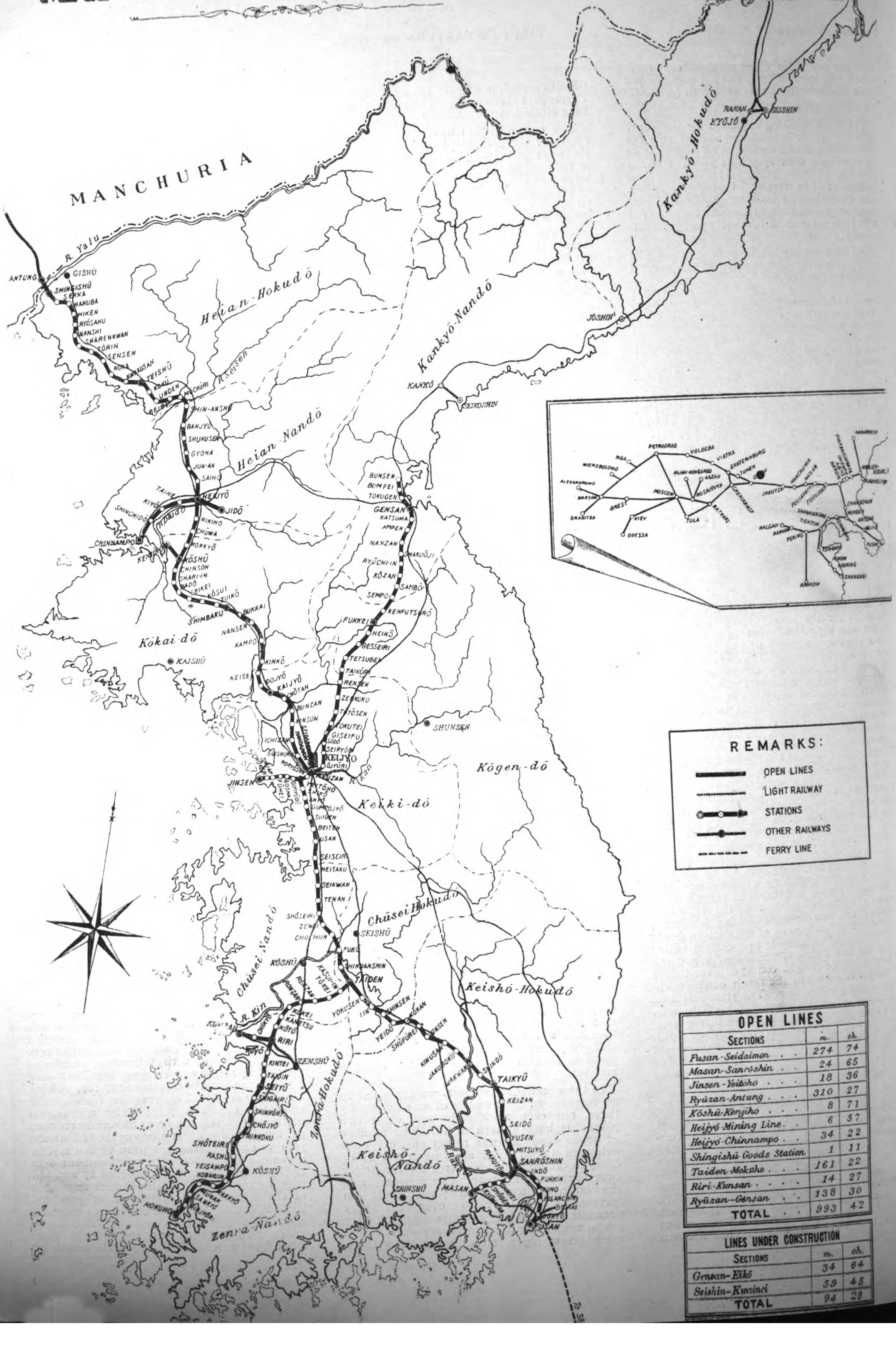
**Locomotive Mileage**

In the results of locomotive working, the mileage during the year totalled 4,372,637 miles and the converted carriage and wagon mileage 29,109,701; coal consumed amounted to 202,986,758 kin for running, and 23,431,518 kin for lighting and other purposes, making 226,418,276 kin in all; oil consumed reached 91,082 sho for locomotive working, and 77,193 sho for carriages, wagons, etc., or 168,275 sho in all. Compared with the figures for the preceding year, these show increases of 212,518 in locomotive mileage, 1,045,392 in carriage and wagon mileage, 22,653,561 kin in coal consumed, and a decrease of 6,160 sho in oil. Rolling stock returns show 165 locomotives, 335 carriages, and 1,602 wagons, being increases of 11 locomotives, 67 carriages, and 64 wagons. The principal items of equipment and improvement made in rolling stock, etc., were the building of 37 carriages and 64 wagons, and the erection of 11 locomotives, 4 carriages, and 136 spans of bridge girders, besides improvements made to 16 locomotives, 36 carriages, and 185 wagons.

The aggregate length of electrical communication lines at the end of the year was 2,791 ri; telegraphic apparatus installed numbered 149, telephonic 964, and blocks 279. Stations dealing with telegrams numbered 150; the railway messages handled were 4,180,090 and public messages 228,107, making 4,408,197 in all. The revenue from public messages was Yen 7,294. The withdrawal of the generating station at Shingishu reduced the number of such stations at the end of the year to one; the engines were of 800 h.p. in all and their generating capacity amounted to 448 kw. Electric lamps numbered 27 arc and 7,437 incandescent, 4 of the former and 3,416 of the latter being supplied under contract. Besides, those installed in carriages numbered 2,627.

Traffic mileage at the end of the year totalled 994 miles and the aggregate length of

# MAP OF CHOSEN RAILWAYS




| OPEN LINES | | |
|---|---|---|
| Sections | m. | ch. |
| Fusan-Seidaimon . . | 274 | 74 |
| Masan-Sanrōshin . . | 24 | 65 |
| Jinsen-Yeitōho . . . | 18 | 36 |
| Ryūzan-Antung . . . | 310 | 27 |
| Kōshū-Kenjiho . . . | 8 | 71 |
| Heijyō-Mining Line . . | 6 | 57 |
| Heijyō-Chinnampo . . | 34 | 22 |
| Shingishū Goods Station | 1 | 11 |
| Taiden-Mokuho . . . | 161 | 22 |
| Riri-Kunsan . . . . | 14 | 27 |
| Ryūzan-Gensan . . | 138 | 30 |
| TOTAL . . | 993 | 42 |

| LINES UNDER CONSTRUCTION | | |
|---|---|---|
| Sections | m. | ch. |
| Gensan-Eikō | 34 | 64 |
| Seishin-Kwainei | 59 | 45 |
| TOTAL | 94 | 29 |

track 1,232 m. 54 ch., being increases of 23.8 m. in the former and 40 m. 41 ch. in the latter over the preceding year. The number of stations was 158, being greater by 4 than in the previous year.

### Repairs to Tunnel

Maintenance works included repairs to Chuwa tunnel, repainting of bridges and culverts on Fuko-Yeitoho section, as well as of bridges over the Rakutoko and Ryushinko, besides repairs to tracks, renewal of sleepers, gravelling, and works essential to the maintenance of stations and other buildings. Additional works were, construction of refuge lines at Wakan, Kinusan, and Kinsen Stations, alteration of tracks in Soryo and Fusanchin station yards, earthworks necessitated by alteration of tracks in Jido station-yard on the Heyjio Mining line, improvement of track on the Kenjiho branch, and other arrangements concerning tracks, station buildings, and telegraphic lines. As regards extraordinary repairs, we may say that protracted rains came on after June, and the rivers throughout the country overflowed and damaged all our lines; especially near Kaijyo on the Kei-Gi line and Gesseiri on the Kei-Gen line, and we had to suspend traffic for a time. We started the repair works at once and all were finished without unnecessary delay.

For the improvement of the Kei-Fu line which was planned to be completed in five years from the fiscal year of 1914, we took up the reconstruction of the Taiden-Fuko and Jakuboku-Kinsen sections as this was most urgently required. At the same time electric lines, official houses, and other buildings were newly erected, removed or rebuilt.

Regarding construction works the following may be mentioned; on the Kei-Gen line the construction of 7.6 miles of Kenfutsuro-Sempo section, which had been in the course of construction since the previous year, was completed in June, and that of 16.2 miles of Sempo-Kozan section was finished in August; thus the whole line, 138.4 miles in length, was opened to traffic. The remaining work in station arrangements, earthworks, and buildings is in progress. As for Gensan-Yeiko section (34.8 m.) and Seishin-Kainei section (59.6 m.) which form the first part of our projected Kankyo line, we started work on the Gensan-Yeiko section, but no conspicuous progress was made as the work was hindered by frost. The Chosen Hotel, Keijyo, which was still in the course of construction, and all of its outhouses were completed in September.

### Traffic Receipts

The traffic receipts for the year amounted to Yen 7,734,260 and expenditure to Yen 6,501,931, leaving a balance of Yen 1,232,329 as profit. Compared with the figures for the preceding year, the decrease in receipts was Yen 117,925, the increase in expenditure Yen 217,973; so the decrease in profit was Yen 335,898.

In the railway store account, the total profit amounted to Yen 5,736,484 and the total loss to Yen 5,736,427, leaving a balance of Yen 57.

The value of contracts in the purchase of railway stores amounted to Yen 4,663,838, being an increase of Yen 37,124 compared with the previous year.

The capital invested in the railways since the commencement of their construction up to the end of the previous year totalled Yen 123,382,034. Adding to this the sum of Yen 7,634,117 invested during the year, the total capital at the end of the year under review reaches Yen 131,016,151.

### Light Railways

Light railways and tramways in Chosen in operation at the end of the year were six, namely, one electric tramway of 16.2 miles in Keijyo, a light railway of 5.8 miles between Fusanchin and Torai, a light railway of 15.5 miles between Riri and Zenshu, a manual tramway of 1.2 miles in Heijyo, a manual tramway of 0.7 miles between Wakan Station and the wharf on the Rakuto, and a manual tramway of 5.1 miles between Kankyo and Ranan, amounting in all to 44.5 miles. The aggregate capital of these light railways and tramways totalled Yen 2,799,474. The mileage still to be opened amounts to 173.2 miles, namely, 7 miles in Fusan, 115.2 miles between Torai and Keishu, Taikyu and Keishu, Keishu and Hoko, and Urusan and Choseiho, 13.4 miles between Shinshu and Senshin, 8.4 miles between Koshu and Shoteiri, 8.2 miles between Kintei and the wharf on the Toshin, 8.9 miles between Kanko and Seikoshin, and 12.1 miles between Seishin and Ranan.

### Results of Traffic

The average working mileage was 985.1 miles in passenger traffic and 986.2 in that of goods. Train mileage amounted to 3,461,716 miles, that of carriages to 11,182,059 miles, and that of wagons to 17,549,427 miles. The number of passengers carried was 4,768,251, while the passenger mileage reached 166,791,661 miles. The tonnage of goods amounted to 1,386,614 tons, and the ton mileage to 139,797,759 miles. Receipts from passengers amounted to Yen 3,660,814 and from goods to Yen 2,756,666, making a total of Yen 6,417,480.

The above show increases of 75.1 miles both in passenger and goods traffic in consequence of the completion of the Kei-Gen and Konan lines, and decreases of 3 per cent. in train mileage, 0.4 per cent. in carriage mileage, 7.3 per cent. in wagon mileage, 4.5 per cent. in the number of passengers, 4 per cent. in passenger mileage and 0.2 per cent. in tonnage of goods, with an increase of 13.3 per cent in ton mileage. In traffic receipts, there was a decrease of 4.1 per cent. from passengers and an increase of 8.8 per cent. from goods, being an increase of 1.1 per cent. in the total.

The results from passenger traffic during the year showed an average of 464 passengers and Yen 10.18 per day per mile, being a decrease of 59 in passengers and of Yen 1.31 in receipts, as compared with the figures for the preceding year.

As regards the goods traffic, the quantity of through goods increased consequent upon the opening of the Kei-Gen line; the transportation of coal and cattle, too, was brisk, while the transit trade of rice and beans, and the transportation of ore, cotton fabrics, and cotton yarns destined for Manchuria increased greatly toward the end of January. All this conduced to bring about our fine results notwithstanding the monetary depression that prevailed.

Of the 207,000 tons of goods transported the points of destination were Fusan (66,000 tons), Keijyo and Kunsan (35,000 tons), Jinsen (20,000 tons) and Mokuho (6,000 tons). Goods despatched, too, reached 55,000 tons in all, 40 per cent. of the total being for Japan. The transportation of coal was greater, especially after September, on account of the war, and reached 232,000 tons, showing an increase of 63,000 tons over the previous year, 30 per cent. of the coal transported coming from Fushun. As regards wood there was a great demand due to activity in building, and about 70,000 tons was transported, the greater part of it coming from Shingishu.

### Salt Traffic Increased

As for salt, the total quantity transported reached 42,000 tons in consequence of the growth in the refining business carried on by the Government and private firms, resulting in greater production. Principal points from which salt was transported were Jinsen (18,000 tons), Chinnampo (6,000 tons) and Shuan and Fusan (4,000 tons each). The transportation of Mintai-fish increased to 13,000 tons in consequence of the opening of the Kei-Gen line. One half of the above quantity came from Gensan; that from Fusan and Soryo amounting to only 5,000 tons each, showing a decrease of 4,000 tons as compared with the preceding year, due to change in route consequent on the opening of the Kei-Gen line.

In the transportation of ores we saw an increase of 18,000 tons as compared with the previous year, on account of more than 10,000 tons being depatched from Chinnampo to Honkeiko (South Manchuria).

The transportation of straw ropes, straw bags, and straw mats reached 13,000 tons, owing to the brisker movement of rice and beans. The quantity of cotton fabrics and cotton yarns destined for Manchuria was very great, being 15,000 tons of the former and 7,000 tons of the latter and showing increases of 53 per cent. and 117 per cent. respectively over the previous year. The transportation of cattle and hides, up to this time quite insignificant, grew conspicuously owing to the war and reached 1,000 tons for the former and 5,000 tons for the latter. But that of graphite was but 5,000 tons, being only 46 per cent. of that for the previous year; fire-wood and charcoal, on account of the weather, and millet, owing to a decrease in importation, made a poor show in the quantity transported.

In the conditions above mentioned, the average tonnage per day per mile was 388 tons and receipts Yen 7.66, being an increase of 17 in tonnage and 4 sen in receipts, compared with the preceding year. The decrease of 8 mo in average receipts per ton per mile, showing 1.83 sen, and increases of 11.9 miles in average mileage per ton and of 14 sen in receipts per ton, showing 100.8 m. in the former and Yen 1.84 in the latter, are due to the greater quantity of goods transported over long distances.

### Dining-Cars and Refreshment-Rooms

The guests in dining-cars during the year numbered 23,283, and the receipts, Yen 25,906. These figures show decreases of 30 per cent. in the former and 18 per cent. in the latter compared with the preceding year. The refreshment-room at Nandaimon Station had 10,940 guests and the receipts from them reached Yen 8,702, showing an increase of 9.1 per cent. in the former and a decrease of 10.4 per cent. in the latter when compared with the previous year. The reason for these disappointing results was the decrease witnessed in general passengers.

The warehouses at the end of the year numbered 16; the goods deposited reached 18,303 tons and those delivered 15,048 tons, showing an average of 1,966 tons handled per day. The total receipts amounted to Yen 7,268. Of the goods deposited 90 per cent. was grain, the rest being made up of straw ropes, straw bags, straw mats, linen, cotton fabrics, dried fish, etc. When compared with the figures for the preceding year, these show increases of 3 warehouses (Mokuho, Riri, and Gensan), 89.9 per cent. in goods deposited, 90.9 per cent. in goods delivered, and 52.1 per cent. in receipts. The financial depression prevailing in general throughout the year induced traders to take advantage of the warehouses in order to facilitate the monetary circulation, and it is to that we owe the fine results attained in this line. The dock warrants we issued were for 57.5 per cent of all the items of goods deposited, and the total sum of money lent on the goods by bankers was 58 per cent. of the total value of the goods deposited.

### Results of Locomotive Working

The mileage of locomotives during the year was 4,372,637.2 miles and the converted mileage of cars 29,109,701.2 miles, while the coal consumed for running amounted to 202,986,758 kin and oil (for cylinders, machines, and air pumps) to 91,082 sho. These show increase of 5.1 per cent. in locomotive mileage, 3.7 per cent. in car mileage, 9.3 per cent. in coal and 0.9 per cent. in oil over the previous year.

### Workshops

Workshops at the end of the year numbered three, namely, Soryo, Ryuzan, and Peijyo;

the number of artisans and workmen at the end of the year was 1,574 and their aggregate working days reached 511,207, while the total amount of wages was Yen 307,143. The average number of artisans and workmen employed per day was 1,563, their wages amounting to Yen 1.156.40, the average wage per day per man being Yen 0.74.

Principal items of building and repair were the building of six 1st and 2nd class composite carriages, seven 2nd and 3rd class composite carriages, eighteen 3rd class carriages, four baggage and mail composite brake vans, two baggage and brake vans, forty covered wagons, and twenty-four open wagons, and the repairing of 154 locomotives (including 10 of a trifling nature and 2 belonging to a private company), 620 carriages (including 4 belonging to a private company) and 1,220 wagons. Erection work comprised 11 locomotives newly bought, two 1st class and dining-room composite carriages, two 1st and 2nd class composite carriages, and 136 spans of bridge girders.

### Workshops Improvements

At Sory Workshops, besides the completion of a polishing machine for finishing metallic articles for carriages, the wooden part of a 25 tons goliath crane was renewed as it had decayed. The steam engine in use for motors was to be removed and the erection of a marine boiler in place of the old one is now underway. One still for batteries for electric lights in carriages is also being set up. The motive power in use at the end of the year was supplied by four sets of steam-engines (170 h.p.).

At Ryuzan Workshops the fixing up of a jib crane was finished, and the building of new blacksmith and boiler shops, as well as the enlarging of the erecting and lathe shops is in progress. The motive power at the end of the year was supplied by 2 sets of dynamos of 224. kw. (one kept for reserve), one set of dynamos of 1 kw., 14 sets of motors (574 h. p. in all) and 2 sets of air compressors of 106 h. p. (one kept for emergency).

At Heijyo Branch Workshops one screw cutting machine and one fan motor were newly set up; the motive power at the end of the year was supplied by a steam-engine of 150 h. p.

### Electrical Arrangement

The following are the principal items to be mentioned concerning the electrical arrangements and their results during the year.

*Power station:* the power station at Shingishu Station was removed on July 31, 1914, so the one in Ryuzan Workshops was the only one we had at the end of the year. The number of steam engines was 2 (800 in total h. p.) and of generators 2 (448 kw. in capacity) 1 steam engine and 1 generator being kept in reserve. These show decreases of 1 in power stations, 1 in steam engines (30 in h.p.), and 1 in generators (18 kw.), compared with the preceding year.

*Motors:* The motors at Ryuzan Workshops numbered 14 and their total h.p. amounted to 574, being less by 1 in the former and 75 in the latter than in the previous year.

### Electric Lighting Increases

*Electric Lights:* The electric lights supplied by the Railway Bureau's own power station numbered 4,044, representing 3,435 when converted into 16 c.p., and those under contract 3,420, representing 3,882 when converted into 16 c.p.; these show increases of 17.9 per cent. in the former and 20.7 per cent. in the latter over the preceding year.

172 carriages were equipped with 2,627 electric lights and 219 motor fans, their motors being 85 and batteries 2,040 in number respectively. These when compared with the preceding year show increases of 32.3 per cent. in the number of carriages, 46.4 per cent. in that of lights, 68.5 per cent. in that of fans, and 44.1 per cent. each in motors and batteries. The expenditure for the above arrangements was Yen 10,456, being an average of Yen 60.791 per carriage.

*Results of Generators:* The total amount of current generated during the year reached 1,059,679 kw. h. (2,903 kw. h. per day), while the total expenditure was Yen 27,473.88 and the coal consumed 4,470,519 kin, corresponding to 2.6 sen in expenditure and 4.2 kin of coal consumed per kw. h. The expenditure consisted of 63 per cent for fuel, 5 per cent. for oil and grease, 13 per cent. for repairs and 19 per cent. for other items. The average cost of coal per 10,000 kin was Yen 38.47. These figures show decreases of 10.5 per cent. in current generated, 14.3 per cent. in coal consumed, 6.3 per cent. in expenditure, and 4.5 per cent. in the average amount of coal consumed per kw. h., with increases of 4 per cent. in average expenditure per kw. h. and Yen 5.16 in average cost of coal.

### Construction and Improvements

*Kankyo Line.*—The Kankyo line consists of a trunk line, 373.7 miles, from Gensan in Kankyo-nando to Kainei in Kankyo-hokudo and a branch line, 5.3 miles, from Yujyo to Seishin in Kankyo-hokudo, totalling 379 miles. But our plan at present only takes up the construction of 34.8 miles between Gensan and Yeiko, and of 59.6 miles between Seishin and Kainei. As we are going to construct these as hurriedly as possible, the long bridges on the line will be only temporary ones, and the section from a point 29 m. 30 ch. 3.8 1. to a point 34 m. 28 ch. 43.8 1. from Seishin will be a temporary line. Surveying was taken up in April, 1914; that on the Gensan-Yeiko section was finished in June, and that on Seishin-Zenkyori section in July. The construction work was commenced in October, but we could not make any particular progress in the work as the freezing season set in soon after.

### New Works Finished

*Konan Line.*—As regards the reconstruction work of this line, 20.6 miles between Taiden and Koseki on Taiden-Renzan section, and 6.5 miles between Yeisen and Kobakuin on Kakkyo-Kabakuin section were finished; that of 24.7 miles between R. Ako and Riri on Renzan-Riri section and of 1.3 miles on the approach to Sankyo River Bridge and at 2 other places on Rashu-Mokuho section are now in progress and will be finished next year.

*Kei-Gen Line.*—The different works on Kenfutsuro-Sempo section (7.6 miles), continued from the previous year, were finished in June and traffic on the section was opened. In August those on Sempo-Kozan section (16.2 miles) were finished and the whole line was opened to traffic. But different arrangements at stations as well as earth and building works were still under way and the following is some of the work done during the year: 60 lb. rails on Ryuzan-Giseifu section and in Totosen Station compound were changed to 75 lb. rails. Sidings were added to Fukkei and Seihyoko Stations and more gravel was spread on Kenfutsuro-Sempo and Tetsugen-Kenfutsuro sections. On Ryuzan-Zenkoku section, Seihyoko Station was newly built and Ojyuri Station was enlarged. The formation level of parts 5 m., 14 m. 50 ch., 17 m., and 18 m. 70 ch. from Ryuzan was raised. Flood openings for the R. Seiryu (17 m. from Ryuzan) and seven open and covered culverts were newly built, and repairs made to damaged cuttings.

### New Bridges make Progress

New bridges over the Inri and other rivers, reforming of cuttings, and filling in of broken stone on embankments on Zenkoku-Heiko section, reforming of and filling in of broken stone in cuttings on Kenfutsuro-Sempo section, and improvements in the road-bed and the spreading of gravel on Kozan-Nanzan section, and the spreading of gravel on goods lines at Gensan Station, are now in progress.

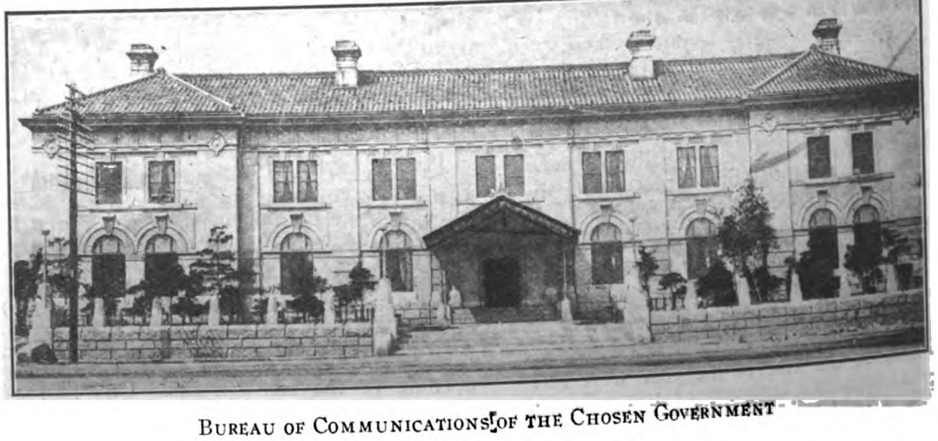
*Kei-Gi Line.*—The extension of Mochuri Station and the improvement of the track adjacent to the station continued from the previous year, were finished and the different arrangements demanded at the station on account of these works were all completed: the reconstruction of Hakusen branch was also finished.

As regards the Hei-Nan Line, alteration of a grade of a part of the track between Heijyo and Taihei, and Kiyo and Shinchido, erection of steel girders over the flood openings for the R. Futsu No. 3, were furnished and enlarging of various stations will be taken up next fiscal year.

### Survey of New Lines

As regards the improvement work, on the Kei-Fu line the survey for tracks between Taikyu and Fuko, Jakuboku and Fuko, and near Keijyo and Soryo was finished in June: Various preparations for the work were made and the earthwork for Taiden-Fuko (13.5 miles) and Jakuboku-Kinsen (20.4 m.) sections, which was most urgently needed were commenced in October. Jakuboku-Kinsen section is expected to be finished in the fiscal year 1915, and Taiden-Fuko section in the fiscal year 1916. With regard to land necessary for the above mentioned works, measuring and other investigations were started the previous year, purchase was begun in September and the work was all but finished during the year.

The officials and employees at the end of the year numbered 8,962, including 3 of Chokunin rank, 56 of Sonin rank, 469 of Hannin rank, 1,679 of employees of higher grade, 6,751 of lower grade, and 4 commissioners. The monthly pay roll for these officials and employees amounted to Yen 230,851.



Bureau of Communications of the Chosen Government

# RAILWAY PROGRESS IN CHINA IN 1915

[From Maritime Customs Reports, 1916]

Although the financial stringency incident upon the European war compelled most of the railway projects in China to mark time, some substantial progress was made in several of the new lines and all are prepared for the resumption of construction work as soon as funds are available. The Commissioners of Customs of the Yangtse valley districts have furnished the following information in their 1915 reports which have recently been made public:

### Hankow-Szechuen Line

From Ichang the Commissioner reports that international financial stringency, due to the continued war in Europe, brought active work in connexion with the Ch'uan-Han Railway to a standstill in September, when all the foreign engineering staff except the chief were dispensed with, and the latter retained for custody of property pending the return of favourable conditions. But it is believed that very sound investigations were made, and these were reported in detail with photographic illustrations to the authorities concerned.

All preliminary surveys of the Ichang-Kweichowfu section were completed and the final location carried to a point 35 miles west of Ichang in the early spring. The length of the proposed Nanto tunnel was reduced to 17,475 feet. Its eastern portal is to be situated 13 miles west of Ichang and is to be reached via the San-Yu-tung Glen at a point 7 miles from the left bank of the Yangtze. The western portal is to be 19 miles from Ichang by river, about 600 feet from the left bank, near the village of Nanto. It is estimated that this tunnel, the largest yet projected in China, could be constructed in four years.

The interval between Kweichowfu and Siaokiang was linked by a preliminary survey, and the final survey of the I-K'uei section finished in the June quarter. A traffic report is said to be in preparation, which should demonstrate the commercial soundness of the scheme, as its technical practicability has already been demonstrated. To this a civilian may venture to add that such a railway would seem to be of at least equal strategic importance to the Central Government, rendering Szechwan and Yunnan accessible to the movement of troops from the north-east, at present dependent upon a dangerous and undeveloped waterway not available for steam transport during the winter season.

From Changsha it is reported that work on the Changsha-Yochow-Hankow Railway line, which is to form a section of the Canton-Hankow line, has progressed favourably. Earthwork is completed for about 60 miles north of Changsha and is also completely through to Yochow with the exception of some small gaps. The culverts and masonry work of the small bridges have nearly all been completed, and the steelwork is being erected. The foundations of the piers of the major bridges are all in hand, many of them being already completed, and all the masonry work of the large bridges will be finished by the end of 1916.

Owing to the European war, the date of delivery of the steel work for the large bridges is somewhat doubtful, but it is expected that it will arrive during 1916 before the river is too low to prevent boats from reaching the bridge sites. All culverts and bridges have been constructed in cement concrete, and the piers of the larger bridges have in some cases been sunk on caissons or well curbs by opening dredging, in others by means of compressed air, and all piers of the large bridges are being carried down to rock at various depths below the river beds.

As there are no tunnels between this place and Yochow, earthwork is not heavy, except between the Hsinch'iang and Milo Rivers, and in the neighbourhood of Changsha. There are two big crossings at the Hsinch'iang Rivers about 500 and 600 feet each, one at the Milo.

The distance from Yochow station to the Changsha terminus is 85½ miles, being nearly a direct route. Stations are likely to be of a temporary or semi-permanent nature, owing to the necessity for strict economy of funds. None of the places at present touched between the two ports is of any great importance, the market town of Hwangshakai (黃沙街) being the largest, but considerable traffic may be expected at the Milo from the direction of Pingkiang (平江).

The Nanking-Changsha line (甯湘) has been surveyed through, parties of engineers having arrived at the port twice during the year, early in March and again in December. Two routes would appear to be under contemplation, one of which provides for the use of the Changsha-Chuchow (長株) railway line, which itself is a section of the Canton-Hankow line, as a portion of the projected line, while another scheme suggests the laying of a direct route from Nanchang, in Kiangsi Province, to Changsha, the latter route being considered more suitable. As the loan agreements in connexion with this contemplated railway line had to be postponed on account of the outbreak of hostilities in Europe, no decision has as yet been made in this respect.

Yochow's Customs Commissioner reports that during the year all embankments and cuttings on the Canton-Hankow Railway have been finished for about 60 miles from Wuchang and all bridges and culverts completed for about 50 miles. A large proportion of the remaining earthwork is finished as far as Changsha, and the bridges and culverts are in hand. About 25 miles of rails have been laid from Wuchang southwards, but no public trains are yet running.

The Commissioner at Hankow makes public the following report of Mr. A. G. Cox, engineer-in-chief of the Canton-Hankow Railway, re. progress made during the year 1915:

The purchase of all land required for the line from Wuchang to Changsha—226 miles—was completed during the year. Owing to high floods and exceptionally heavy rainfall, there were numerous delays in earthwork, but very fair progress was maintained through the year. Up to the end of the year 3,824,645 cubic *fang* of earthwork in cutting and embankment were completed, this quantity representing 61 per cent. of the total amount to be done. The monthly output in earthwork has increased at a very satisfactory rate from month to month.

Quite good progress was maintained in the building of bridge abutments and culverts; all masonry and concrete work over the first 36 miles has been completed, and between 40 and 50 per cent. completed on the remainder of the line. The war in Europe has given rise to delay in delivery of the first indent for bridgework, the whole (with exception of two 60-foot spans lost on the s.s. Diomed) have been received, and the steelwork is being erected on the first district from Wuchang. The cost of steel bridgework, under contracts let in the latter part of the year shows great increase over former prices.

Track-laying has been seriously delayed, owing to the settlement of an embankment in swampy ground near the 9th mile; the settlement has been slow, and the process of making up and consolidating the bank a tedious one. The general office, the residences of the managing director and the engineer-in-chief, and all staff quarters were completed during the year and occupied.

"An electric power plant purchased from the I-Kwei (American) section is being erected. In the meantime the quarters are being supplied with electricity from the Wuchang Light and Power Company. During the early part of the year we dispensed with the services of four foreign engineers, owing to the desire to economise. Since then nine have left, the majority of them having gone to the war."

The report from the Commissioner states that regular traffic on the Nan-Hsun Railway connecting Kiukiang with Nanchang, the provincial capital, was opened on the 1st January, 1915, though a large iron bridge at Tukiafow was still under construction. As it has been impossible to obtain the materials necessary for the bridge owing to the war, it has been decided to build a wooden bridge instead, and this, it is expected, will be finished within another three months. The traffic on this line has not been very remunerative so far: the amount collected on freight and passenger traffic averages about $500 per day, though more business is expected when the bridge is completed.

From Nanking the Commissioner reports that the most interesting event in connexion with the port that occurred in the period under review was the opening to trade of the wharves of the Tientsin-Pukow Railway, which event took place on the 1st July. Simultaneously the limits of the harbour were extended to the left bank of the Yangtze to enable vessels to moor at the railway wharves. This Customs office, however, did not reap much direct benefit from the increased facilities thus afforded to shipping till the latter part of the year, when the block of cargo at Pukow became so great that it became necessary to enlist the aid of steamers to carry part of the accumulated cargo.

Up to this time the bulk of the goods arriving from the North had continued to proceed to Shanghai by rail, as previous to the opening of the railway wharves to shipping. It would appear to be more economical for cargo destined for ports beyond Shanghai to be shipped direct to destination from Pukow, instead of being sent by rail to Shanghai and thence shipped to port of destination. In spite of the fact that most of the export business is financed at Shanghai, there are already indications that direct trade between Nanking and coast ports is growing.

Except on the Lung-Ts'in-Yu Hai Railway practically no construction work has been carried out on the railways in this neighbourhood during the year under review. The difficulty of raising loans in foreign countries has been the main obstacle to progress in railway construction. Work has been completely stopped for the time being on the Pu-Hsin Railway, and the work carried out on the Ning-Hsiang Railway has consisted entirely of making surveys of the proposed route. Whether the main line of this railway when completed shall first reach the Yangtze at Nanking or at Wuhu is a matter of great importance to the ports concerned; still more important would the consequence be if this railway found its main outlet to a deep-water harbour through one of the several branch lines which have already been projected to connect with the main line.

The railways already in operation have been doing well, more particularly during the latter part of the year. I have referred above to the accumulation of cargo at the Tientsin-Pukow wharves, which at one time amounted to no less than 40,000 tons. It is estimated that the Shanghai-Nanking Railway carried

from Nanking to Shanghai during November and December more than 50,000 tons of cargo a month, practically all of which was transported under likin control.

The proportion between goods exported by rail and goods exported by steamer to Shanghai may be reckoned as being in the ratio of 7 to 3. Of the imports which arrived from Shanghai, it is estimated that about 70 per cent. were carried by steamers and about 30 per cent. by rail, and that of the rail-borne imports about 40 per cent. were covered by Customs documents.

Chinkiang formerly found itself admirably situated as a trading centre, owing to its proximity to an ideal inland water system, through which cargo could be distributed to, and collected from, many provinces. Progress in the way of railways has, however, been detrimental to the port while benefiting the places of consumption and production, that is to say, Chinkiang has lost the handling of a large part of the trade, while the consumer or producer has benefited, principally by rapidity in transport.

The trade is not lost—it is only lost to Chinkiang. There is no getting away from the fact that Chinkiang is side-tracked. The effect of the above is shown in the value of the trade of the port, which for the past ten years has consistently dropped year by year. The decrease of over 2 million taels in 1914 brings down the net value in 1915 to Hk. Tls. 10,152,585, or 54 per cent. of the 1906 figures. There is, however, a gleam of sunshine.

In September the Grand Canal Conservancy Bureau entered upon a comprehensive scheme of canal improvement, estimated to occupy three years. After that, it is confidently expected that the canal will be found to have a sufficient depth of water in the winter months to enable free traffic during that busy season of the year, and sufficiently stable banks and dikes to prevent the recurrence of the floods of the past, which have devastated from time to time the rich and highly cultivated country through which the canal passes. The work comprises the repairing of dams, the building of additional stone dikes, and the dredging of the shallows between Kwachow and Tsingkiangpu. Four dredgers are employed, and already there are signs of good work being done.

This has been a crying need for some years, for it must be admitted the canal deterioration has greatly assisted the various railways in deflecting trade. There can be no doubt that this and the larger schemes for the conservancy of the canal as a whole, as well as of other inland waterways, will be of immense benefit to the trade of China.

Still, although Chinkiang will undoubtedly benefit, it must not be expected that the effect will necessarily be reflected in that part of the trade that happens to pass through the Maritime Customs at Chinkiang—the improvements will be provincial rather than parochial.

The latest link in the chain of railways, the Lung-Hai, should shortly be ready for goods traffic between Hsuchowfu and Kaifengfu. This is a fine wheat country, where a bumper crop was garnered. In fact it may be generally stated that the harvests in the surrounding country have been the best for many years.

# CONDITIONS IN THE PHILIPPINES

[By Harold M. Pitt, President Manila Merchants' Association]

With hemp worth P407.00 per ton, in June, 1916, as against P285.00 in June, 1915; with copra worth P230.00 per ton, as against P165.00; with tobacco worth P503.00 per ton as against P300.00 and sugar worth P122.00 as compared with P102.00, the Islands were able to show an enormous increase in the value of exports and to increase the favorable balance in trade, that amounted to over P23,000,000 for the first five months of the year, to nearly P33,000,000 for the six months comprising the first half of the calendar year 1916.

The Customs record for the month of June was little short of remarkable, both in respect of the value of exports and the great excess of exports over imports.

Copra exports have shown a decided falling off throughout the past twelve months as compared with the twelve months preceding. In May of this year the loss in comparison with May, 1915, amounted to nearly two million pesos. The falling off for the month of June was P635,572.00, and as June showed a gratifying increase over May, in both quantity and value of the copra exported, it may be taken for granted that copra production has made a definite upward turn and that we shall see material improvement as month succeeds month. The manufacture of coconut oil is, of course, absorbing a considerable amount of copra that formerly went into export. The coconut oil exported in June was greater in value by P271,904.00 than for June of last year, but copra is the only item on the list of exports that shows a material decrease for the month.

The increase in the value of hemp exported in June as compared with June, 1915 exceeded the decrease in the value of the copra, but the great increase was recorded by sugar, which jumped from P3,400,000 to P6,494,000. Earlier reports were to the effect that, although the planting for the 1915-16 season was considerably greater than for the preceding year, the continuous rains had made it impossible to mature and cut the cane, and much of it would therefore have to be left in the fields. It was estimated that this loss would about neutralize the increased acreage. These calculations, however, appear to have been discredited, as sugar exports for the first six months of 1916 show an increase over the first six months of 1915 of a little less than 100,000 tons in quantity and of nearly twelve million pesos in value. Taking the figures for the Fiscal Year ending June 30th, a comparison of 1916 with 1915 shows an increase in the amount of sugar exported of 125,000 tons and in value of P14,981,122.00. This suggests that the increase is very largely in the new crop and it is therefore apparent that the planters must have succeeded in harvesting and grinding practically all of the cane planted.

The increase in the value of hemp exported in June over June of last year is accounted for entirely by the increased value of the product. Exports in June, 1915, were 23,239 tons and in June, 1916, but 17,836 tons, showing a falling off of between five and six thousand tons in quantity, although the total value of exports for June of this year was greater by P642,605.00 than for June, 1915.

Knotted hemp and maguey have both recorded a material increase in June over June of last year, and the value of the latter product has advanced in consonance with the increase in the value of hemp.

Exports of leaf tobacco show a falling off in June of P174,182.00 although for the first six months of this year they were greater by P982,654.00 than for the first half of 1915, and for the Fiscal Year ending June 30th the increase was in excess of one million pesos as compared with the Fiscal Year 1915.

In this number of the Review we are publishing Customs reports for June, 1915 and 1916 and reports covering the foreign commerce of the Islands for the Fiscal Year ending June 30, 1916, together with comparisons with the year preceding. The Fiscal Year figures are arrived at by combining the reports of the Bureau of Customs covering the first six months of the present year with the monthly reports from July to December, 1915. We are also reproducing the report of the Internal Revenue returns that are made public by the Bureau of Internal Revenue consisting of a comparative statement of collections during the period January 1st to June 30th of the years 1915 and 1916.

The Customs reports, in so far as they relate to exports, are extremely gratifying and reflect a material increase in the production of many articles, as well as an active market for all that can be produced for export and at satisfactory prices.

The excess of exports over imports for the first six months of the year, is little short of phenomenal, and the wonder is that internal business has not realized more pronounced benefits therefrom.

Importers are still having difficulty in securing supplies and this would naturally affect the consumption of imported articles to a greater or less extent.

The report of the Collector of Internal Revenue shows that there was an increase in collections from the business tax of P827,905.00 for the first six months of 1916 as compared with the same period of 1915. The report covering collections for the first quarter of 1916 showed an increase over 1915 of P671,000.00. The greater increase for the first quarter was due to the fact that the collections during January, February and March of 1915 were for the business done in the last quarter of 1914 when the tax was but one-third of one percent. The comparison of the second quarter of the two years shows an increase for 1916 of P150,000 which would represent a gross business of P15,000,000 on the basis of the one per cent tax. But in 1916 the exemption with regard to exports was abolished. Thus in 1916 the tax included collections on the export business, which would more than account for the increase in business indicated by the increased collections. Also, other lines of business were brought under the merchants' tax provision that did not pay this tax in 1915, but as an offset could be counted the quarterly tax paid by small dealers who are exempt from the percentage tax by reason of the limited amount of their trade, but who, beginning with January 1st, of this year, were made to pay an annual tax in the form of a license, whereas in 1915 a tax was collected from them quarterly. There are many of these small dealers and the aggregate of the quarterly tax formerly paid by them, if figured on the basis of one per cent, would represent a considerable volume of business. This quarterly payment does not appear in collections for the second quarter of 1916 but was included in the collections for the second quarter of 1915.

Tax collections on distilled spirits for the six months of 1916 showed an increase of P266,447.78, whereas for the first quarter of the year it amounted to P278,854.84. This indicates that the collections for the second quarter were P12,407.00 less than for the second quarter of 1915. The reduction in the tax from P.0.35 to P.0.30 per proof liter would more than account for this loss. The increase in the first quarter was due to distillers holding back on withdrawals at the close of 1915 in order to obtain the advantage of the lower rate that went into effect with the new year. The situation the preceding

year was exactly the opposite. In December, 1914, distillers withdrew from bond all they were able to as the tax was increased on January 1st, 1915, from P.0.25 to P.0.35 per proof liter. This made the collections in the last quarter of 1914 exceptionally heavy and those in the first quarter of 1915 correspondingly light.

In the case of cigarettes there was a gain in collections for both quarters, although the increase for the second quarter was comparatively small, amounting to but P47,903.00. There was no change in the tax on cigarettes this year, the emergency rate being continued, but the collections in the first quarter of 1915 were light for the same reasons that apply in the case of distilled spirits.

Collections from the tax on gasoline were greater by P66,310.00 in the first quarter of 1916, than during the corresponding period of last year, but for the six months of 1916, the increase was but P10,355.00, showing a loss for the second quarter of approximately P56,000.00. This could be accounted for by a decrease in the tax rate of 25%, the tax being P.0.04 per liter for 1915 and P.0.03 per liter for 1916.

In the case of petroleum, the collections for the second quarter of 1916 show a falling off of P162,191.00 as compared with 1915. The increase in the collections for the first quarter was P187,909.00, while the increase for the six months was but P25,718.00.

The report for the six months shows a net increase in collections from all sources of P1,692,572.00. This cannot, however, be credited to any increase in actual business, but is the result of increased rates of taxation and the unusual conditions affecting such important items as distilled spirits and cigarettes that have been referred to.

The heavy exports for the past six months, considered in connection with the exceptionally light imports, would suggest a large accumulation of money in the Islands, the beneficial effects of which should soon be felt by industry generally. Difficulties that have been experienced by importers promise soon to be abated and within the next three or four months a decided improvement should develop in commerce.

The season's export of sugar has about ended and a cessation may be looked for in hemp receipts.

Favorable weather conditions will doubtless stimulate the production of copra, and there are products, such as maguey, rattans, and various manufactured articles, including pearl buttons and embroideries, that will steadily increase in importance and make a substantial addition to the export business of the Islands.

Following are the figures of exports and imports for 1916 by months, from January to June, inclusive:

| | *Exports* | *Imports* |
|---|---|---|
| January ... ... ... | P11,902,944 | P7,926,391 |
| February ... ... ... | 9,029,570 | 4,804,897 |
| March ... ... ... | 12,393,236 | 7,206,511 |
| April ... ... ... | 9,096,170 | 6,757,355 |
| May ... ... ... | 14,874,994 | 7,227,622 |
| June ... ... ... | 16,636,339 | 7,127,766 |

The highly favorable crop reports that gave promise of bumper yields in sugar and rice and the maintenance of a fair average production in the other products, have been materially modified by more recent information from provincial sources. From Cagayan comes word that heavy rains and floods, together with high winds, played havoc with the tobacco. The rice crop of Central Luzon has suffered damage from similar causes while from present indications the sugar crop of Negros will fall 20 or 25 per cent under what was predicted. This season's rice crop will go above the average, while it may fall below. This means that the islands will have to pay out for foreign rice anywhere from P7,000,000 to P10,000,000.

The freight condition is, if anything, becoming rapidly more difficult. Thus in the case of sugar, where large returns were expected, it is probable that the crop will little more than justify the cost of harvesting and milling on account of the great expense attaching to transportation. Hemp and copra furnish exceptions in a far from favorable condition. Customs returns for the month of January, which have just been made available, show an increase in exports of P1,300,000, as compared with last year. There was a heavy drop in exports of both copra and coconut oil, the latter due doubtless to paucity of shipping facilities. Hemp made a big gain, jumping from P3,700,000 in January, 1915, to P5,400,000, for the same month this year. Exports of sugar also increased materially—from P321,000 to P1,512,000. Cigars and tobacco showed substantial gains, and embroideries and hats contributed materially to the increase, which effected an offset to the falling off in copra and coconut oil. In imports there was a net decrease of P1,436,771. A number of items showed an increase over January of 1915, among them being wheat flour, cotton goods, oils, silk, and liquors. The heaviest decreases occurred in rice, illuminating oil, and iron and steel.

## WOLFRAM IN BURMA

In view of the great interest aroused in Malaya and other tin mining centres in the development of the Burmese wolfram industry, it will be interesting to note that the matter has assumed such practical and important proportions that one of the largest British firms dealing in this product has begun to move in the East, and has set up a laboratory and buying business in the Tavoy district of Burma, the centre of the wolfram industry in the East, where they are also acquiring concessions.

Important information just to hand is that the High Speed Steel Alloys, Ltd. composed of thirty-one of the biggest steel manufacturers in the British Isles, and including such firms as Messrs. Vickers, Armstrong Whitworth, Cammel Laird, Balfour Ltd., Edgar Allan, Osborne, Jessops, etc., have now permanently established themselves at Tavoy, and have already fitted up a large laboratory in which highly qualified and experienced assayers are at work on wolfram ores. A large plant of machinery is on its way from England and electromagnetic separators of the latest designs, specially made for dealing with wolfram, tin-ore, and monazite concentrates are to be erected immediately. The General Manager is Dr. William R. Jones, D. Sc., formerly Assistant Geologist in the Federated Malay States.

The High Speed Steel Alloys, Ltd., use over 80 per cent of the wolfram imported into the British Isles, and have erected large works at Widnes for the manufacture of pure tungsten metal. They have been able to produce tungsten of higher purity than was placed on the market by the Germans before the war. Their activities in Tavoy are not restricted to the buying of wolfram, but they are taking up large concessions with the view of working them systematically. It is to be hoped that their representative will visit the country in which he did a great deal of most useful geological work, and give further incentive to the prospecting of wolfram as he did for tin-ore.

Commenting on the above, the *Times* of Malaya says: A great deal remains to be done in Malaya to make it impossible for German influence, after the war is over, to procure tungsten ores, and now that an all-British Company, with unlimited resources behind it, has taken up the matter seriously, it is to be hoped that a repetition of a German monopoly in wolfram and scheelite will be rendered impossible.

## MELTING AND REBOILING MUSCAVADO SUGAR

The Bureau of Science of the Philippines has issued a bulletin shows how the central sugar mills in the inlands may help planters and increase profits.

Muscavado sugar is the more or less impure product that results from the direct evaporation of cane juice, which usually has a water content of about 82 per cent. The muscavado sugar has two per cent or more water, according to the purity of the juice; the purer the juice, the dryer it can be made on the crystallising boards, providing it is well treated throughout the process of manufacture.

The demand for muscavado sugar is decreasing year by year. As long as centrifugal sugar can be purchased, muscavado sugar either brings a lower price or is unsaleable. Therefore, at most times muscavado sugar can be purchased at a price at which there is a profit in melting and reboiling. Any central factory, at small additional expense, can use considerable quantities in its regular process without the use of extra fuel; or, when otherwise unoccupied, may take up the reboiling of muscavado sugar as a special industry.

The sugars obtained by the muscavado process vary in sugar content, as shown by the polarisations, to such an extent that it is necessary arbitrarily to differentiate between them. The Bureau of Science each year fixes the sugar standards which shall govern during the year.

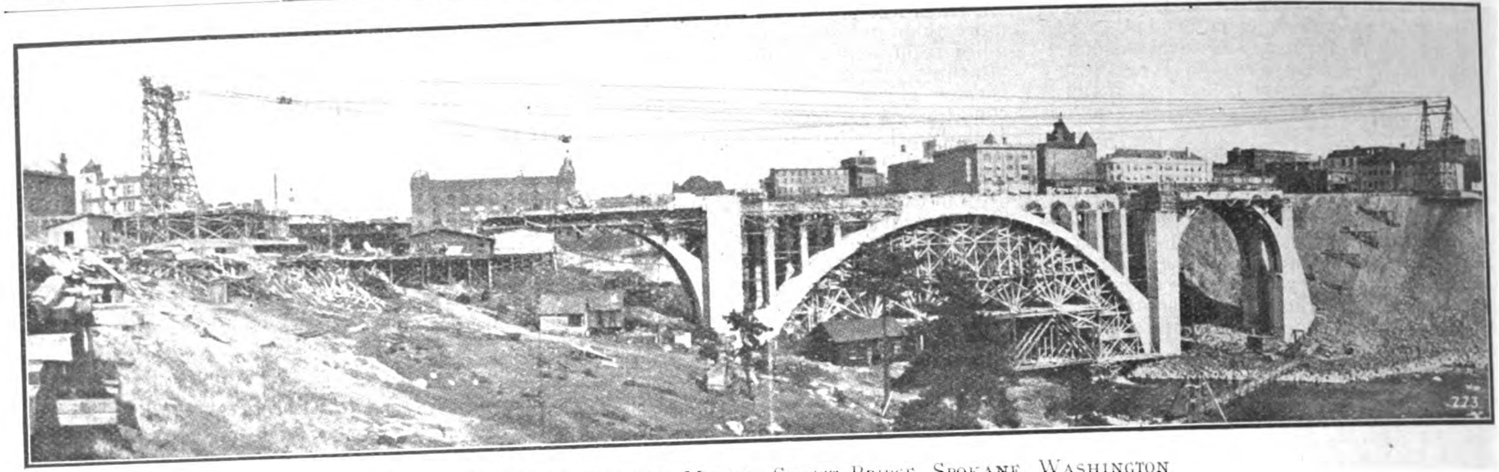
In a central mill the muscavado sugar may be dissolved in a regular melter, which is a circular tank provided with a stirrer; or in the absence of this machine; the sugar may be introduced into the defecators, eliminators, or other tanks containing hot juice; or in still other ways, for example, by allowing the clear hot juice from the subsiders to flow into the sugar suspended in a screen basket. A screen should be used in case to remove the portions of caramel or other foreign matter contained in the muscavado sugar. The high-grade sugars may be melted and reboiled directly, but the low grades will require treatment with lime to neutralise their acidity. Therefore, the low grades can be remelted to best advantage in the defecation tanks, where they will receive the same treatment as fresh juice. This is why sugar can advantageously be melted in centrals in connection with their regular operation. The amount of sugar that can be melted daily will depend not only on the cane supply, the amount of syrup and molasses in storage waiting to be boiled, etc., but also on the factor of safety which was provided in the design of the boiling house. A small, 150-ton should be able to utilise 50 or more piculs of muscavado sugar daily. One large central factory in the Islands is now melting from 300 to 400 piculs daily without difficulty.

The melting of muscavado sugar serves a dual purpose; (1) it creates a demand for muscavado sugar, which relieves the economic pressure on the hacenderos, and (2) it offers the manufacturers an opportunity to make a profit in melting at little inconvenience and expense.

Owners of centrals or of plants equipped with vacuum pan and centrifugal machine are urged to take up this new business as it is a profitable industry.

## TSINSHAN WIRELESS RE-CONSTRUCTED

The wireless station at Tsinshan, erected in 1908 to facilitate rapid communication with the gun-boats patrolling the waters of the delta for the suppression of piracy, and which was destroyed on the outbreak of the Revolution, has been rebuilt and is now in working order.



Duplex Cableway Building Monroe Street Bridge, Spokane, Washington

## LIDGERWOOD CABLEWAYS

The Lidgerwood Cableway is a hoisting and conveying device operating over a single span, the load carriage traveling over a cable suspended between two towers. The load may be lifted from any point, conveyed in either direction, and lowered wherever desired along the line of the cableway.

The great advantage of the cableway for handling material is that its operation does not interfere with other work being performed under its span, the towers being located clear of the work, and the cable suspended well above. In dam and bridge construction the cableway spans the river, the material can be carried along the cableway and deposited at any point of the dam wall or bridge structure without interfering with the operations on the intervening portions of the work. They have been installed where they have crossed railroad tracks, streets, etc., and have run continuously without any interference with traffic. The advantages of this are obvious.

The Lidgerwood Cableway is used in the construction of bridges, locks and dams, filtration systems, and general concrete work; for tunnels, railroad cuts and open pit mine and quarry work; and for a variety of industrial purposes such as coal storage, handling cargo, and gathering and handling logs at mills for manufacturing lumber and pulp making. The cableway handles loads in ordinary skips, slings, automatic dumping skips, and automatic dumping concrete tubs. It operates both grab and scraper excavating buckets.

### Varieties of Cableways

Lidgerwood Cableways are built in various types to meet differing requirements. They are built with both towers fixed; with one tower fixed and the other traveling radially about it; and with both towers traveling on tracks parallel to each other; also with two cables suspended from the one set of towers. They have been installed for landing cargo with one tower on shore, and the other on floating pontoons. They have been built in spans exceeding 2,000 feet, and under favorable conditions longer spans are entirely feasible. We have built numerous cableways carrying loads of 25 to 30 tons, and heavier loads where desired are practicable. The superiority of Lidgerwood Cableways is the result of the care with which each installation is designed and constructed. Competent engineers, long trained in the designing of cableways, are employed. Improvements are made as experience indicates, resulting in the highest efficiency.

### Cableway Engineering

The physical conditions of cableway installations differ greatly and the nature of the duties they perform is so diversified that each individual installation is a separate engineering proposition. Its location, the duty it has to perform, and the relationship of the work it has to do with that of the other units of equipment on the contract, demand that it be designed by competent and experienced engineers. Each cableway must be designed with reference to the span, the tower heights and locations, the profile of the intervening land, and the duty it should perform.

### Lidgerwood Cableways Used in Bridge Building

The illustration shows the Monroe Street Bridge at Spokane, Washington. Two Lidgerwood cableways were used upon this work. They were suspended between twin towers, the span of each being 1100 feet. Both the twin head and tail tower were 100 feet in height. They were designed to handle average loads of 3½ to 4 tons, and occasional loads of 5 tons. The engines had double cylinders 9" diameter and 10" stroke. The value of the cableways upon this work is shown in the following description of the work, by Mr. J. F. Greene, Assistant Engineer. The cableways not only handled the steel work forms, etc., in addition to the concrete used in the construction, but also were used in the removal of the steel structure which the new bridge replaces.

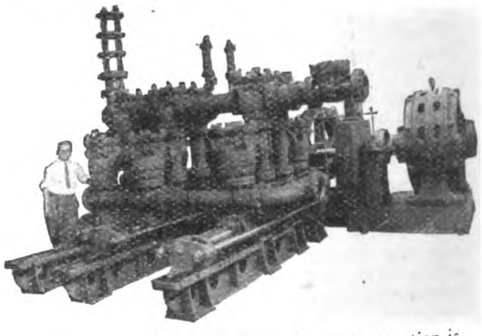
"The new bridge is 790 feet long, consisting of five spans, four arches and a half arch with piers and abutments," states Mr. Green. "At the south end a timber trestle will serve as a temporary approach until the completion of an extensive earth fill. This approach to be 350 feet long and to contain about 300,000 feet of lumber. A riprap wall has already been placed as a toe for the earth slope adjoining the river, this wall containing 12,000 yards of rock, all of which was handled by the cableways from the north end of the bridge. The rock was carried in large wooden boxes in loads of 4 to 6 tons.

"The bridge will have a 50 foot roadway with two 9 foot sidewalks with a reinforced concrete hand rail. The beams of the roadway are made of structural steel encased in concrete; the slabs are of concrete, reinforced with wire mesh. The arch rings were designed to carry their loads without reinforcement, the lines of resistance in all cases falling within the middle third; a small amount of steel however, was placed in the rings. The removal of the old steel was effected by the cableways alone without the aid of derricks. In the erection of the centering under the 281 foot arch the steel truss was raised with both derricks and cableway, the latter being used both for fetching the steel members and placing in conjunction with the travelers.

"All falsework bents were framed and packed at the north end of the bridge and erected with the cableways, the heaviest bent consisting of four 18"×36" long with 4"×10" bracing and walling. All of the concrete form work was raised in panels, the largest being 20 feet by 2" sheeting with 3"×8" stubs, the forms being placed almost entirely with the cableways. The amount of concrete handled in a day varied with the length of the run on the cableway. With a lift of 100 feet at the mixing end, a run of 600 feet and a lift at the concreting end of 100 feet and a 1½ yard bucket, the average run was 36 yards an hour."

## LARGE ELECTRICALLY DRIVEN MINE PUMP

The El Oro Mining & Railway Company, of El Oro, Mexico, has installed what is said to be the largest motor-driven pump equipments ever built for unwatering a mine. The pump, which was built by the Goulds Manufacturing Company, Seneca Falls, N.Y., has a capacity



of 500 gal. per minute. The construction is such that the pump can be readily dismantled and lowered down an ordinary mine shaft, and when assembled it requires a very little head room. The pump is installed in the bottom of the mine and works against a head of 1,300 ft. The driving motor is a 200-H.P., three-phase, 50 cycle, 440 volt, 485-R.P.M. Westinghouse machine, connected with double reduction gearing giving the crank shaft of the pump a speed of 35 R. P. M.

## SEWING MACHINES IN SIBERIA

Siberia offers a promising market for sewing machines. Outside of those made in Russia by a well-known American company, the greater number sold are of German origin, and supplies of the latter are now exhausted. The machines are bought on the basis of extended monthly payments. The following are the normal prices of these machines, delivered, duty paid, at Omsk: Long shuttle, $13; $9.12; ring shuttle, $12.36; central spool, $13; vibrating, $10.09. All machines are to be made with covers, or, if without, they are $1.03 cheaper. The terms are nine months' acceptance from the date of shipment, duty and freight to be paid by the purchaser.

# ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

## RIVERS AND HARBOURS

**Osaka Harbour Works.**—The construction of harbour accommodation at Osaka is to be postponed for five years because the Osaka Municipality is short of money. The Home Office has just granted official sanction for the step taken, after the examination of the city's finances. Osaka business men criticise the step taken by the Osaka Municipality and the Home Office adversely as checking the progress of industry and commerce in Osaka. In an interview, the Home Office authorities said that the completion of harbour accommodation at Osaka is not so imperative as to be facilitaed in the face of the weakness of the municipal finance because the port is at present the gate for Osaka only, trade with Europe, America, and China being handled by Kobe.

**Karatsu Harbour Works.**—It is reported from Saga that the Karatsu harbour improvement works have been approved by the Japanese Government. The project will require a capital of Y.1,500,000, two-thirds of which will be raised by public subscription. The sea front of Nishi-Karatsu will be reclaimed to the extent of 35,000 tsubo and a breakwater will be constructed at a point north-west of Oshima Island. A pier 280 yards long will also be built for the accommodation of steamers visiting the port. The proposed works will take five years to complete.

**Yokohama Insistent on Harbor Industries.**—A strong note of insistence rings through a communication of the Yokohama City Assembly sent the Government in which Yokohama asks permission for the establishment of shipbuilding yards or other shore industries in the harbor. Mayor Ando presented the note to Dr. Ichiki, Minister of Home Affairs. It reads as follows:

"It is useless to state here that the future prosperity of Yokohama depends upon the improvement of the harbor. The city built the new Customs compound with co-operation of the Government, which shows the special attention we are paying to the development of the port. For the industrial progress of the city, the mayor made a plan some time ago with an object of inviting industrial establishments and the municipal authorities are now giving special concessions to factories established within the city's fixed industrial zones. This object is undoubtedly to improve industrial undertakings taking the advantage of the harbor.

"The city is welcoming establishment of industrial works and for their convenience may sacrifice even a small portion of the harbor if it does not interfere with the prosperity of the port.

"When Mr. Asano, president of the Toyo Kisen Kaisha, made application a few months ago, asking permission to reclaim the shorefront of the harbor, the plan was received with the unanimous approval of the assembly, but the application was rejected by the Government harbor committee. If the port can not have a shipbuilding yard, its prosperity will be injured. With even a small portion of the harbor reclaimed, the prosperity of the city can be easily maintained by the establishment of a shipbuilding yard. As the matter has a close relation to the future of Yokohama, the Government will please make a favorable reply to the municipality."

**Kongmoon Bunding Progresses.**—The work on the bund near the Maritime Custom House, which was started the year before, has been completed, but the remaining 380 feet of the river bank between the said section of the bund and that of the Canadian Presbyterian Mission still await bunding, owing to the lack of enterprise of the few landowners who possess them.

**Macao Dredging and Drainage Work.**—During the year a harbour commission has been engaged in ameliorating the harbour of Macao. A sea-going dredger has been ordered and will presumably be employed in improving the channel leading to the entrance to Macao harbour. It may be recalled that in 1911 the Macao Government entered into a contract with a Hongkong engineering firm to dredge a channel of 6,000 metres with a uniform depth of 12-feet. Since then the channel has shoaled somewhat and at low water even some of the shallow-draught river steamers are occasionally forced to await the rising of the tide to enter the harbour. The construction of a typhoon refuge for small craft is also being undertaken between Green Island and Macao, where a dredger is now at work excavating a basin for this purpose. Having by the aid of the hydraulic syphon system of drainage practically stamped out plague in Macao, the authorities are now turning their attention to malaria, and the low-lying ground with its stagnant pools east of the city, is being filled in with soil from the Mongha Hill. To facilitate this and also further reclamation work in the vicinity of Green Island, a light railway has been constructed and is in operation.

## ELECTRIC LIGHT AND POWER

**Samshui Electric Plant.**—The electric-light plant, with a capacity of about 3,000 lights, erected at Sainam commenced to supply current to Sainam and Samshui in September, and the quality of the light pro.ided is very fair. The success of this and of other small plants, and the greatly enhanced price of mineral oil, has led to other towns making plans for similar installations, and the erection of a plant at Chingyuen, on the North River, has been determined on.

**Wuchow Electric Company.**—The Wuchow Electric Light Company was reconstructed in November 1914, and early in the following year operations were commenced. Within a short time the laying of the street wires was completed, so that by May the inhabitants were able to enjoy the benefits of electric lighting, save during July and August, when, owing to the floods, almost all the street wires were destroyed. The installation is run by a suction-gas power plant, and the quality of the light is most excellent and has greatly risen in popular favour, all the leading shops, hotels, and flower-boats being now lit by electricity. For the last named the current is conveyed by wires from the shore to structures built on the roofs of the floating hotels and then connected up with the numerous flower-boats which congregate around them, giving quite a gay and bright appearance to the Fu River at night.

**Canton Expands Electric Plant.**—The Canton Electric Supply Company has made remarkable progress during the year; the monthly receipts are reported to amount to $60,000, and new customers are continually presenting themselves. This increase of business called for additional plant; but this was rendered a practical impossibility by scarcity of freight space and the rising price of electrical material, all of which is manufactured outside of China. This inability to extend the works naturally limited the increase in earnings.

## CHEMICALS AND DYESTUFFS

**New Chemical Industries of Japan.**—As a result of the war, many new industries have arisen in Japan, the chief ones, according to the investigations of the Department of Agriculture and Commerce, being the following:

Dye-stuffs—Aniline salt and black dye-stuffs are produced not only by dye-stuff manufacturing companies under the support of the Government, but also by the Tokyo and Osaka Gas companies, and the Mitsui Mining Companies. The output is now on the increase.

Chemicals—Such chemicals as subnitrate of bismuth, salicylic acid, antipyrin, acetate of calcium and formalin are now being produced in large quantities.

Glass wares—The output of plate glass by the Kyushu Asahi Glass Ware Manufacturing Company has been greatly increased not only to meet the demand at home but also to meet the requirement from South Pacific countries, Australia and France.

Celluloid—Extensions have been undertaken by many companies and the revival is now setting in this trade. The output has been doubled.

Paper—On account of the war, imports from Europe to China, India and the South Pacific countries have totally ceased. As substitute Japanese articles have been exported to these countries to the amount of 4,340,000 yen. The tendency is toward an increase.

Pulp—Since the war began, the pulp manufacturing industry in Japan has made a remarkable progress and the output is expected to increase to 140,000 tons next year. The establishment of more new factories is expected.

Yellow phosphorus—Yellow phosphorus is now produced in Japan.

Potassium chloride—Since the stoppage of foreign imports the deficiency of potassium chloride has been made up by the establishment of a number of factories, and the supply of this chemical is now abundant.

**Chemical Works of Japanese.**—According to the latest investigation of the Department of Agriculture and Commerce, the total number of factories engaged in the production of chemicals in Japan is 3,225, and the number of operatives 93,422, the total products reaching Y217,406,987.

The following shows chemical products of annual value exceeding Y500,000 (in thousands of yen) :—

Earthen ware & Porcelain, 5,198; Enamelled Ware, 1,297; Lime, 2,323; Brick, 3,595; Leather & Refined Skin, 6,953; Camphor and Camphor Oil, 3,770; Naphtha, 864; Light

Oil, 1,020; Lubricating Oil, 953; Other Vege- table Oils, 3,747; Rapeseed Cake, 3,807; Medical Materials, 1,423; Caustic Soda, 505; Sulphate of Ammonia, 1,579; Other Chemicals, 5,934; Rubber and Ebonite Manufactures, 6,183; Candle Wax, 786; Toilet Articles, 1,307; Miscellaneous, 5,914; Japanese Paper, 7,596; Cement, 12,221; Coke, 3,665; Tiles, 1,008; Foreign Paper, 10,215; Matches, 18,241; Peppermint Oil, 1,079; Lamp Oil, 7,279; Heavy Oil, 766; Bean Oil, 1,365; Fish Oil, 1,416; Drugs and Medicines, 19,901; Sulphuric Acid, 1,943; Potassium Iodide, 860; Bleaching Powder, 787; Celluloid Manufactures, 943; Soaps, 4,088; Paints, 4,486; Fertilisers, 23,987.

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**For More Dye Stuffs.**—A grant was recently given the Japan Dye Stuff Manufacturing Company for the purchase of two dye-stuff manufacturing factories belonging to the Nihonseimi and the Osaka Gas companies. Manufacture was started July 17.

From next month, yellow, pink and black colors will be put on the market but, as it is only an experimental production, it is small in quantity.

Upon completion of a principal factory, each color will be produced to the amount of 800 kin a month. Of the three colors, the black is made by a particular manufacture, especially in use in Japan. New machinery from America is expected to arrive in September.

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**Caustic Soda Exports of Japan.**—Caustic soda is being exported in increasing quantities, though still under an embargo, as the Government is inclined to give export permits for the weaker varieties, now that the production at home has been so increased that but for the export of the weaker sorts the market might be glutted very soon.

At present the goods available for export are produced by the Kwanto Acid and Soda Company and the Osaka Chemical Industry Company. The latter has already shipped 200,000 lbs. through the Mitsui Bussan Kaisha, while the former has exported to a somewhat greater extent. The market for those producers at present is found in China, Russia, and the South Sea Islands.

The Tokyo Alkali Industry Company, which has just been promoted to produce alkaline compounds out of brine by a patented process, is to commence operations very shortly. The company has secured the patent right taken out by Dr. Ogawa of the Tohoku Imperial University and Dr. Nukada, for the special process of producing alkaline compounds used for industrial purposes, and intends inaugurating this useful branch of industry both in Tokyo and Okayama prefectures with a capital of 500,000 yen.

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**Superphosphate in Japan.**—An event in the Japanese artificial fertilizer market is the production of bi-superphosphate and its shipment to British India where German goods alone have been on the market. The new factory for the production of bi-superphosphate, which the Dai Nippon Artificial Fertilizer Company has been building for some time past in Osaka, has just been completed. The producing capacity of the new plant is 50 tons a day maximum quantity, but soon it is to be enlarged.

The goods have not been produced here before because in this country no strong fertilizers are favoured by farmers, and there is little demand for bi-superphosphate. Some time ago a representative was despatched by Java sugar planters to Japan to secure a regular supply of bi-superphosphate.

Although this attempt failed, it furnished a strong inducement to the Dai Nippon Artificial Fertilizer Company to begin the manufacture and capture the trade which was regarded before the war as one of the greatest assets of German industrial workers.

**Nippon Paint Company.**—With only one competitor, whose output is less than one-fifth as great, the Nippon Paint Company of Shinagawa is enjoying a prosperous trade. The lone competitor is the Abe Paint Factory in Osaka. The Nippon Company says its product is up to the standard of the best English paints to be had in the Far East. The paint is being largely exported to China, Australia and India. The demand for home use is also increasing because of the absence of the imported stock. The company made a net profit of 230,000 yen in the half yearly business term just passed while the net gains in the preceding term were only 140,000 yen. Consequently, the dividends to the shareholders were increased from 12 per cent to 20 per cent.

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**Japan's Importation of Fertiliser.**—For 1915 the imports of fertiliser greatly decreased compared with the usual year, as freight space was short and the heavy depreciation of rice straitened the farmers' finances not a little. In 1916, importation has been still smaller. For the first five months the figure shows a loss of Y10,000,000 from 1914 and of Y3,040,000 from 1915. Phosphorites and sulphate of ammonia fell off most. The former was only Y580,-064 as against Y4,499,009 in 1914 and the latter only Y39,533 as against Y7,034,106 in 1914. The only exception is bean cake, the importation of which increased and reached Y20,368,-148 as against Y17,832,387 in 1914.

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**Japanese Dye Factory.**—The plant of the Nippon Dyestuff Company, ordered from an American engineering company sometime ago, is already en route, and the company expects that in October actual operations can begin. The company recently approached the Nippon Yusen Kaisha and the Communications Department with a request that the plant, which has been sent by the manufacturers to Seattle overland, be landed here at the earliest opportunity. Meanwhile the company is pushing the construction of a laboratory, and two factories where aniline and sulphuric acid will be turned out. When the plant arrives in October, these will be ready, and the supply of raw materials from the Government Iron Works at Yawata will begin. In November the products of the new company are expected to be placed on the market. For the first period the maximum production will be half-a-ton a day. The whole of the company's works will not be completed before February next year.

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**Japanese Dye-Stuff Factories.**—Not a few dye-stuff manufacturing companies have been established last year, but, excepting the Japan Dye Stuff Company, dye-stuff making is not yet fully developed. Although such companies as Tokyo Gas, Osaka Gas and Osaka Seimi are producing dye-stuffs out of coal tar, which is a bye-product, yet the amount is insignificant. The total amount of products, however, is by no means small and the black sulphuric dye stuffs are already over produced. Efforts are now being made to diminish the stocks by exporting it to Russia. The Japanese dye stuffs, in fact, are of inferior quality, those of superior character forming only a small portion of it, owing to defects in the method of manufacture and also to inferior materials.

Black dyes which come under the head name of the so-called sulphuric dyes are made of chips, dust and similar things and the black color is of only temporary nature. Chemical dye-stuffs are made from coal tar, but Japanese coal tar is much inferior to the American, which is higher in price. Manufacturers on a small scale are obliged to use the inferior kind by the want of means.

For the manufacture of the "methyl blue" or "methyl violet," wood spirit is necessary, the supply of which is not sufficient, while methyl alcohol obtained from the distillation of wood, is monopolized by the Naikoku drug-manufacturing and other companies, there being no surplus for the dye stuff companies. There is no probability of obtaining these in sufficient supply until the extensions of wood alcohol companies are completed.

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**Nippon Chemical Co.'s Progress.**—The Nippon Chemical Industry Company held an ordinary general meeting of shareholders on June 20, to receive the Board's report on the working of t e company during the past business term. The receipts of the term are said to be very large, as potassium chlorate has sold at extraordinarily high figures due to the favourable influences of the war, but the dividends on shares will not be increased proportionately, being limited to 25 per cent. per annum.

The Japan Safety Match Manufacturers' Guild on the other hand, has decided to renew the agreement, just expiring, to cut down production by 50 per cent. for another month, that is, from June 15 to July 15, in view of the precarious condition in which the chlorate and chemical market is placed. At a meeting of members in Osaka, it was stated that it would be advantageous to close the factories altogether, but the decision was modified and some manufacturers are to be allowed to continue their operations as they have had to fill the orders in hand.

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**Russo-Japanese Munitions Sales.**—The aggregate amount of the munitions the Japanese Government sold to Russia since the outbreak of the War, according to the returns of the Department of Finance at the end of April, reached Y200,000,000, of which 77,000,000 and odd yen worth remains unsettled in regard to the delivery of both goods and price. The amount supplied from private sources to Russia is estimated at Y100,000,000.

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**Japan to Make Explosives.**—On June 10 the Japan Explosives Manufacturing Company was duly organized, the Board of Directors being elected along with the Auditors. A quarter of the stock capital was paid in and with the conclusion of the organization the actual operations were commenced. The presidency of the new company was given to Lieutenant-General Morizo Oshiage on the reserve list who at once took charge of the manufacture of explosives, ordnance, and other military requisites.

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**Japan's Ammonia Plant.**—The Electric Chemical Industry Company, which is under the control of the Mitsui Company, has decided to erect two new factories in Kumamoto and Manchuria for the production of sulphurous ammonia (ammonium sulphate?). At Kumamoto a contract has been arranged with the Kumamoto Electricity Company for the supply of power, and on the strength of the power supply contracted for, the scheme of the new factory has been drawn up. At the new factory sulphurous ammonia is to be manufactured out of nitrogen from the air.

In Manchuria the factory will be erected in the vicinity of Mukden, power being supplied by the South Manchuria Railway Company. At the Manchuria factory also sulphurous ammonia is to be manufactured from August next year on the same system. Thus the company's yearly production of sulphurous ammonia soon will be over 16,000 tons per annum.

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**Japanese Glass Companies.**—The Nippon Glass Company, promoted by Messrs. Kyohei Magoshi, Sadajiro Shima, Shosuke Watanabe, Genjiro Yonei, and other business men to manufacture bottles for brewers, was formally organized at the first general meeting held at

the company's office in June. The company has a capital of 3,000,000 yen, paid up to the extent of 12.50 yen per share, and is operating two bottle manufacturing plants in Tokyo and Osaka. The maximum production of the company is 25,000,000 bottles a year.

Another big glass manufacturing company called the Far Eastern Glass Manufacturing Company with a capital of 1,500,000 yen is to be organized. The new company is to be controlled by a group of Osaka merchants connected with the Osaka Shosen Kaisha, the Osaka Iron Works, and kindred concerns. The maximum capacity of the new company's factories is to be 40,000 cases a year. Already contracts have been arranged with many cotton mills, railway companies, and other business concerns for the major portion of the output.

## BUILDINGS

**Foochow Y.M.C.A. and Hospital.**—A new building for the accommodation of the Chinese Young Men's Christian Association was completed in 1915. It stands on the left bank of the river, near the bridge-head, and has all the improvements that such buildings have in America: business rooms, teaching and lodging accommodation, its own electrical plant, swimming bath, recreation rooms, etc., and an efficient staff, foreign and Chinese. It is a large red-brick and stone edifice built at a cost of $150,000.

A new hospital for women was opened, built at a cost of $60,000, with 150 beds. It has all the latest fittings of a first-class hospital, and a training school for nurses is attached. The Foochow Native Hospital increased its accommodation by the erection of a "Rennie Memorial Wing." The late Dr. Rennie was honorary physician and surgeon for a generation. The Bank of Taiwan rebuilt its premises on the bund, at a cost of about $30,000. A factory for drying egg yolk and albumen started work but soon stopped.

**Amoy's Building Activity.**—There has been considerable building activity both on Amoy Island and Kulangsu. A new building for the Bank of Taiwan, next to the Customs House, has recently been completed and is a distinct improvement on the usual type of structure in this region. On Kulangsu, unfortunately, there is a marked tendency towards overcrowding, and it is to be feared that in a few years' time residence on the island will have lost its former charm.

**Kongmoon Building Operations.**—During the year seven new Chinese houses were built a short distance away from the Custom House, and a large, two-storied foreign building about 500 yards south of the Customs premises has just been finished by the Standard Oil Company, of New York, to serve as residence and offices for its representatives. About 30 Chinese houses are in course of construction near the railway wharf, as well as a large school-house for the Canadian Mission inside the Mission's compound. At the Kongmoon city the new Native Custom House is nearing its completion.

## INDUSTRIAL

**Kongmoon Silk Filature.**—The only steam silk filature there, owned by a Chinese named Lu Chienchu, had a fairly good season. The daily output was about 80 catties, and the price ranged from $800 to $1,200 per picul. The business transactions amounted to over $250,000. Most of the silk is sold to the foreign firms at Canton and partly reshipped to Japan.

The Kongmoon Paper Factory continues to make good progress, and an improvement in the quality of the paper is noticeable in the year's products. Also the Electric Light Company in Kongmoon town seems to have done good business.

**Canton Cement and Tile Factory.**—The Canton Cement Works produced about 145,000 casks of cement during the year, of which several thousand casks were exported to foreign countries and the remainder was divided between Hongkong and local demands. The turnout in 1915 is said to have increased 10 per cent. over that of the previous year. Recently one and a half working hours have been added to the daily schedule. Since June the cement works have manufactured a new species of decorated tile, of which more than 3,000 pieces are made each month.

The Canton Brick Factory has enjoyed a profitable year consequent upon the collapse of numerous houses and shops during the flood in July: and demand has always been largely in excess of supply. The price has consequently been forced up from $85 per 10,000 to $165 per 10,000. The Canton Paper Factory has done a fairly good business during the year; but besides supplying the government departments, it sells only a small stock for local consumption. Owing to the limited capacity of the plant, the factory has been unable to make any striking progress.

**Canton Waterworks Extensions.**—The Canton Waterworks has made further progress during the year. To the list of water consumers, 1,369 houses have been added, and 36 main and 9,678 minor pipes have been laid during the year. The output of water is 537,600 gallons per day, and this quantity is considered sufficient to meet the public needs. No extension was made for supplying water to outlying places, except to barracks in the eastern suburb. After defraying all expenses, a net dividend of 8 per cent. was declared for 1915. It is probably worthy of mention that the Canton government, in consequence of the impoverished condition of the treasury, sold all its shares to merchants in October, and that in consequence the company is now entirely under a commercial management.

**Canton Industrial Bazaar.**—A noteworthy event was the opening, in December, of the Canton Local Industrial Bazaar situated on the Bund. It is the first of its kind ever seen in Canton. In the face of the adverse conditions of the year and the general stagnation of business, it has not experienced a very profitable commencement, but it is stated to have good prospects for a prosperous future.

**Pakhoi Pig Production.**—Pigs, for which these parts have long been famous, form an important item on the list of exports. They are fattened here at a comparatively small cost, and in Hongkong there is a constant demand for them. They have been exported in increasing quantities for some years past, and during 1915 some 18,500 head, valued at Hk. Tls. 134,945, were shipped for Hongkong.

**Shanghai Lamp Contract.**—The General Electric Co. of China Ltd., has secured the contracts this year, in open tender, from the Municipal Councils of both the French and International Settlements for a year's supply of Osram half watt type electric lamps for street lighting throughout the Settlements. Osram lamps are of British make in the Company's own factory at Hammersmith.

**Japan's Machinery Outlook.**—Officials of the Mitsui Bussan Kaisha are quoted as saying that the exports of machinery soon will figure prominently in Japan's trade returns, partly because Japan's machine-making industry has lately achieved a striking development, and partly on account of the influence of the war on Europe's trade activities in the east.

Equipments for underwear factories including knitting machines which have so far been supplied either by Germany or America, are now being supplied by Japan. Spindles and linters are also sent by Japan to cotton mills in Shanghai and elsewhere. Cotton spindles and looms are exported to South China, British India, and the South Sea Islands. Australasia also is sending inquiries to Japanese machine shops. Accordingly, the market for Japanese machines is wide enough even at present, as the production has not kept pace with the increasing demand.

**Swatow's New Industries.**—The new industries that have been established in the district during the year are the Hsing Le Cotton Weaving Company, with a capital of $200,000, two companies—the Liang Fung and the Lee Cheong—for the manufacture of soap, and a number of small Chinese factories for the manufacture of iron pans with ore from the locality. The Electric Light Company at Swatow is now doing well, having been able to wipe off one-third of the losses incurred since its establishment—now six years. The Jinricsha Company, with its 400 vehicles running in the limited thoroughfares of Swatow, has made a profit of $10,000. A large modern theatre, capable of accommodating about 2,000 spectators, was added to the already numerous places of amusement. The Waterworks Company has not been able to work to its full capacity but is making good progress.

**Industrial Progress of Swatow.**—The American Consul in his report on the trade of Swatow for 1915 writes:—

A new cotton-weaving company, with a capital of $200,000 Mexican and a soap factory were established. Native handloom factories, which manufacture a cloth known as cotton stripe, did well, as the cloth is cheap and durable and the output is not great enough to meet the demand locally and among the Chinese in Siam and the Straits Settlements. The hand looms used in these factories were imported from Japan. The resumption of emigration to Siam, the Straits Settlements, and the Dutch East Indies stimulated the export of native produce, and thus improved local business conditions.

**Japan's Factory Law Hits Many.**—In connection with the promulgation of the Regulations for the enforcement of the Factory Law, the Department of Agriculture and Commerce has announced that the number of factories and workmen which the Factory Law covers are as follows:

| | No. of factories | No. of Workpeople |
|---|---|---|
| Dyeing and weaving factories | 13,249 | 507,587 |
| Machinery factories | 3,134 | 98,619 |
| Chemical factories | 3,225 | 93,423 |
| Food and drinks factories | 5,688 | 77,645 |
| Miscellaneous factories | 6,130 | 101,479 |
| Special factories | 129 | 9,552 |
| | 37,077 | 948,265 |

There are besides 47,597 male manual laborers, and 21,751 female manual laborers in Japan. The factory workpeople, according to sex may be classified as follows:

| | Male. | Female. |
|---|---|---|
| Dyeing and weaving | 81,106 | 486,481 |
| Machinery | 94,171 | 4,448 |
| Chemical | 63,627 | 29,796 |

| | | |
|---|---|---|
| Food and drinks | 64,621 | 12,984 |
| Miscellaneous | 71,148 | 30,331 |
| Special | 9,284 | 208 |
| Total | 383,957 | 504,308 |

They are also classified according to age as follows:

| | Male. | Female. |
|---|---|---|
| Under 12 years of age | 1,039 | 2,012 |
| 12—14 | 9,247 | 31,753 |
| 14—16 | 24,037 | 91,527 |
| 16—20 | 66,607 | 201,924 |
| Above 20 | 382,127 | 253,092 |

Three hundred and ninety-nine factories in Yokohama and Kanagawa prefecture were affected September 1 by the new factory regulations. The children who may be employed under the age of 10 years is limited to 32 factories. The details which must be changed include the limit of working hours, the restriction of holidays and resting hours, the method of relief work for workmen, the saving system of workmen, and the restriction of employing children 10 years of age. The hours of laborers are twelve hours a day, but they may be extended to fourteen hours in silk weaving and knitting factories.

**U. S. Lumber to Orient.**—Pacific Coast export lumber shipments for June totaled 22,513,387 feet, not including parcel shipments, according to figures issued by the West Coast Lumbermen's Association.

Fir figured in this to the extent of 18,026,135 feet and redwood 4,487,252 feet. In normal times with easy delivery at average rates, fir exports for June would average better than 67,000,000 feet.

The distribution of the June export cargoes as announced by the West Coast Association follows: United Kingdom, 6,007,202 feet; Australia, 7,853,270 feet; West Coast South America, 3,852,992 feet; China, 1,811,375 feet; Japan, 734,354 feet; Mexico, 441,504 feet; New Zealand, 625,585 feet; South Sea Islands, 239,050 feet; Sweden, 47,446 feet. Total, 22,513,387 feet.

**Hongkong Needs Carbonic Acid Gas.**—Before the outbreak of the present European war practically all of the carbonic acid gas used in Hongkong, other han that produced locally by a manufacturer of aerated waters, was imported from Germany, and since then dealers have fortunately been able to replenish their stocks from Manila. This latter source, however, has temporarily failed, and many inquiries for American gas are now being received by the Hongkong Consulate General. The local demand approximates 100 cylinders a year—a trade not large in itself, but important as opening up another line of American products in Hongkong.

**Japan Woolens for Russia.**—The Clothing Depot of the Imperial Japanese Army, upon receipt of an order from Russia for 3,000,000 yards of woolen cloth for military use valued at Y20,000,000, summoned some manufacturers of Osaka to Tokyo to confer with them. The manufacturers offered to execute the order to the extent of 2,500,000 yards for delivery by May next year.

**U. S. Autos in Singapore.**—Judging from the number of locally registered cars in Singapore, taken from a list published a few months ago, more money has been expended by Singapore people on the purchase of British cars than on foreign cars. There were 88 Fords, 69 Wolseleys, 47 Hupmobiles, 31 Stars 22 Daimlers, 22 Overlands, 21 Napiers, 20 B.S.A., 14 Rovers, 13 Arrol Johnstons, 12 Vulcans, and a number of other makes mostly running to single figures only.

But the continual inflow of American cars and the cessation of imports from England will make a considerable difference in these figures by the end of the current year.

**Japan's Cotton Mill Industry.**—The spinning mill industry is the most prominent of the industries of Japan. The number of spinning mill companies is now thirty-six with a total capital invested of over 86,000,000 *yen*. The number of spindles at work, according to the investigation made at the middle of June, was 2,763,000. The workmen employed in the mills number 23,590 males and 99,760 females, a total of 123,350. The output of yarns averages 160,000 bales a month.

Compared with conditions in 1906, ten years ago, there has been striking progress made, as may be seen from the following table:—

| | First half of 1906 Yen | First half of 1916 Yen |
|---|---|---|
| Number of companies | 48 | 36 |
| Paid-up capital | 50,932,238 | 86,011,677 |
| Number of spindles | 1,483,497 | 2,763,000 |
| Number of workmen and workwomen | 79,881 | 123,350 |
| | Bales | Bales |
| Monthly output | 85,000 | 160,000 |

It will be observed that the number of spindles and the output have been doubled in ten years. The number of laborers has not made a corresponding increase, and this shows the increasing efficiency of the labor. The striking feature is that the number of companies has decreased from 48 to 36 and this shows the tendency toward amalgamation.

One thing which cannot be overlooked is that there is a strong tendency toward the increase of spindles and capital by various mills, and it is expected that at the end of this year there will be a further remarkable increase in these respects. It is planned that the number of spindles shall reach 900,000 by the end of the year, but since the importation of machinery is now difficult, it will probably be a year before those plans can be completed.

From a world viewpoint, Japan's spinning mill industry is still insignificant. The number of spindles at work last year was 138,917,-969, and Japan's share was only a little over 2 per cent. Compared with the figures for England, which are about 57,000,000 spindles, Japan uses only about 5 per cent as many. This state of things is disheartening in some ways but in others it creates an impression that there is much room for progress, and it is a fact that the mill men are bent upon increasing their plants. Japanese manufacturers must look for a more promising field as an outlet for the goods produced. All mill men are agreed that Japan has to sell more to China and other countries in the South. The following is the list of exports of cotton yarns in the first half of this year to various destinations compared with those in the first of 1906:

| | First half of 1906 Yen | First half of 1916 Yen |
|---|---|---|
| China | 2,517,000 | 6,923,000 |
| Kwantung leased territory | — | 144,000 |
| Chosen | 295,000 | 108,000 |
| Hongkong | 132,000 | 661,000 |
| India | 10,000 | 214,000 |
| Philippines | 110,000 | 33,000 |
| Others | 2,000 | 22,000 |
| Total | 3,078,000 | 8,197,000 |

The exports to China have been more than doubled in ten years, the exports to Hongkong have become five times as large and to India twenty times as large as ten years ago.

**Paper Industry of Japan.**—Three leading business men, Baron Shibusawa, Mr. H. Ogawa, and Mr. K. Makoshi are promoting a paper mill project for the Hokkaido. The new company will be styled the Kushiro Paper Manufacturing Company, of Toritori, Hokkaido, and will instal paper making machines made in Japan which will be completed by June, 1918. A water power station is planned by the company at Lake Oakan to drive the mill. The capital of the new concern will be Y5,000,000 and it is proposed to produce 2,500,000 lbs. of Chinese paper a month and common news. Three 110-inch machines will be used, with Ogawa cylinders.

During the last few months great quantities of pulp were imported into Japan. As the best season is approaching prices are stiffening. Fine unbleached sulphur pulp, which has been as low as 3 sen 2 rin is now quoted at 10 sen the lb. Foreign quotations are high, unbleached fine grades quoted at 13-14 sen free at Yokohama.

The Jiji states that the Oji and Fuji Paper Mills and the Nagai Shoten have been in negotiation with Russian traders for the sale of various qualities of foreign paper. The quantity required by the Russians is stated to be 25 million lbs. and the value Y4,000,000. At one time an agreement seemed likely, but the terms of payment offered by the Russians are not acceptable.

**Chinese Paper Mill for Harbin.**—An enterprising Chinese merchant, Mr. Wu, of Harbin, believing that the establishment of a paper mill there would stop the import of foreign paper, which runs up to a considerable amount annually, has organized a company on a capital of S. Y100,000, to engage in the manufacture of paper for journalistic and Government use. The necessary machinery has been bought in Shanghai. It is said that the Company has secured the exclusive concession for manufacturing paper for a term of ten years.

**Japanese Paper to Australia.**—It was recently reported that two leading newspaper houses in Australia had placed an order with Japanese mills for a large amount of printing paper. Now it is learned that the Fuji Paper Mill has signed a contract for shipment of 250 tons, or 560,000 pounds. The amount is not large, but it is noteworthy that it is the first instance that Japanese printing paper has been ordered from Australia. The price is said to be far higher than the quotations in the home market. Negotiations are being made for subsequent shipment of 200 tons a month for five months, beginning in October.

**Japanese Matches Sold in America.**—The war has made the prospect for Japanese matches in the United States better. The consumption in the southern part of California, for instance, has for years been divided between the products of the Diamond Company, more than 40 per cent; the Swedish and Norwegian matches, over 40 per cent, and Japanese goods, a little over 10 per cent. Since the war began, however, the supply of Swedish and Norwegian matches has practically been stopped, and American and Japanese goods alone are now being consumed. American and Japanese matches filled the gap in the proportion of 25 per cent to the Diamond Match Co. and 75 per cent to the Japanese. It is reported that the Diamond Match Company is now contemplating placing plants in China where the cheaper materials can be had and where wages are low, so that the company may not only command a large market in China, but also supply the cheaper goods to the United States if possible.

**General Electric Sues Japanese Co.**—Seeking protection for its patent on a certain type of tungsten lamp and damages to the extent of 100,000 yen, the General Electric Company of New York, represented by Mr. J. R. Geary of Yokohama, has filed suit in the Tokyo District Court against the Nippon Electric Lamp Company.

The General Electric alleges that the Nippon Company has infringed its patent on a type of tungsten lamp, invented by one of the company's employees and registered in Japan. Recently, it is alleged, the defendant company has been manufacturing and selling lamps similar to the General Electric Company's tungsten lamp without the consent of the plaintiff.

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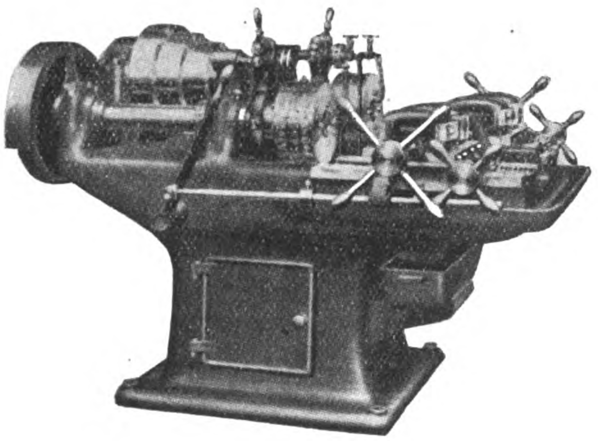

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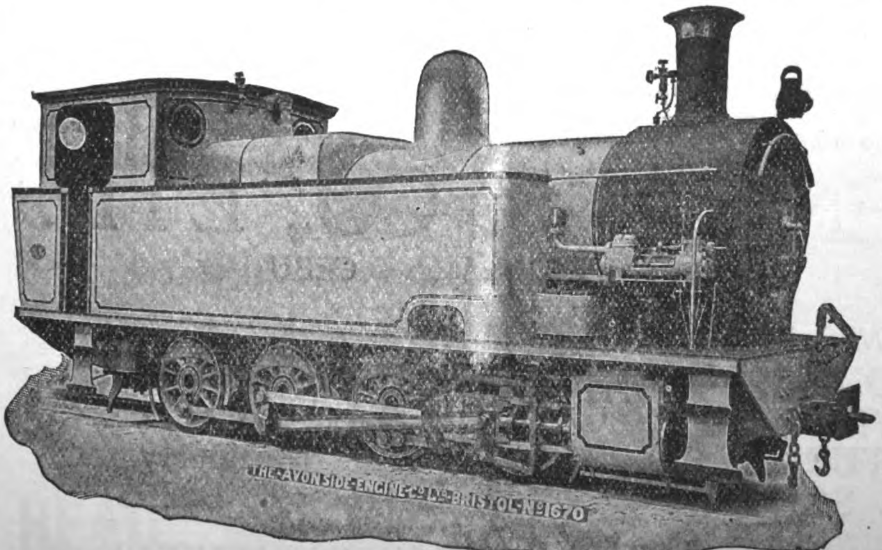


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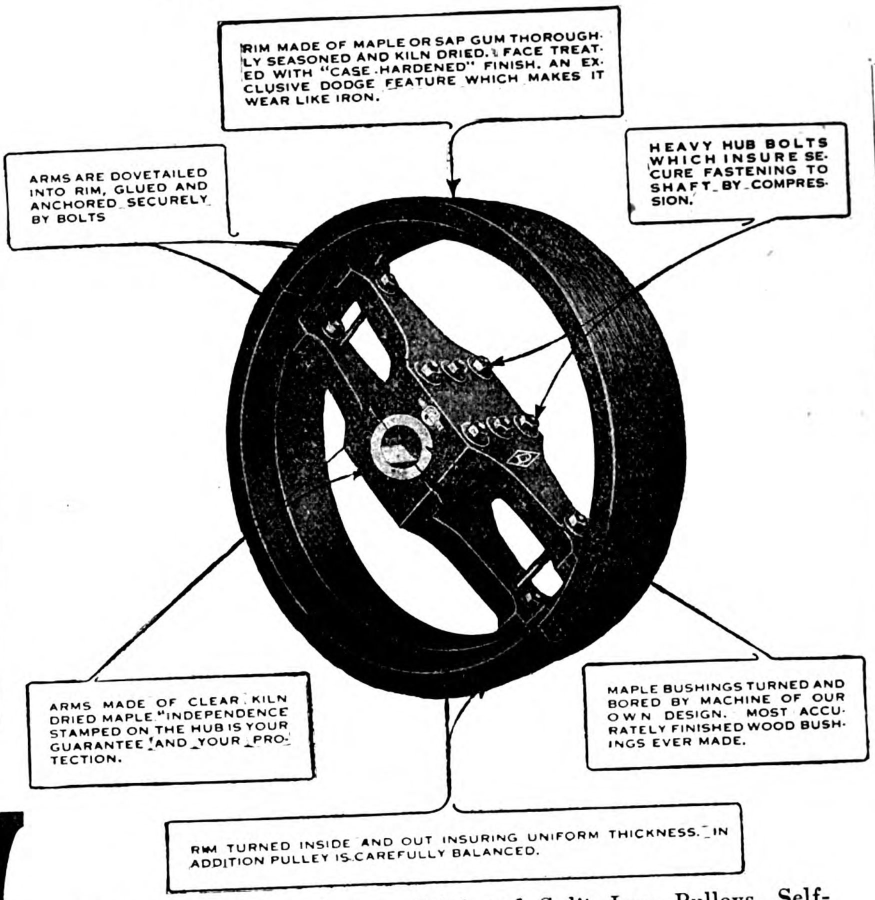


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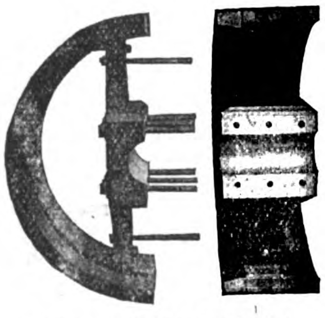

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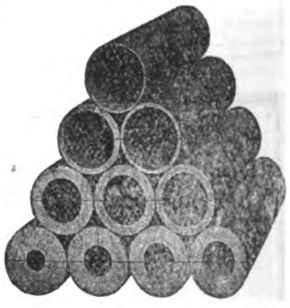

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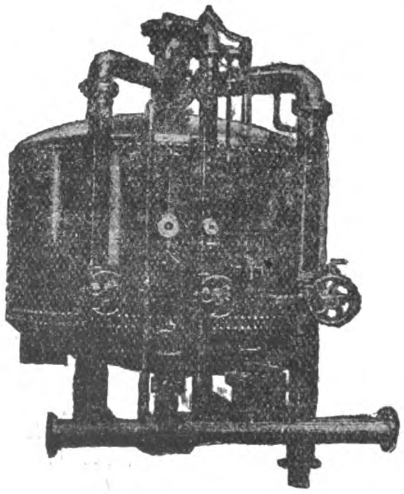

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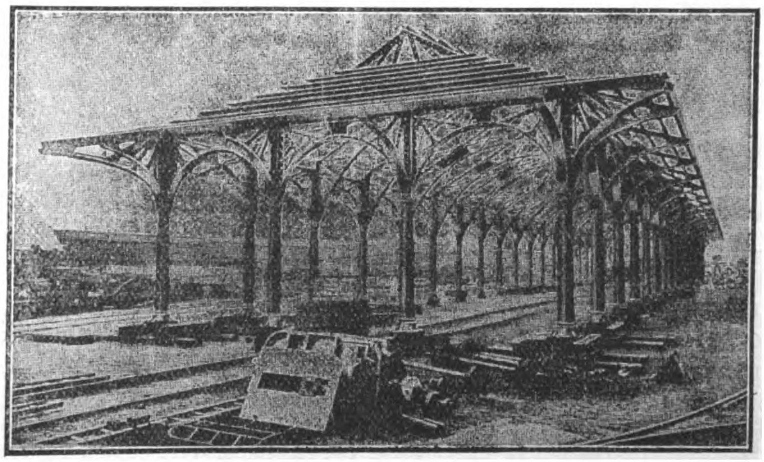

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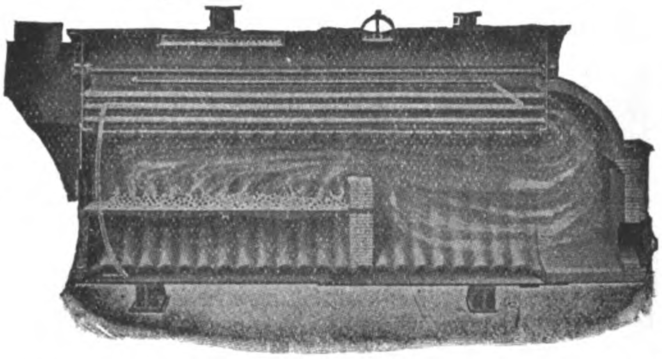

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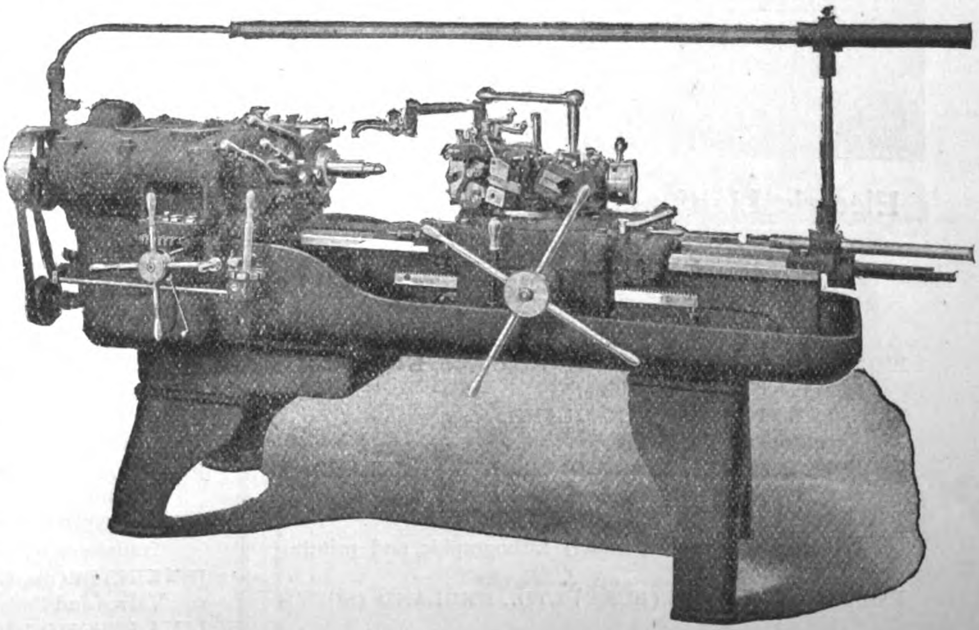

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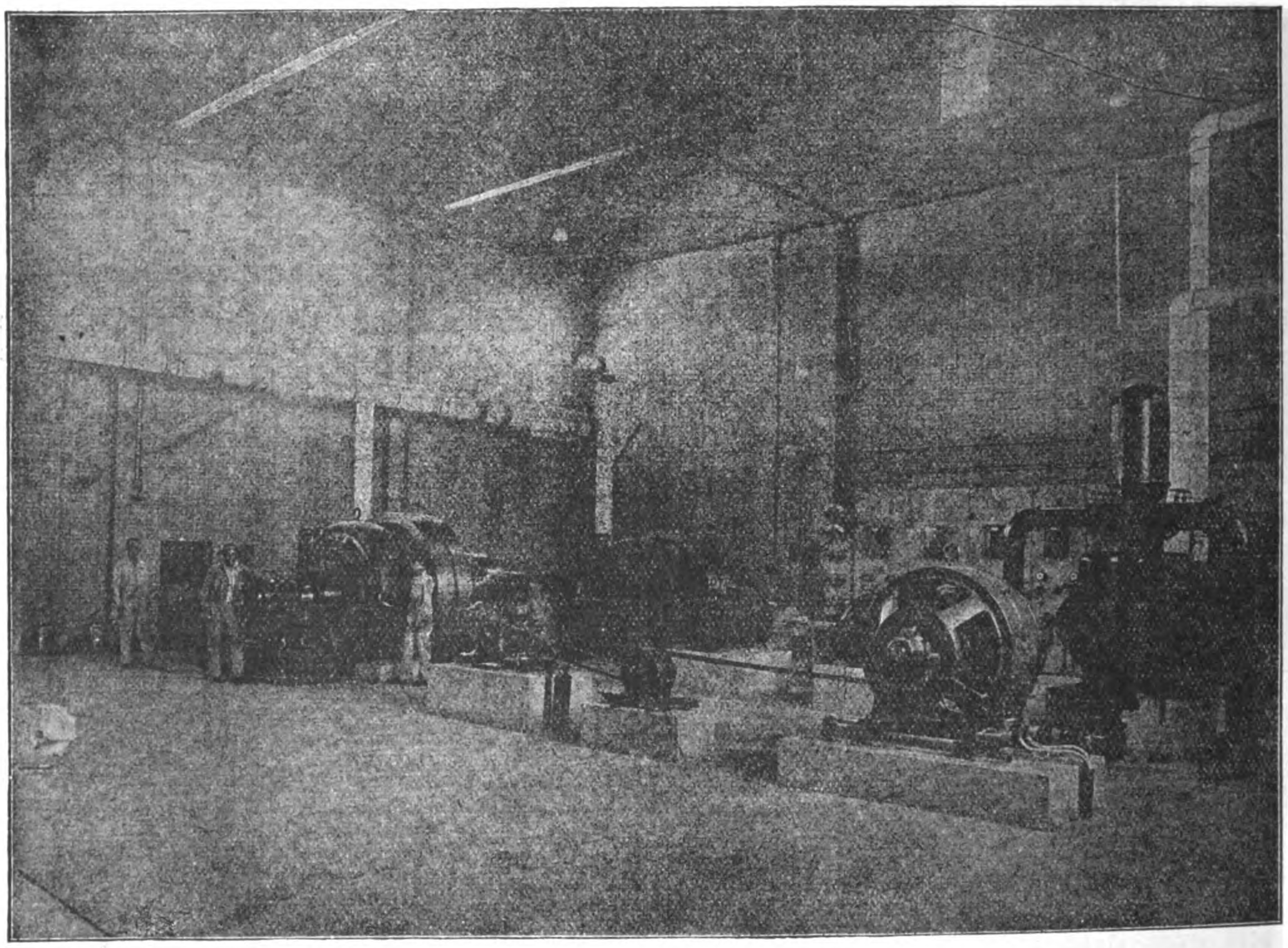

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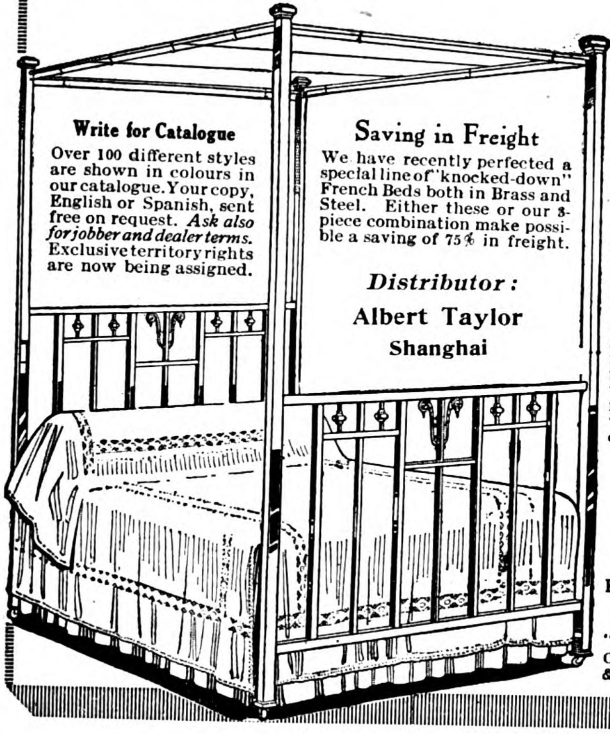

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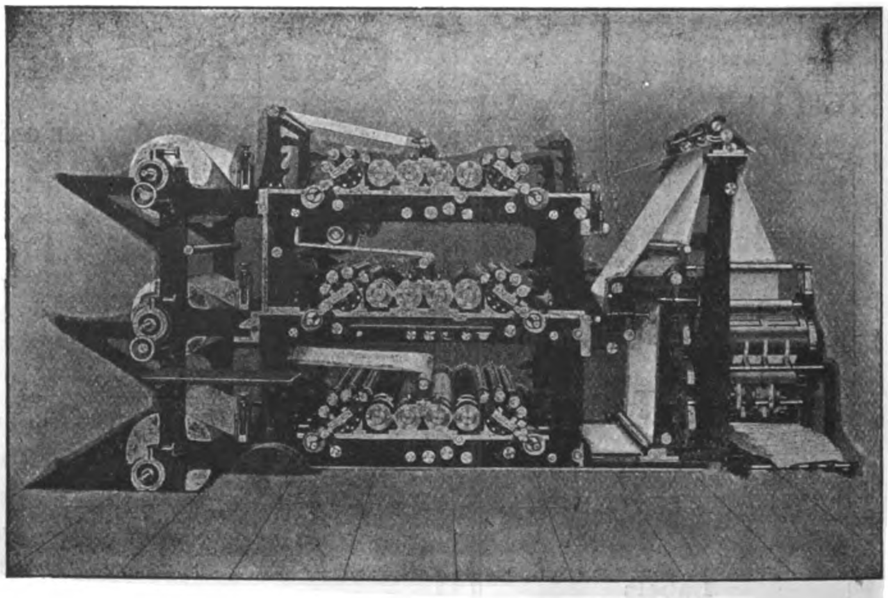

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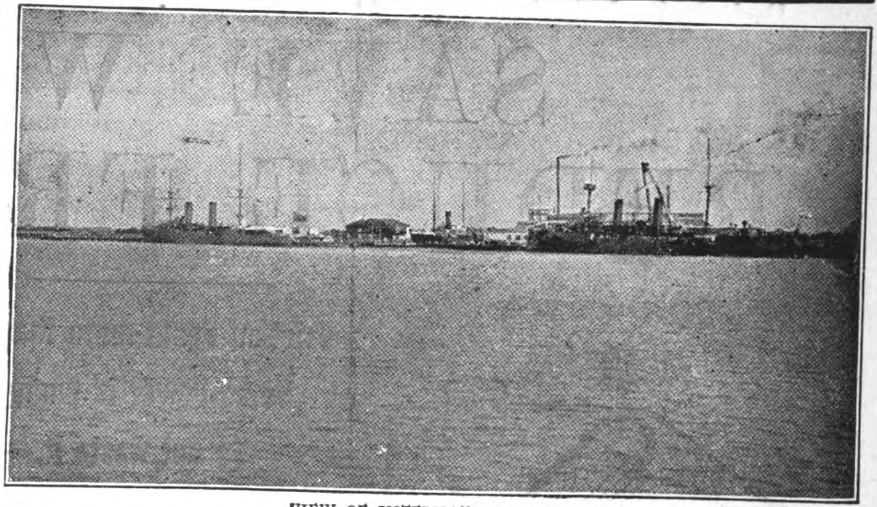

VIEW OF INTERNATIONAL DOCK
showing "M. S. Dollar" in Dock and the Chinese Cruisers "Hai Chi" and "Hai Yung" alongside Dock Co's. Wharf.

## Boilermakers, Dock Proprietors, Shipbuilders, Engineers and Electricians

FIFTEEN REVENUE CRUISERS BUILT FOR THE QUARTERMASTER'S DEPARTMENT U. S. ARMY—MANILA, P. I.

**The Model was exhibited at St. Louis Exposition and awarded the Gold Medal in 1904**

The Sea-going Salvage-vessel "General Weeks" 148 feet long Built for the same Department, in 1910

**Low Pressure Hot Water and Steam Heating Installations**

The Docks are five in number, ranging in length from 355 feet to 532 feet on the Blocks, and breadth of entrance from 53 feet to 77 feet, with a depth of water on the sill of from 16 feet to 24 feet.

The Dock charges are the most moderate in the Far East

The Company's Yards and Docks cover 96 acres. The Water Frontage is about 1½ miles in length. Wharves and Pontoons are arranged where steamers can moor during repairs; and slips for hauling up small vessels are provided. Sheer legs capable of lifting 65 tons are placed at the various Docks.

The extensive Shipbuilding yards and workshops, lit by Electric Light, are provided with the latest improvements, such as traveling cranes of 60 tons' capacity, hydraulic and pneumatic machinery and tools.

Light railway lines are laid throughout workshops and yards.

A Staff of Divers, and powerful salvage appliances, and Floating Cranes ready for any emergency at short notice. Enquiries immediately attended to.

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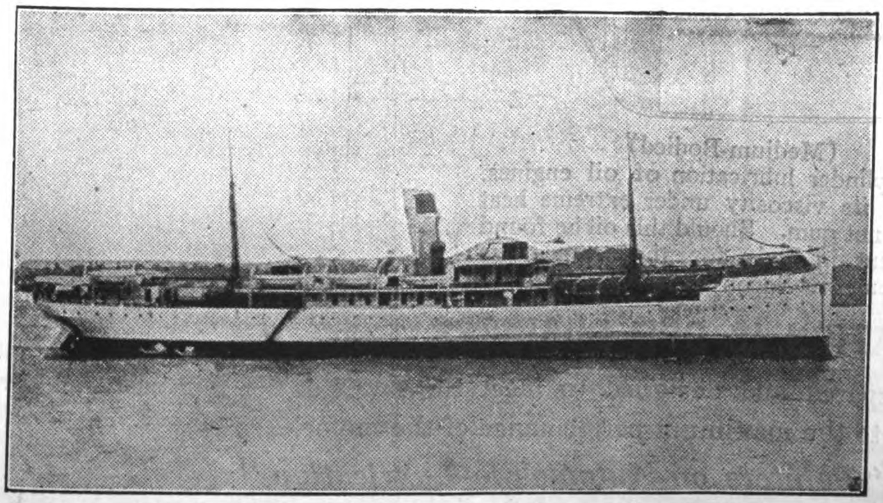

U. S. ARMY TRANSPORT "MERRITT" 300' 0" × 45' 0" × 28' 3"
Built for United States Government in 1912.

**PARTICULARS OF DOCKS**

Able to accommodate any vessel that can reach Shanghai

| Names | Length on Blocks | High Water | |
|---|---|---|---|
| | | Breadth of Entrance | Depth of water on Sill |
| Cosmopolitan Dock | 532 feet | 77 feet | 24 feet |
| International Dock | 528 " | 77 " | 23 " |
| New Dock . . . | 450 " | 74 " | 21 " |
| Old Dock . . . | 399 " | 53 " | 16 " |
| Tunkadoo Dock . | 350 " | 67 " | 16 " |

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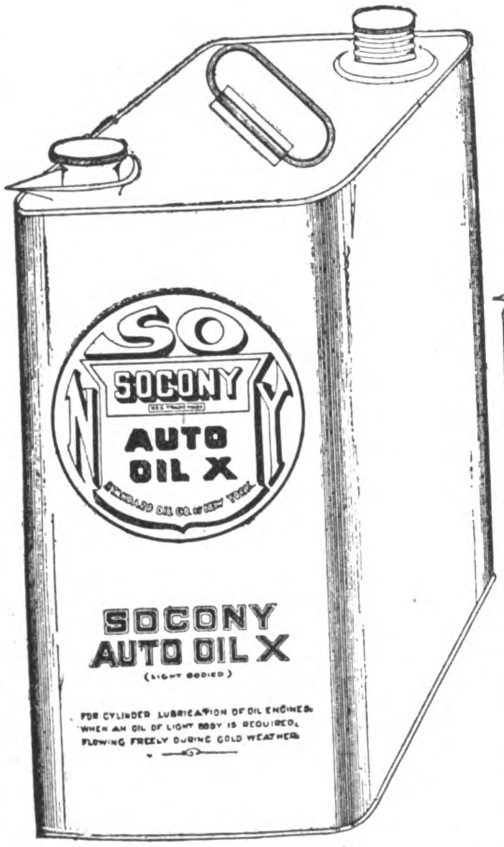
**Friction costs more than oil.**

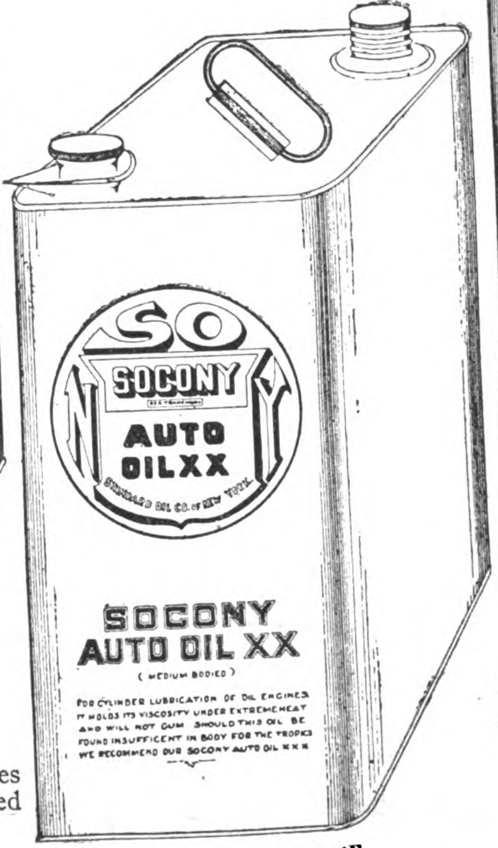
**Horse-Power is Energy.**

**Do not waste it.**




(Light Bodied)

For cylinder lubrication of oil engines when an oil of light body is required flowing freely during cold weather,




(Medium Bodied)

For cylinder lubrication of oil engines. It holds its viscosity under extreme heat and will not gum. Should this oil be found insufficient in body for the tropics we recommend our Socony Auto Oil XXX.

(Extra Bodied)

For cylinder lubrication of oil engines. To be used in the tropics when Socony Auto Oil XX is insufficient in body.

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Socony Oils are scientifically prepared and designed to meet the needs of the Motorist. They afford the degree of lubrication necessary to the maximum performance of the motor.

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**BRANCHES IN ALL PRINCIPAL CITIES IN CHINA.**

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HONGKONG

Telegraphic Address: Manifesto Hongkong

Dock Owners, Ship Builders, Marine and Land Engineers, Boiler Makers, Iron and Brass Founders, Forge Masters, Electricians.

All classes of CONSTRUCTIONAL and GENERAL ENGINEERING WORK undertaken, also LOCOMOTIVES, RAILWAY ROLLING STOCK and PLANT, BRIDGES, etc.

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AUXILIARY MACHINERY for MARINE and LAND Purposes.

LAND and MARINE BOILERS of all sizes and classes.

GALVANIZING by the Electrical process.

IRON and BRASS CASTINGS of all descriptions.

FORGINGS in IRON and STEEL for SHIPS, ENGINES, and LAND WORK, large and small.

We make a specialty of HIGH SPEED MOTOR BOATS for PASSENGER and CARGO Traffic.

ALL CLASSES of COCKS, VALVES and FITTINGS in IRON and BRASS supplied.

BOLTS, NUTS and RIVETS MANUFACTURED at SHORT NOTICE.

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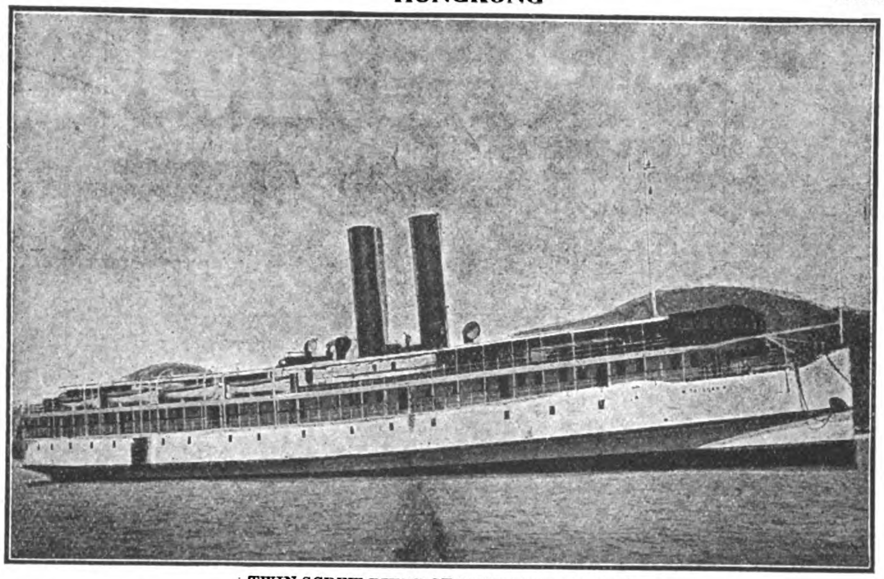
A LARGE STOCK of STEEL and IRON PLATES, BARS and ANGLES, always in hand.

The Company possesses SIX GRANITE DOCKS and TWO PATENT SLIPWAYS and these are equipped for EXPEDITIOUS WORK. Our plant is of the most modern type throughout.

Ship owners and Captains are assured that DOCKING and REPAIRS are carried out PROMPTLY and at MODERATE CHARGES.



TWIN SCREW RIVER STEAMER "TAI SHAN"
Length 290 ft. Breadth 53 ft. Depth 12 ft., fitted with Compound Surface Condensing Engines for a speed of 14.7 knots.
Built and engined complete by the HONGKONG & WHAMPOA DOCK CO., LTD. for the HONGKONG, CANTON & MACAO STEAMBOAT CO. LTD.

The Dimensions of Docks and Slips are as follows :—

| *Name of Dock or Slip* | *Length on Keel Blocks* | *Entrance Breadth* | *Depth Over Sill at Ordinary Spring Tides* | *Rise of Tide* | |
|---|---|---|---|---|---|
| | | | | *Springs* | *Neaps* |
| **KOWLOON** | *Feet* | *Feet* | *Feet* | *Feet* | *Feet* |
| No. 1 Dock, Kowloon . . . | 700 | 86 ft. top / 70 ft. bottom | 30′ | 7′ 6″ | 3 |
| No. 2 Dock, Kowloon . . . | 371 | 74′ | 18′ 6″ | 7′ 6″ | —— |
| No. 3 Dock, Kowloon . . . | 264 | 49′ 3″ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 1, Kowloon . | 240 | 60′ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 2, Kowloon . | 220 | 60′ | 12′ | 7′ 6″ | —— |
| **TAI-KOK-TSUI** | | | | | |
| Cosmopolitan Dock . . . . | 466 | 85′ 6″ | 20′ | 7′ 6″ | —— |
| **ABERDEEN** | | | | | |
| Hope Dock . . . . . . . | 430 | 84′ | 23′ | 7′ 6″ | —— |
| Lamont Dock . . . . . . | 333 | 64′ | 16′ | 7′ 6″ | —— |

Please Address Enquiries to the Chief Manager, R. M. DYER, B. Sc., M.I.N.A., Kowloon Dock, Hongkong.

Telephone No. 13 K. Head Office, Kowloon.

Town Office, Queen's Buildings Telephone No. 20, Hongkong

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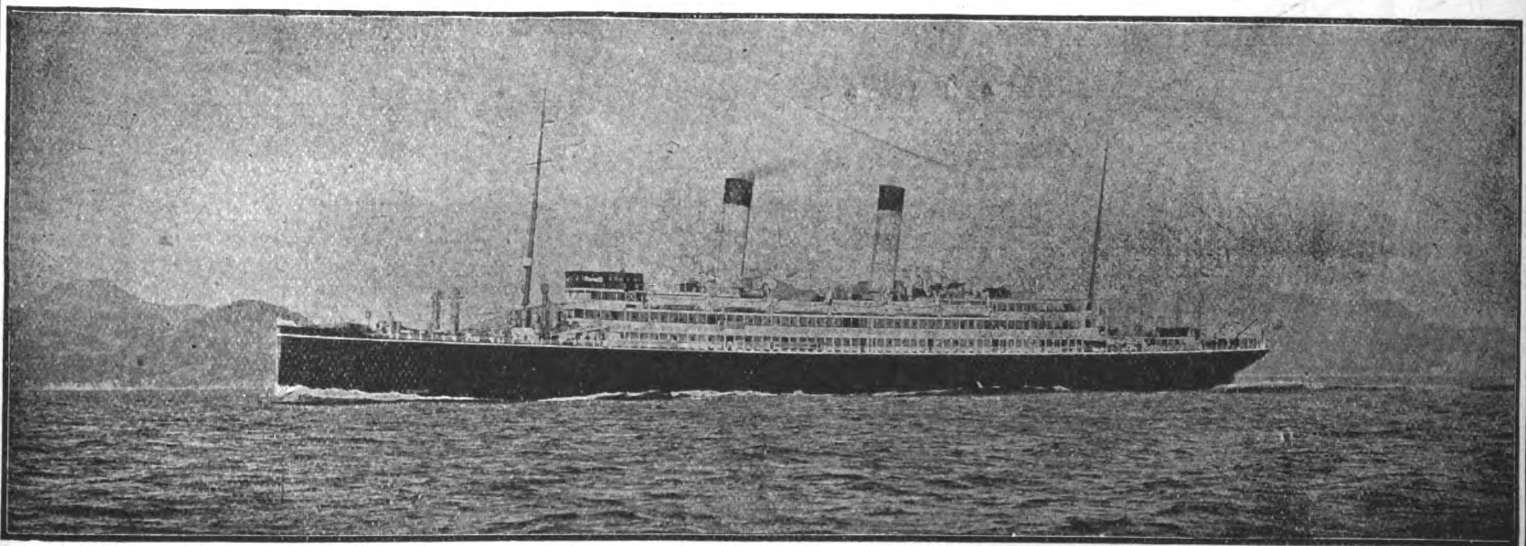

The "Tenyo Maru," built and engined by the Mitsu Bishi Dockyard & Engine Works, Nagasaki.

# MITSUBISHI DOCKYARDS & ENGINE WORKS, NAGASAKI

| DOCK No. 1. | | | DOCK No. 2. | | | DOCK No. 3. | | |
|---|---|---|---|---|---|---|---|---|
| Extreme Length . . . . | 523 | Ft. | Extreme Length . . . . . . | 371 | Ft. | Extreme Length . . . . . . | 722 | Ft. |
| Length on Blocks . . . . . | 513 | „ | Length on Blocks. . . . . . | 360 | „ | Length on Blocks . . . . . | 714 | „ |
| Width of Entrance on top . . | 88 | „ | Width of Entrance on top . . | 66 | „ | Width of Entrance, top . . | 99½ | „ |
| „ „ „ „ Bottom | 77 | „ | „ „ „ „ Bottom. | 53 | „ | „ „ „ Bottom. . | 88½ | „ |
| Water on Blocks at Spring Tide | 23½ | „ | Water on Blocks at Spring Tide | 22 | „ | Water on Blocks at Spring Tide | 34½ | „ |

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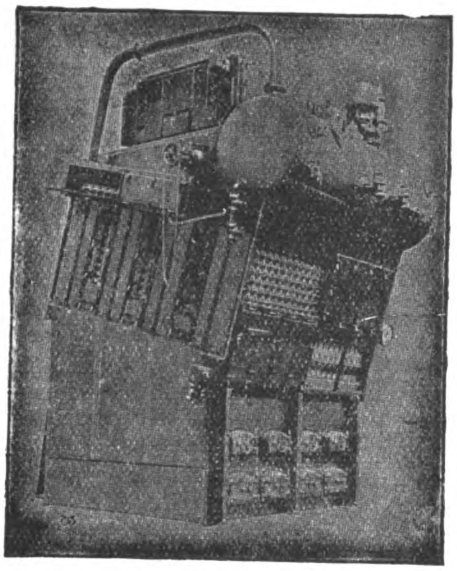
SUITABLE FOR ALL INDUSTRIES, AND FOR BURNING ANY KIND OF FUEL

**1100,0,000 H. P. Land-type For Stationary Purposes—2,500,000 H. P. Marine-type Afloat**



Babcock & Wilcox Marine Boiler

ADVANTAGES:

Simple in Design. Easy to Clean
Constructed of Wrought Steel. Rapid Steam Raiser
Economical in coal. Economical in Repairs
Very Durable. All Straight Tubes
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Rapid Circulation of Water
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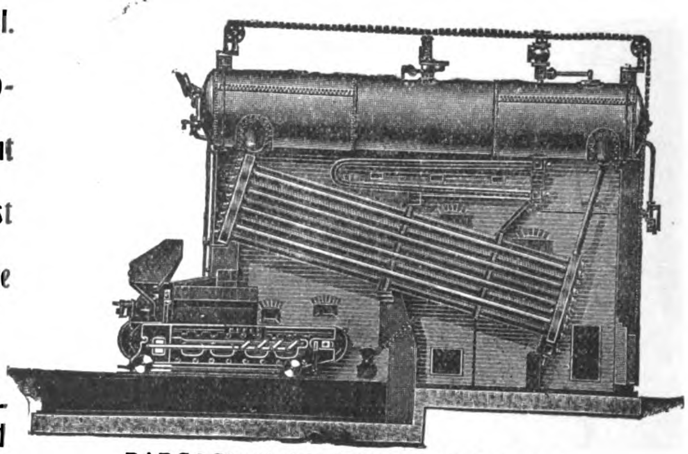
Installed in many large installations in China and Japan



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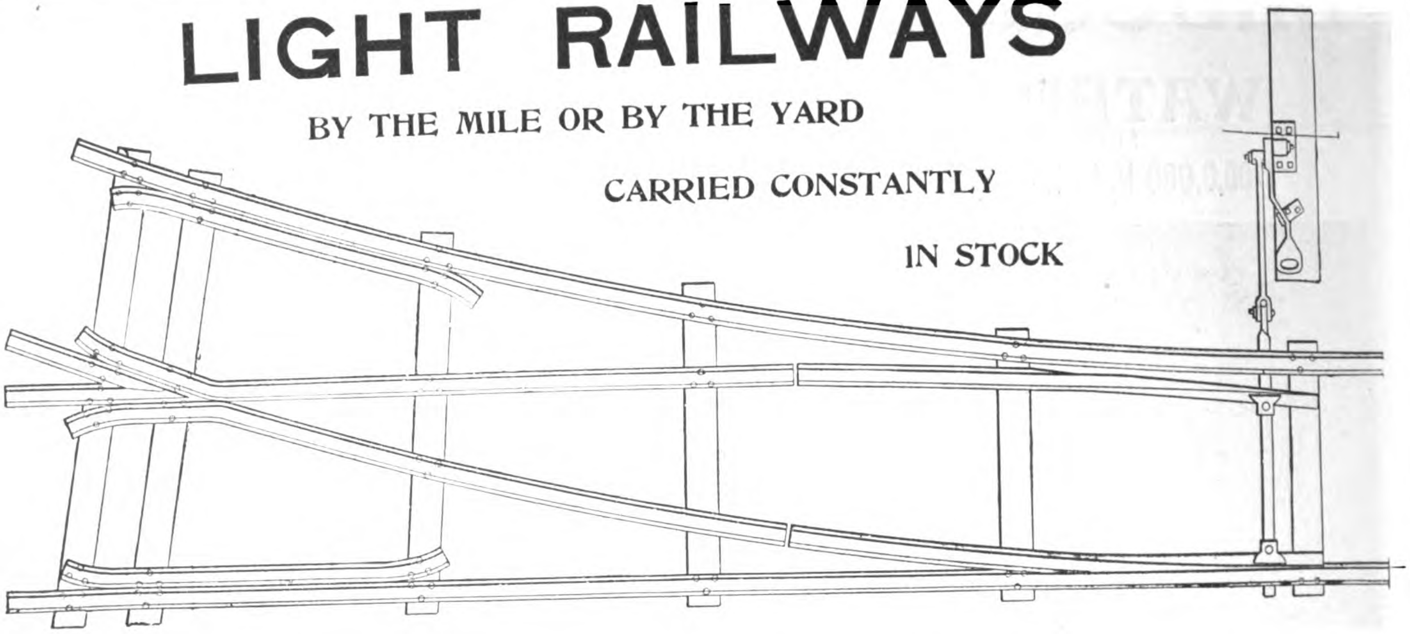

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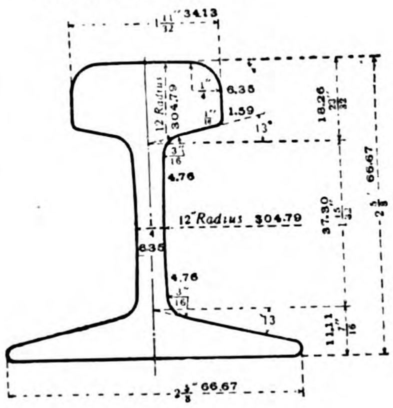
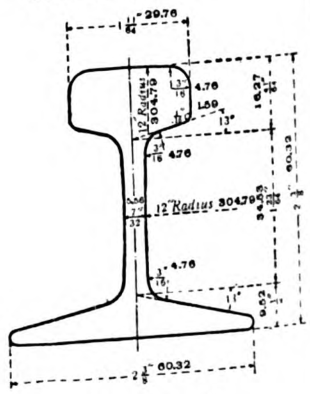


20 lbs. per yard.
9.92 kg. per meter.
31.43 gross tons per mile of single track.
19.84 tonnes per kilometer of single track.
168 ft. of single track per gross ton.
50.4 meters of single track per tonne.

**United States Steel Products Company**

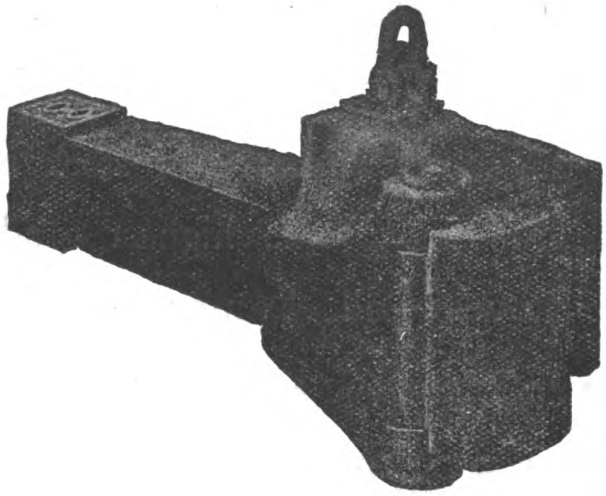
**Union Building, 4 The Bund, Shanghai.**

RAIL SECTION 1640



16 lbs. per yard.
7.94 kg. per meter.
25.14 gross tons of single track per mile.
15.88 tonnes per kilometer of single track.
210 ft. of single track per gross ton.
62.97 meters of single track par tonne.

# The JANNEY-PENN Coupler



THE latest development of the Janney type of M. C. B. Coupling originally introduced and promoted by this company. This coupler has all the simplicity of the early type of the Janney coupler, and also has the up-to-date features of a "Lock-to-the-Lock," "Lock-Set," and a "Knuckle-Opener," and complies fully with all the requirements and recommendations of the M.C.B. Association of the U.S.A.

***Lock-To-The-Lock***—The locking pin cannot climb, being held in the locked position by a trigger the lower end of which projects into a recess in the coupler head, thus preventing accidental uncoupling.

***Lock-Set***—Lock setting is accomplished by the locking block resting on a seat on the inside wall of the coupler head when raised to the uncoupling position, from which seat it is dislodged on the closing movement of the knuckle in the act of coupling.

***Knuckle-Opener***—The knuckle-opener pushes the knuckle open to the fullest range of movement from a fully closed position, or from any partially open position, and its path of movement is such as to insure easy and complete opening of the knuckle.

The lock has an extra large bearing surface in contact with the knuckle in the coupler, being approximately five square inches. No portion of the locking block extends beyond the bottom wall of the coupler.

This coupler has the desirable feature of easy accessibility of parts, thus facilitating the making of repairs.

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| Eagle | |

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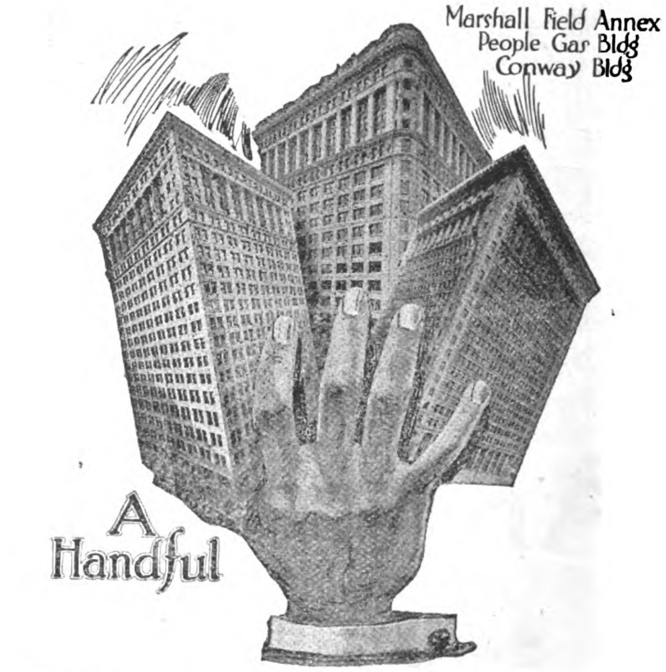


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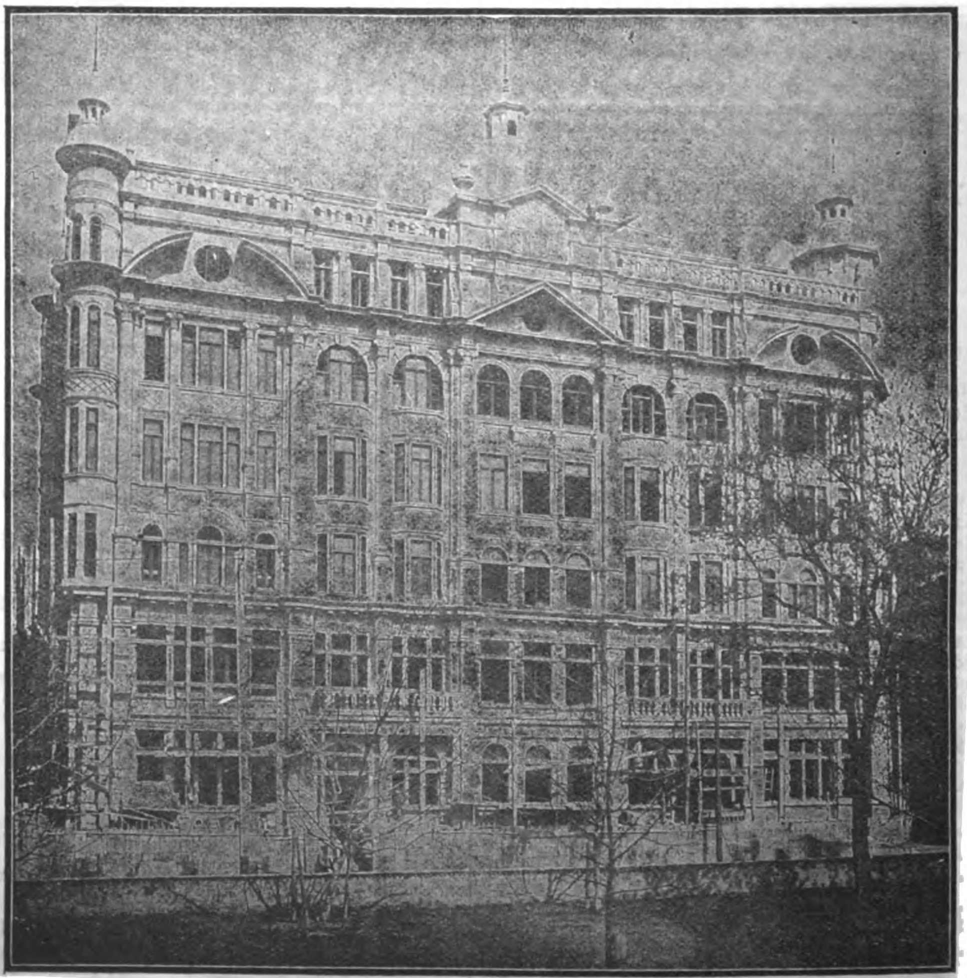

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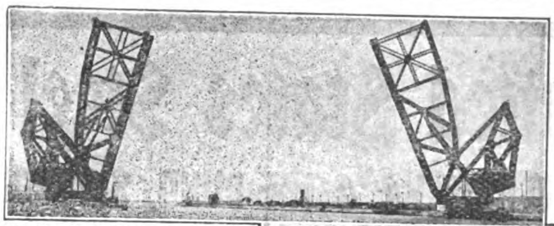
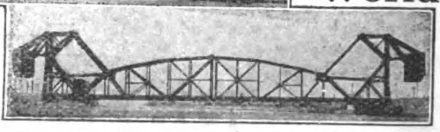


Longest Bascule Bridge in the World

Double Leaf Bascule Bridge, 336 ft. span across the ship canal at Sault Ste. Marie. This bridge was designed by Mr. Joseph B. Strauss, who invented the type of Bascule Bridge that it represents, as well as the unique features it embodies.



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**INSPECTIONS AND TESTS**—Satisfactory, durable service is insured by inspections and tests of "NATIONAL" Pipe throughout successive processes of manufacture.

**THREADING**—The uniform structure of "NATIONAL" Pipe insures clean-cut strong threads, which are easily cut with properly designed dies.

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**MARKING**—"NATIONAL" Pipe is marked with the name "NATIONAL." This is the consumers' guarantee of quality.

**COMPLETE LINE**—"NATIONAL" products embrace a complete line, and is the only line including double length pipe.

**NATIONAL SERVICE**—Informative, technical Bulletins and other literature are distributed free to those who can use them to advantage.

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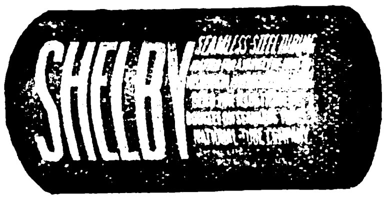


**CONTROL OF QUALITY**—"SHELBY" Seamless Tubing is made under the supervision of one organization, insuring uniform quality.

**SIZES AND SHAPES**—"SHELBY" Seamless Tubing is made in several hundred sizes and shapes—and special shapes and sizes to specification.

**MATERIAL**—"SHELBY"—Seamless Tubing is made from specially selected grades of open-hearth steel, and can be annealed to meet special requirements.

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**TESTS AND INSPECTIONS**—A rigid system of tests and inspections eliminate defective tubing at the mills.

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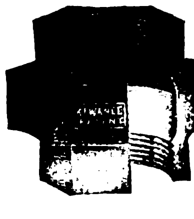

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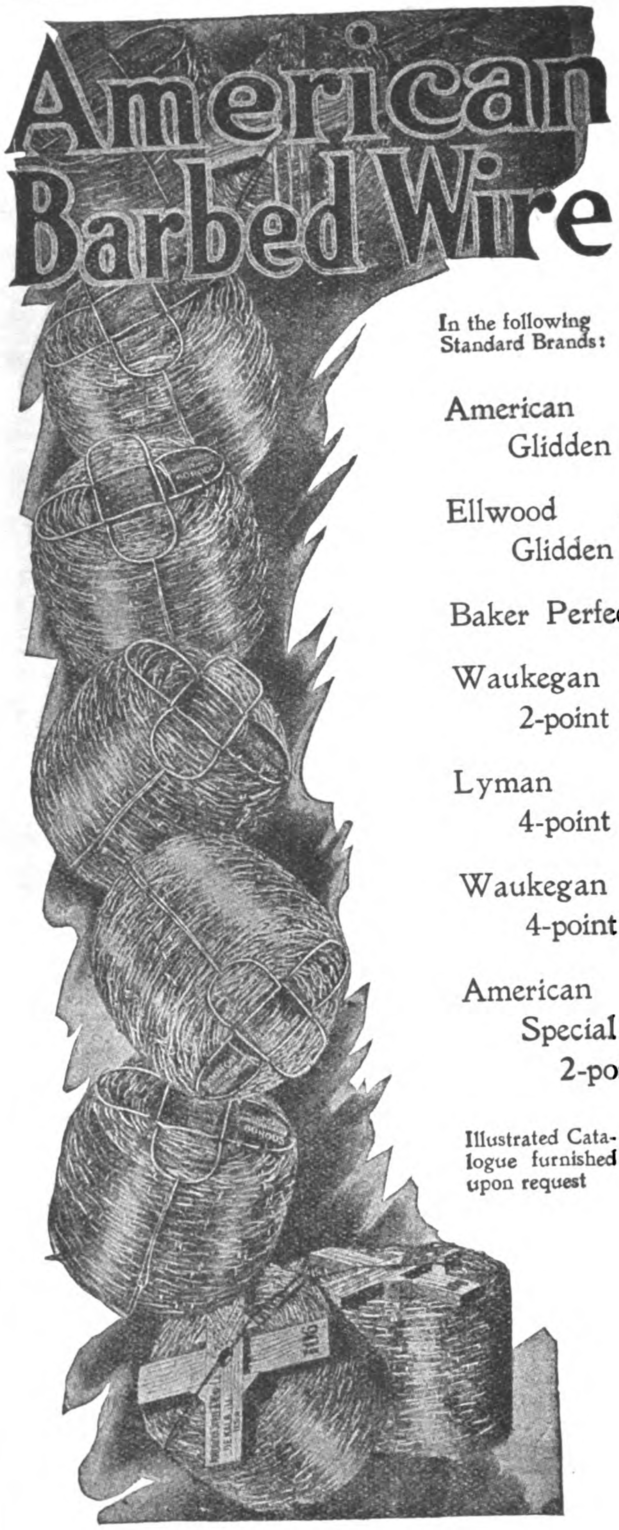


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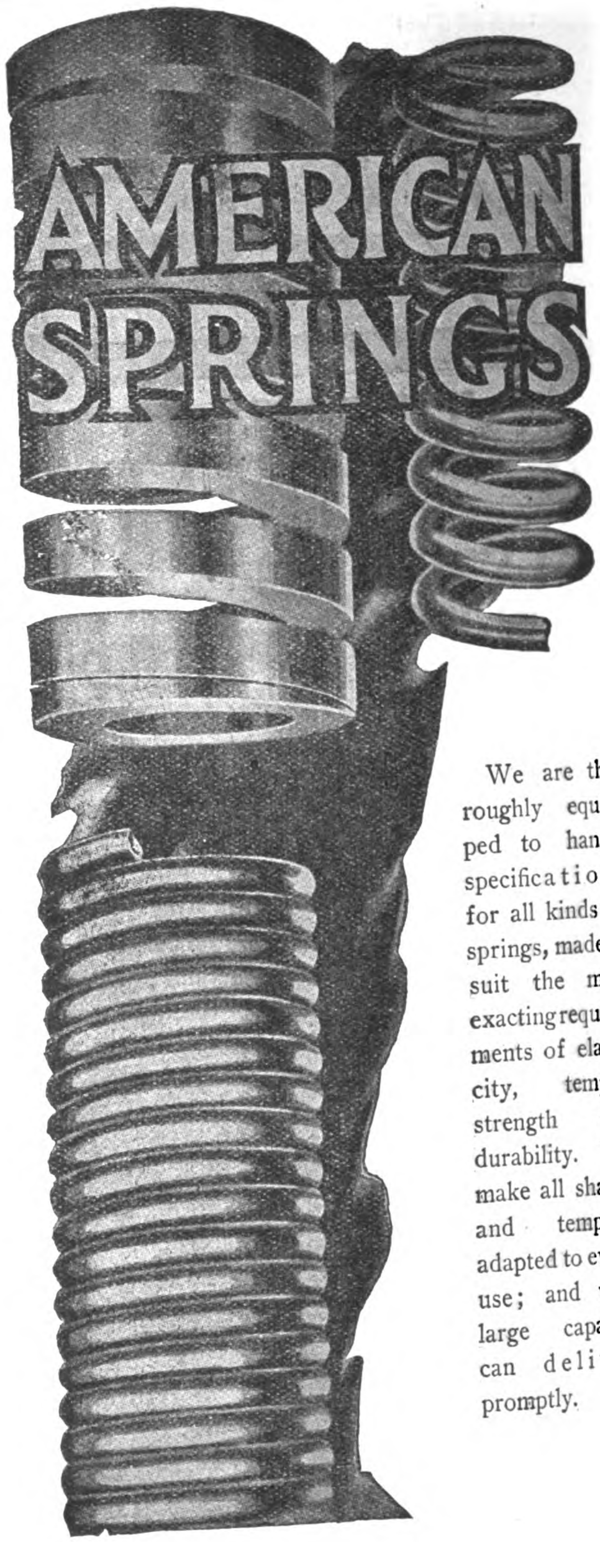


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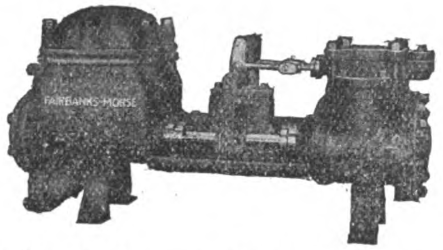


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Other pumps in wide range of capacities for practically any pressure.

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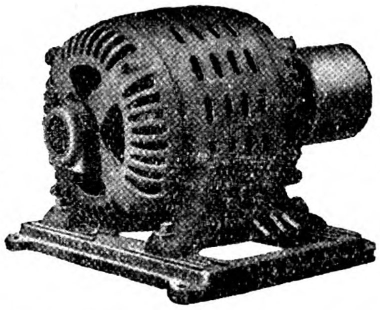

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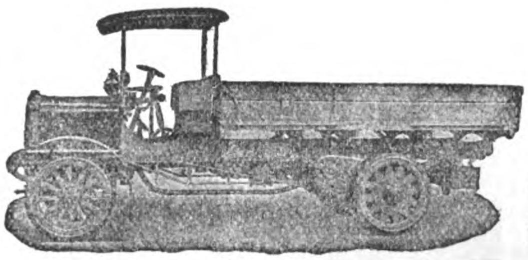

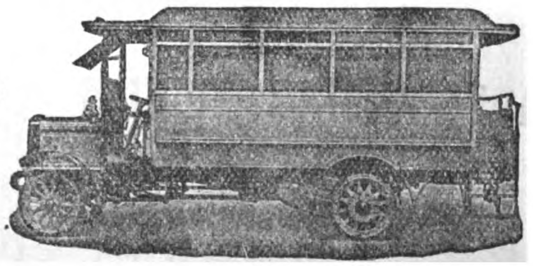

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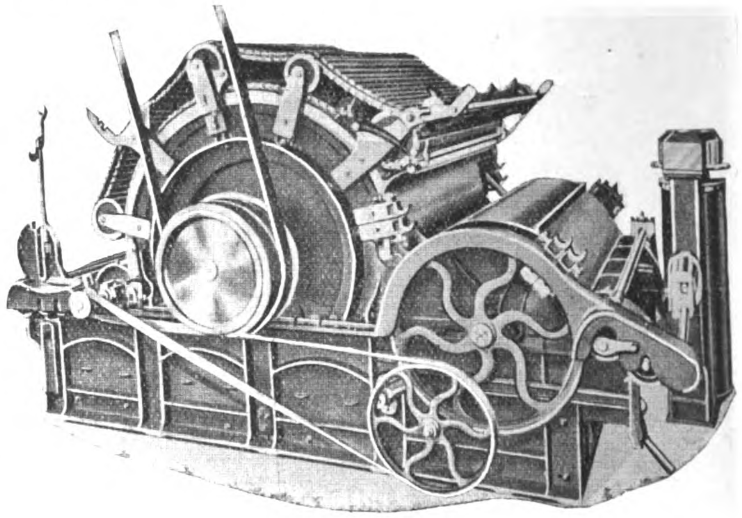

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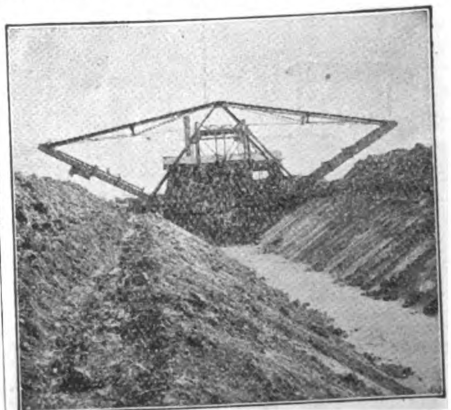

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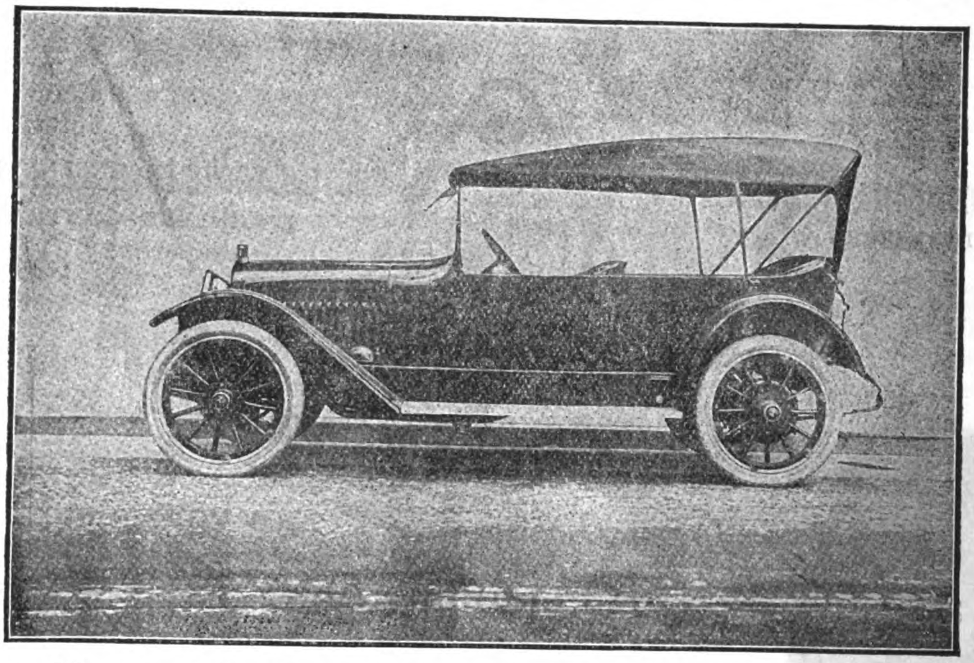

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*built by*

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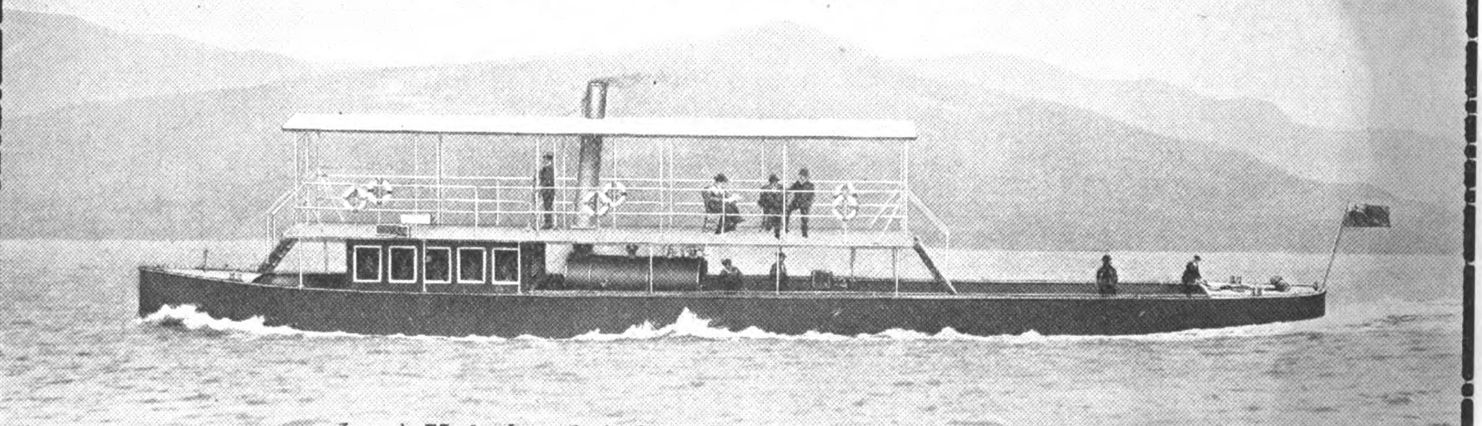

*Length 75 ft., beam 9 ft. 3 in., draught 12 in., speed 10 miles an hour.*

**Vessel as above illustrated can be shipped whole to any part of the world.**

*Messrs. YARROW construct fast Passenger and Commercial Vessels, Shallow Draught Steamers, Tugs, &c., propelled by Sternwheels, Side Wheels, or Screws working in Tunnels fitted with Yarrow's Patent Hinged Flap.*

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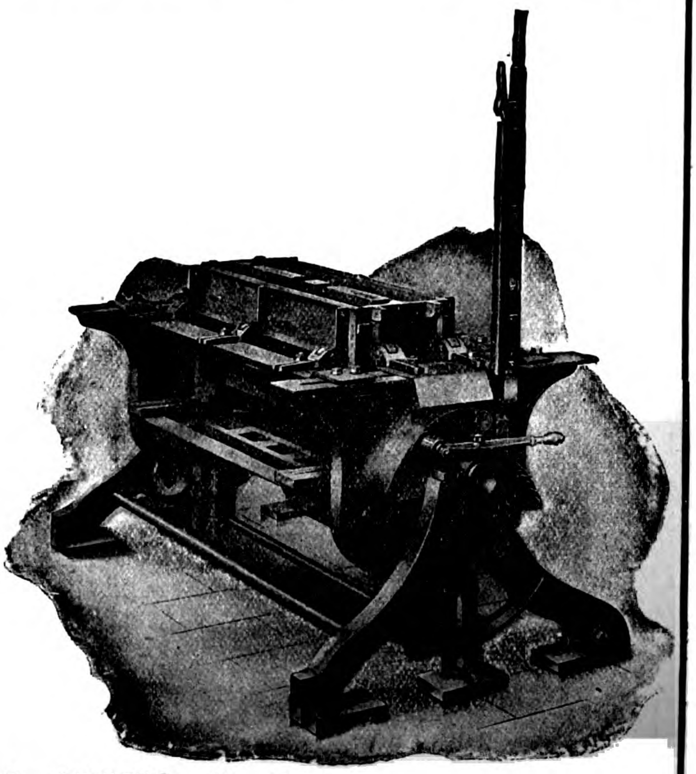

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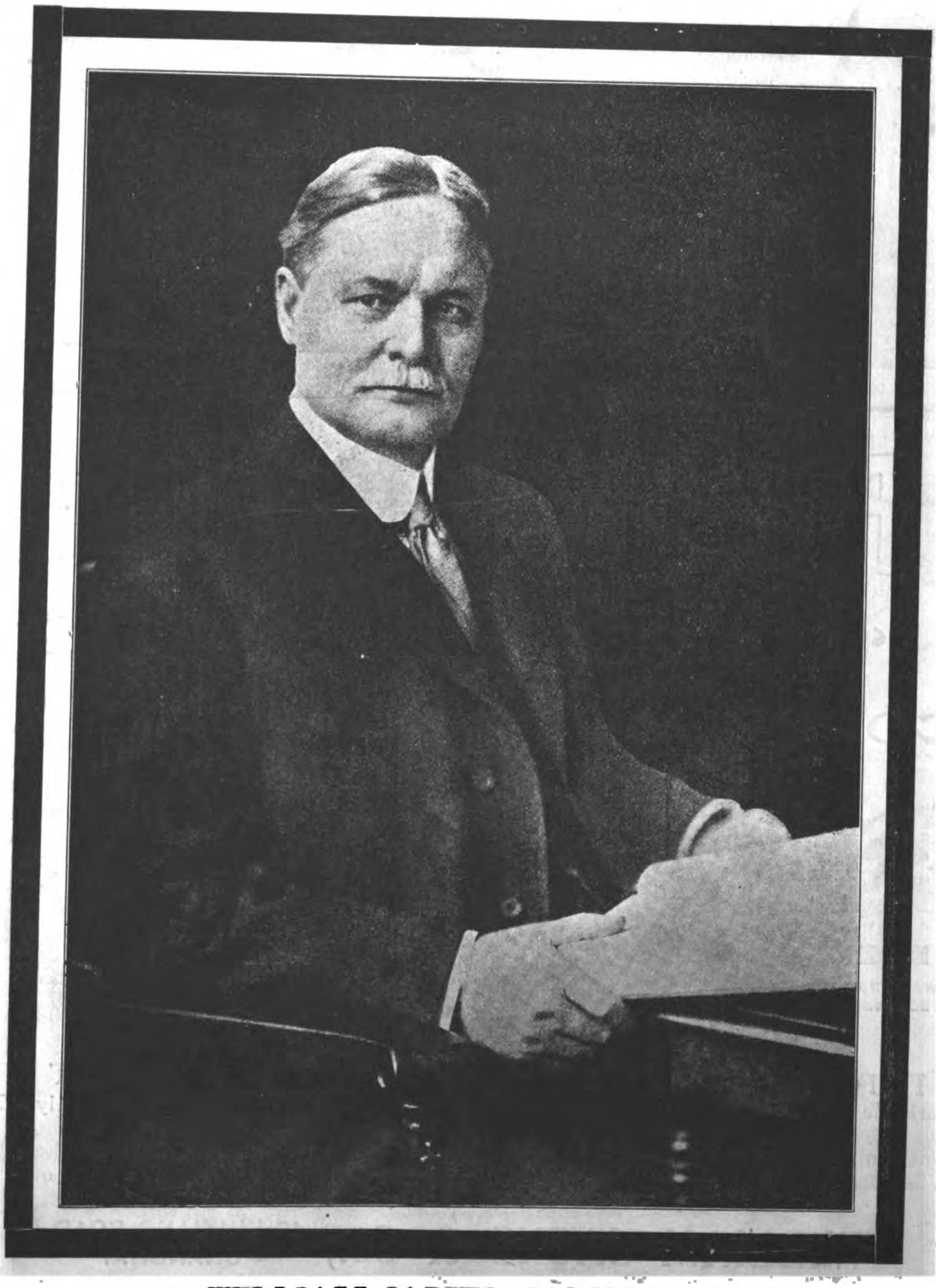
# THE FAR EASTERN REVIEW

遠東時報

Engineering
Finance ✽ Commerce

Vol. XIII., No. 6 SHANGHAI ✣ PEKING ✣ MANILA November, 1916



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AN UNDILUTED AMERICAN DIPLOMAT—FORMER MINISTER TO CHINA, WHO PASSED AWAY, ON SEPTEMBER 19, AT CHICAGO. HE NEEDS NO EULOGY. HIS WORK WILL LIVE. HE

SHALLOW DRAUGHT LAUNCH—YARROW SYSTEM,
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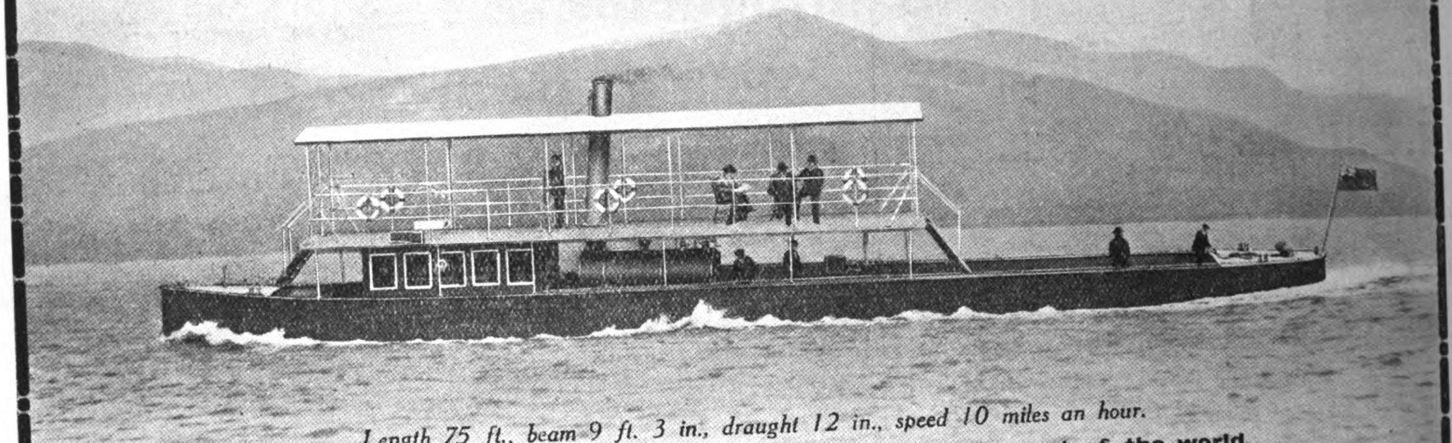

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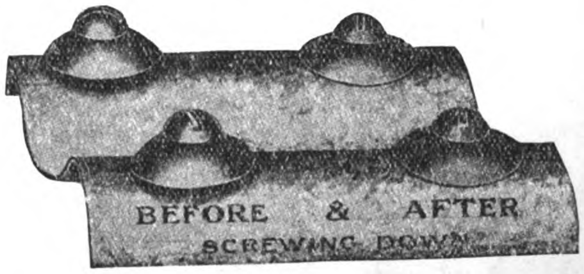
LIMPET WASHER AND BOLT BEFORE SCREWING DOWN.



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IT FOLDS DOWN ON THE CORRUGATION TO A PERFECT FIT

This remarkable feature, along with the spigot and faucet joint at bolt head, comprises the only efficient method of jointing corrugated iron.

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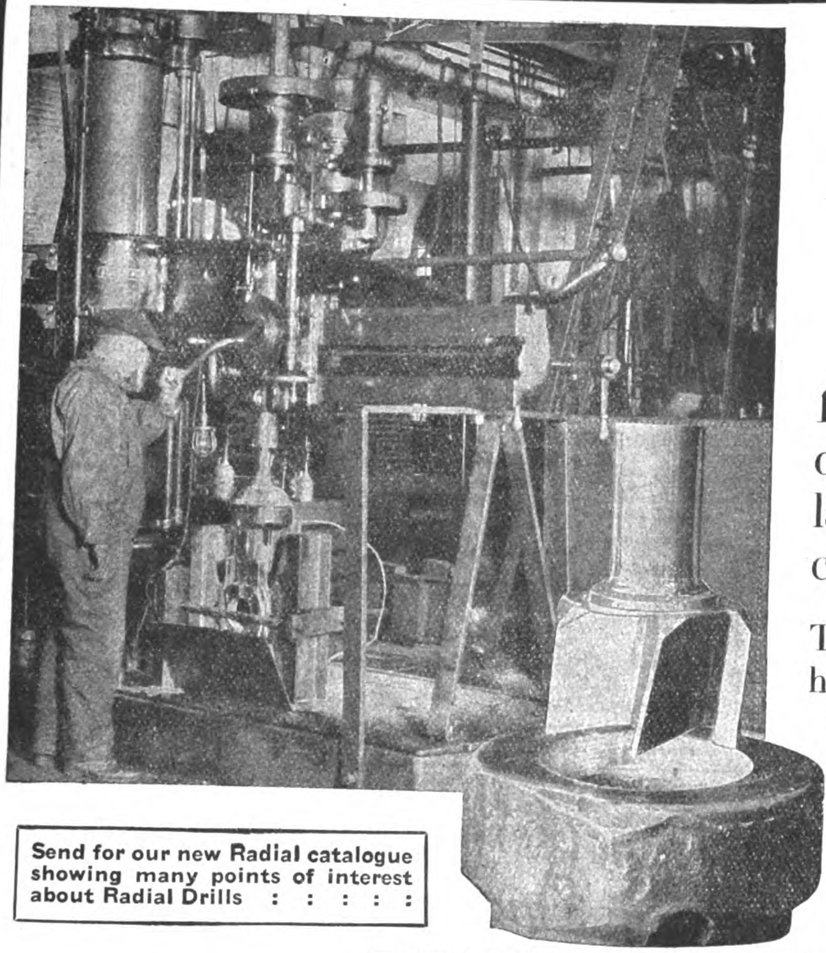

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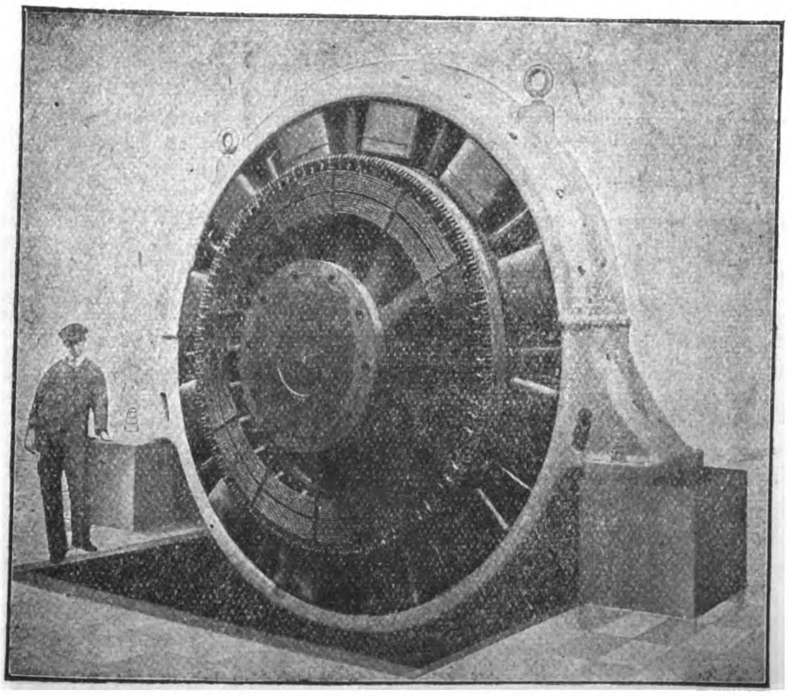

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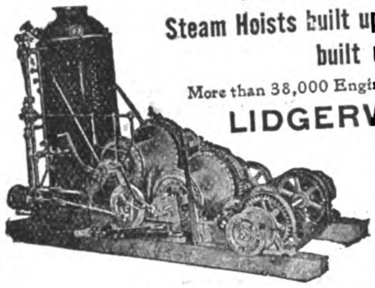

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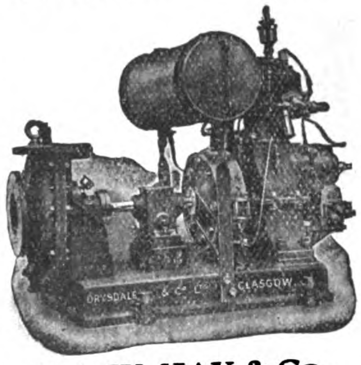


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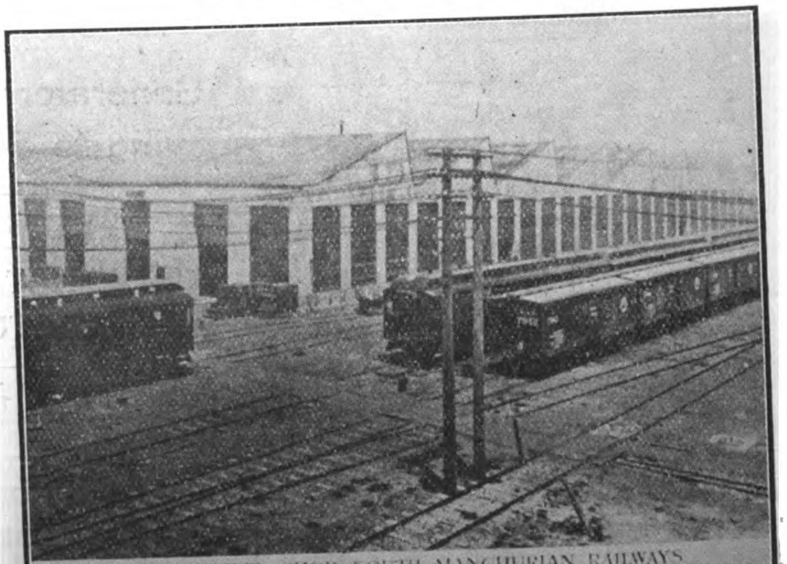

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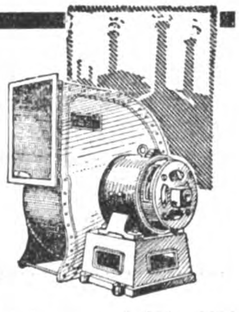

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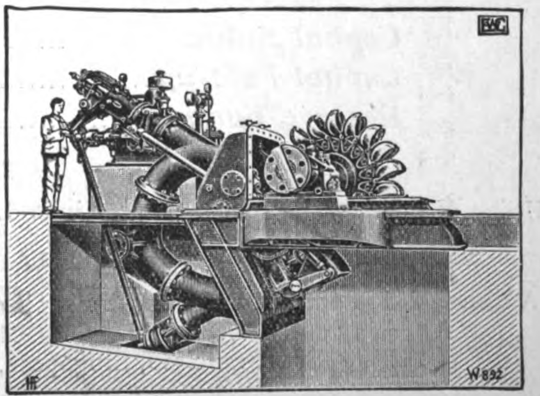

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| "Total number of Water Turbines executed or in course of construction up to the end of JUNE 1916, amounts to 5765 Turbines, representing a total output of 3,109,413 H.P." | Up to the end of 1915 the turbines on order numbered 1,600, corresponding to a total of 4,400,000 h.p. |
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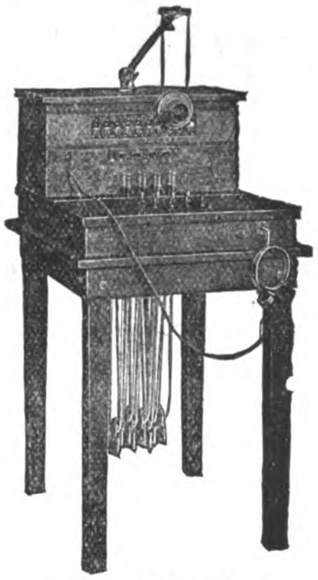

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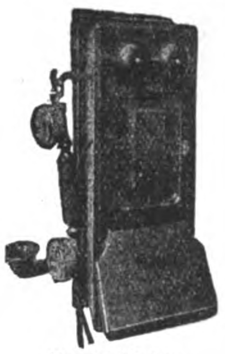

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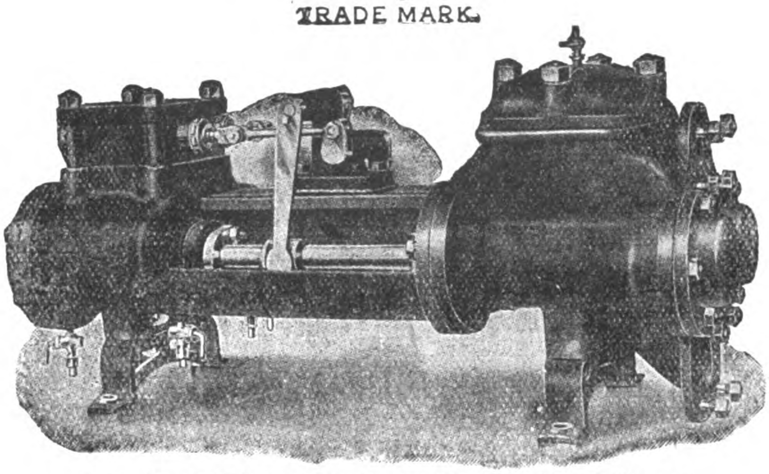

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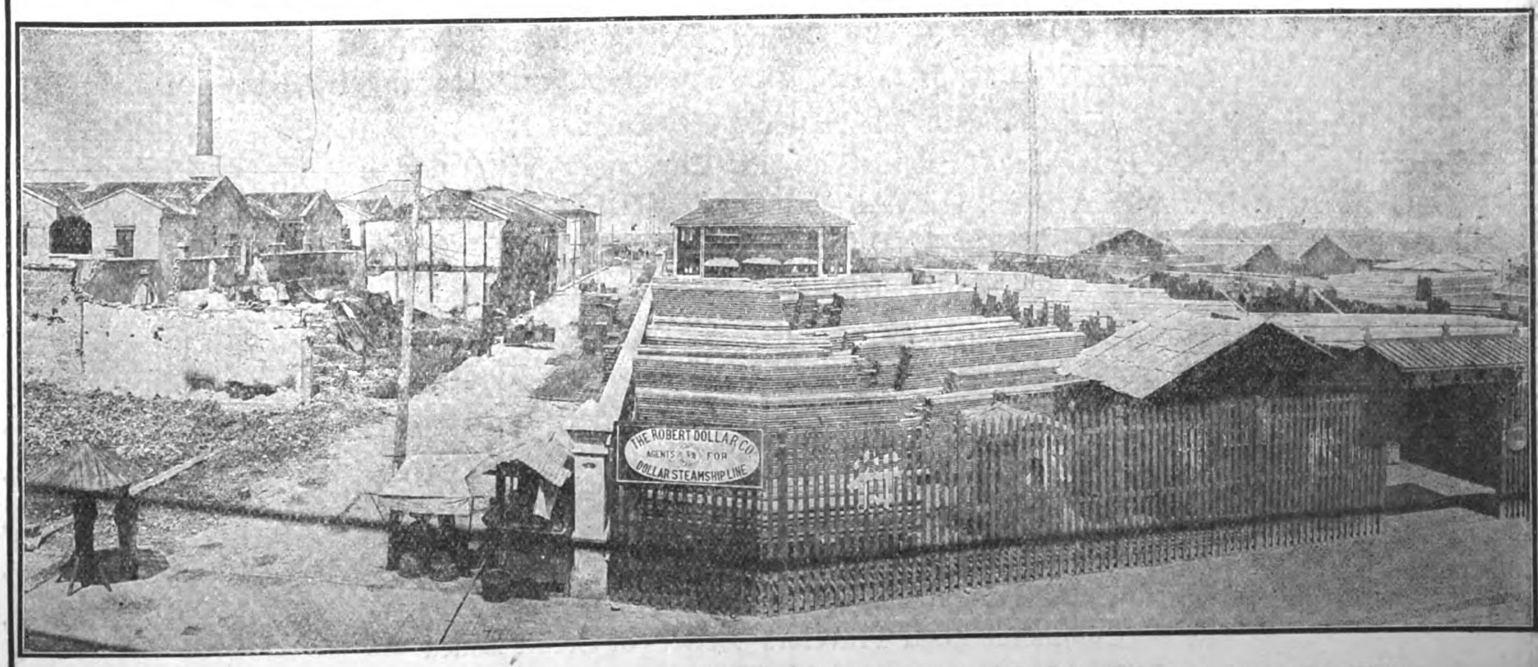


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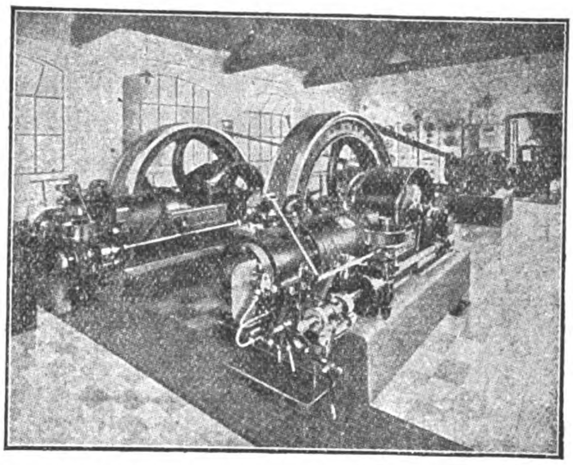

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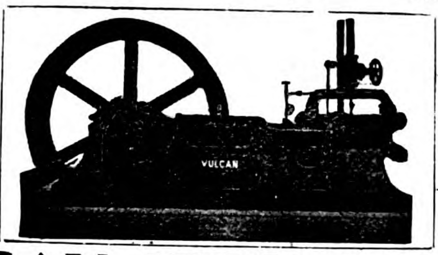

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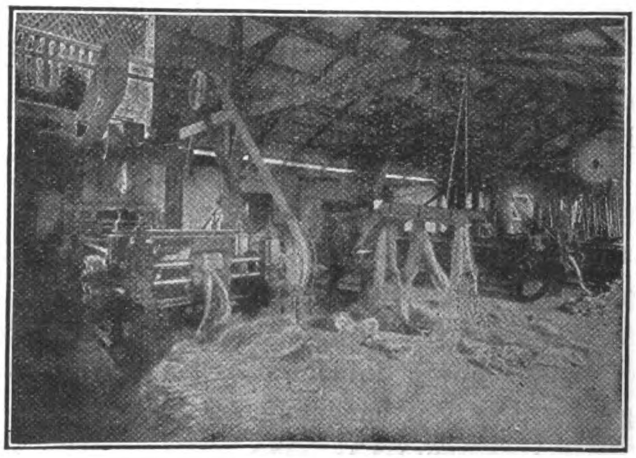

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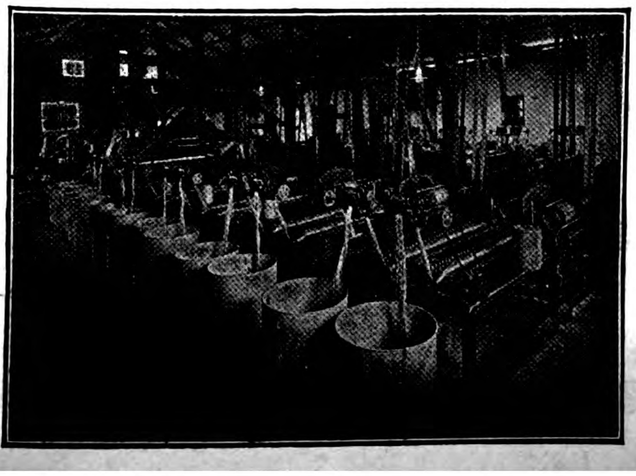

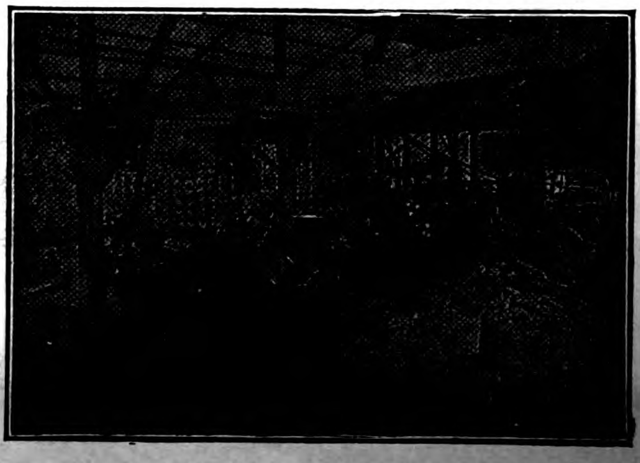

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# BANK OF CHINA

## Government Bank

(Specially authorised by Presidential Mandate of 15th April, 1918)

Authorised Capital: $60,000,000.00
Paid up Capital: $10,000,000.00

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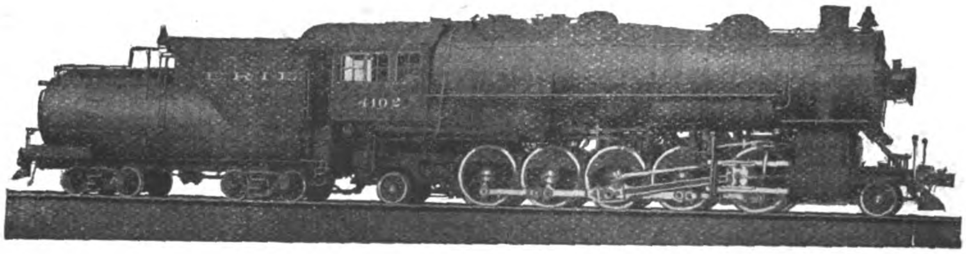


ERIE RAILROAD

Total Weight of Engine, 401,000 pounds; Weight on Drivers, 335,500 pounds; Diameter of Drivers, 63 inches; Tube Length, 17 feet; Boiler Pressure, 200 pounds; Cylinders, 31x32 inches; Maximum Tractive Power, 83,000 pounds

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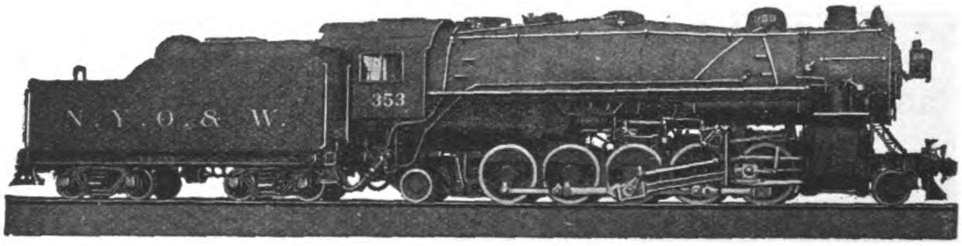


NEW YORK, ONTARIO & WESTERN RAILWAY

Total Weight of Engine, 352,500 pounds; Weight on Drivers, 293,000 pounds; Diameter of Drivers, 57 inches; Tube Length, 17 feet; Boiler Pressure, 190 pounds; Cylinders, 28 x 32 inches; Maximum Tractive Power, 71,200 pounds

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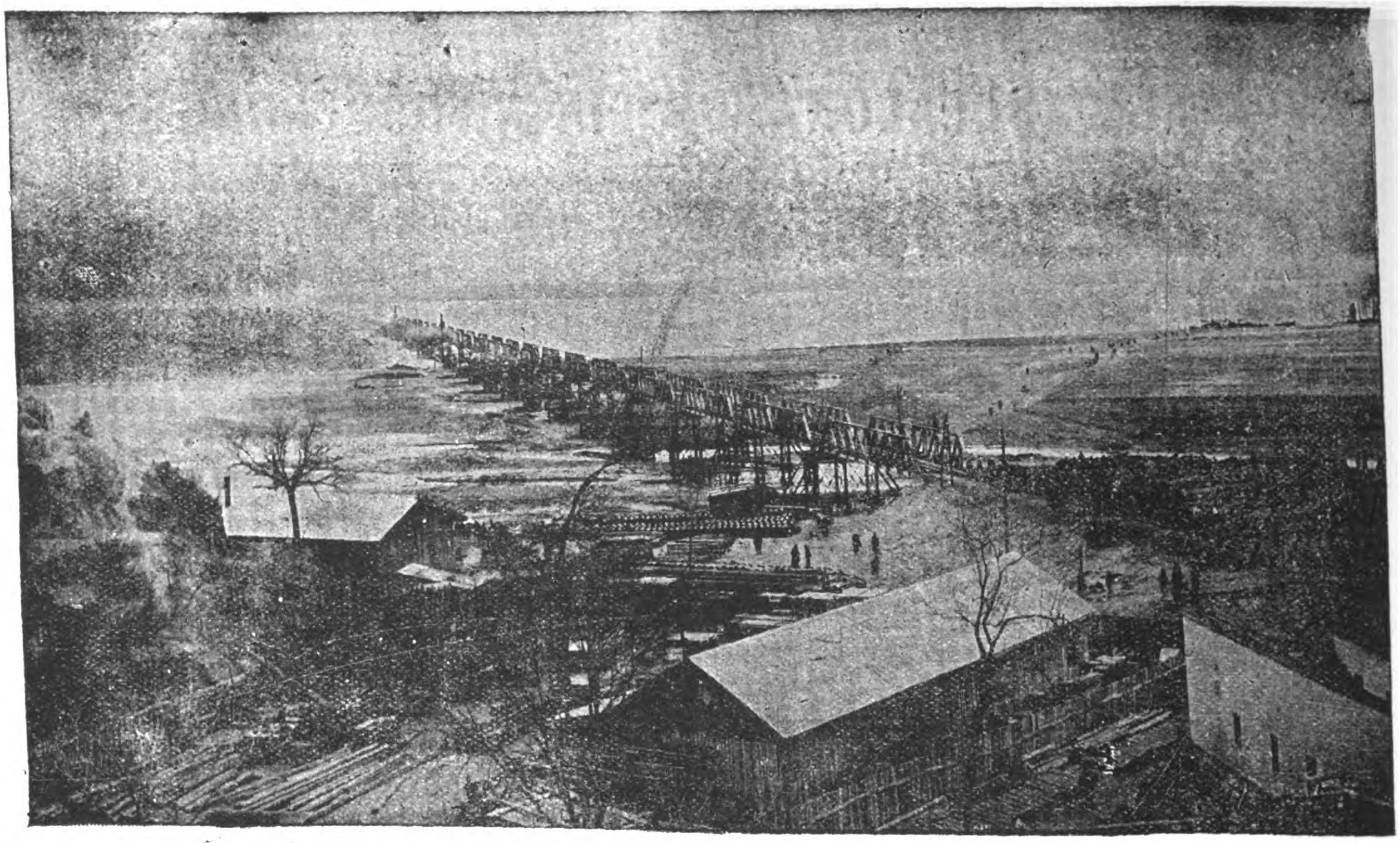

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CHINESE GOVERNMENT RAILWAYS

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A weekly express train de luxe leaves Peking every Tuesday, and Hankow every Friday, making the trip of over 700 miles in less than thirty hours.

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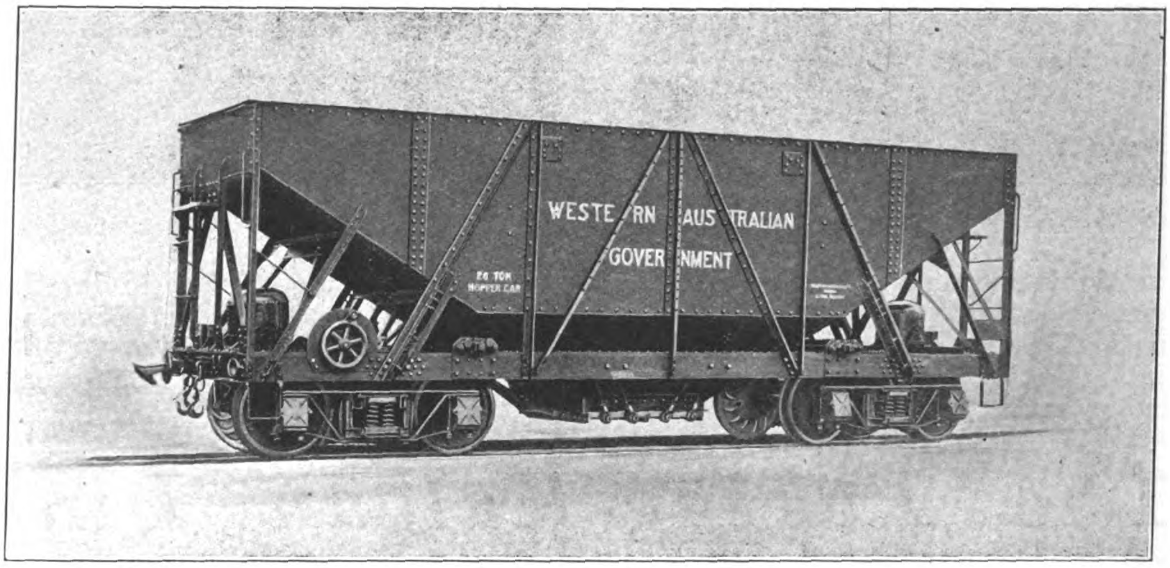


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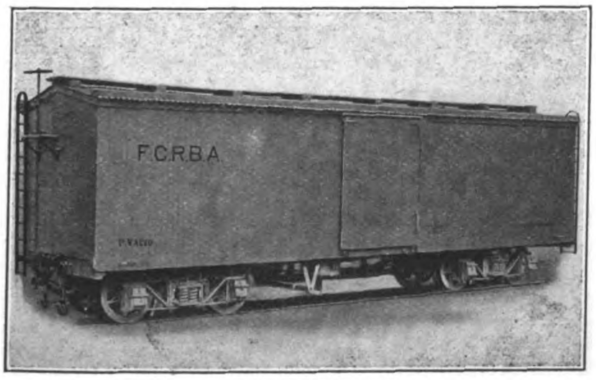
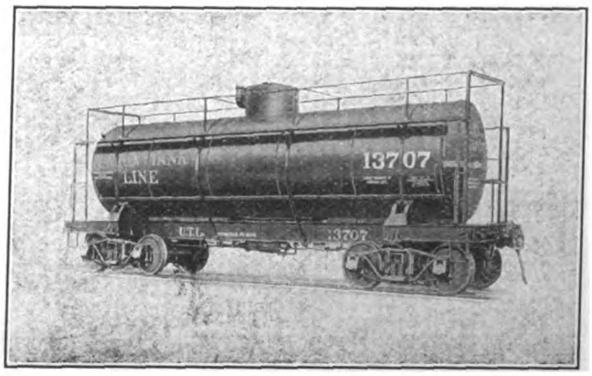



FOR ARGENTINE REPUBLIC
Gauge 3'-3⅜" (1,000 M.) Length 30'-0" (9.144 M.) Capacity 50,000 lbs. (22,700 K.) Weight 24,300 lbs. (11,000 K.)

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Export Representative

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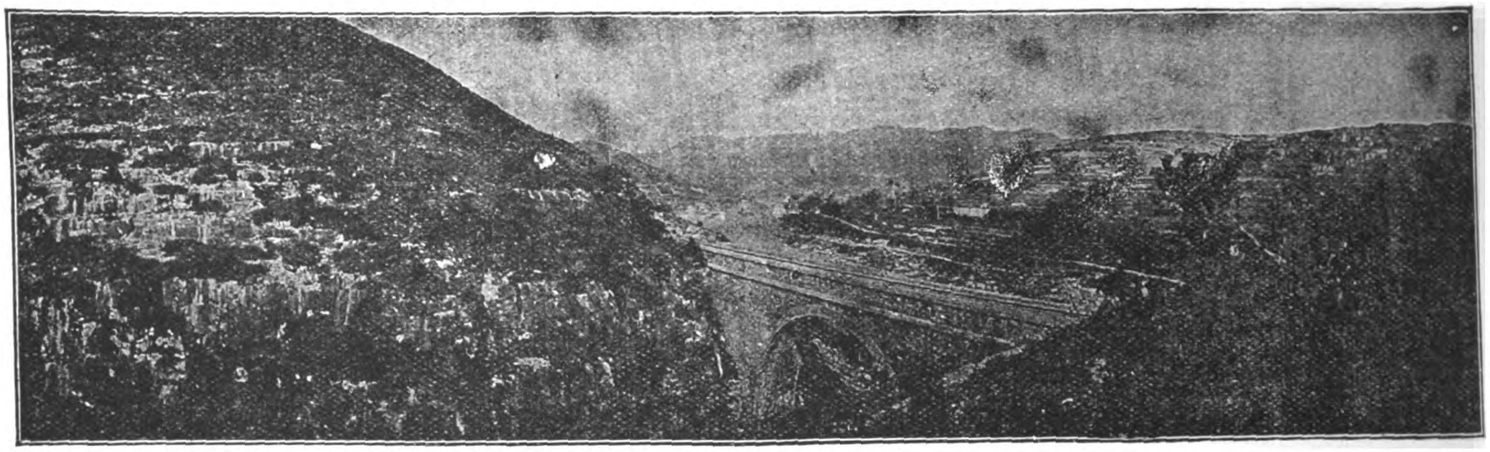
# Chinese Government Railways

## *The Cheng-Tai Railway*

*(CHINESE GOVERNMENT SHANSI LINE—CHENGTINGFU TO TAIYUANFU)*

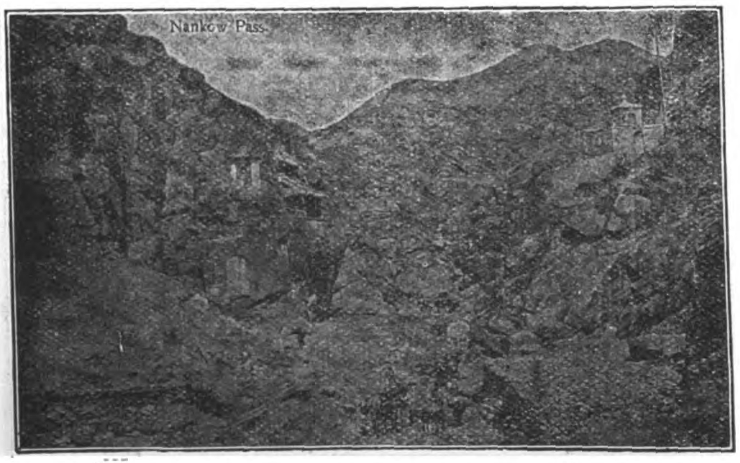


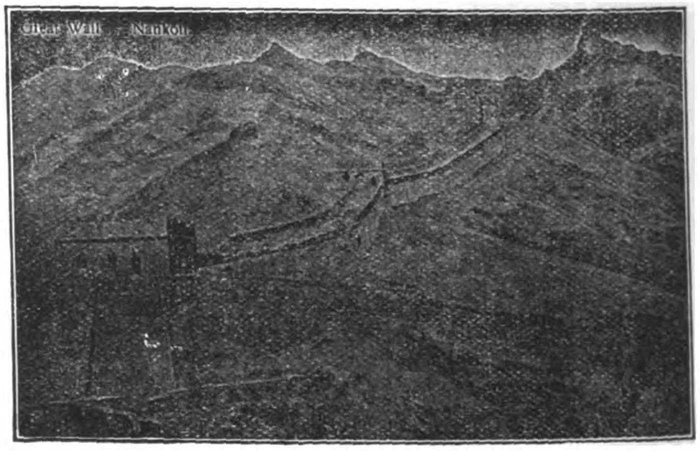
VIEWS ALONG ROUTE OF CHENG-TAI RAILWAY

The trains of this line connect with the through service of the Peking-Hankow Railway, affording Travellers the opportunity of seeing the most picturesque part of China. The line passes through a mountainous section of country, rich in Mineral Resources to the Provincial Capital of Shansi at Taiyuanfu. This interesting city is a great educational center, and famous for the fine quality of its artistic embroideries.

## *The Peking-Kalgan Line*

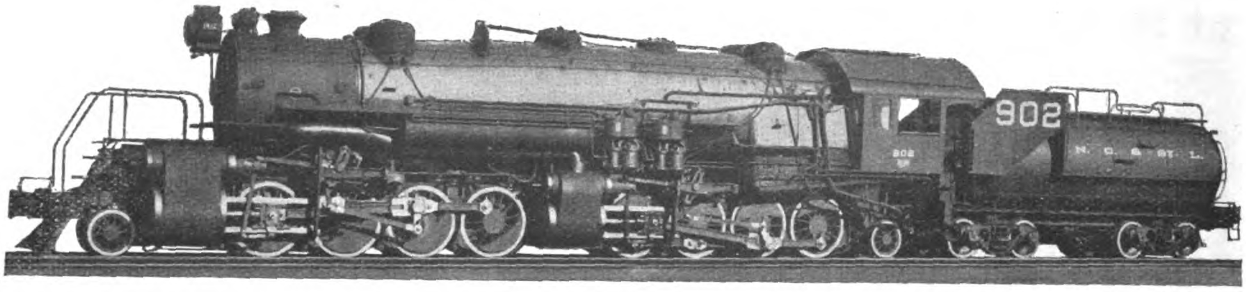
*"THE ROAD TO THE GREAT WALL"*



This line follows the ancient caravan route and military highway from Mongolia into China by the way of the historic Nankow Pass. This pass is the Key to Peking, and Kalgan is the gate of the Country. From here the great camel caravans set out on their long journeys across Mongolia to Siberia and Central Asia. This old frontier mart, retaining its time-honored characteristics, one of the most interesting sights of the Old World, is made accessible by the new railway. The line also carries the passenger in two hours from Peking to Nankow, when the Great Wall of China and the Ming Tombs may be seen. A foreign hotel is operated by the railway authorities at Nankow, where chairs and guides may be secured for the Tombs.

# MALLET LOCOMOTIVES




MALLET ARTICULATED LOCOMOTIVE, NASHVILLE, CHATTANOOGA & ST. LOUIS RY.

Cylinders, 27 & 41×30 inches.
Driving-wheels, diam., 56 inches.
Steam pressure, 210 lbs.
Grate area, 85.5 sq. ft.
Water heating surface, 5433 sq. ft.
Superheating surface, 1262 sq. ft.
Weight on driving-wheels, 430,300 lbs.
Weight, total engine, 469,400 lbs.

TRACTIVE FORCE, 99,000 Lbs.

Three Mallet type locomotives, as illustrated, have recently been built by The Baldwin Locomotive Works for pushing service on two per cent. grades on the Nashville, Chattanooga & St. Louis Railway. Heretofore, heavy freight trains have been moved over these grades by three locomotives. The largest road engines on the line are of the Mikado type, and they exert a tractive force of 49,500 pounds. Each Mallet, therefore, can replace two of the pushers previously used.

The Mallets are equipped with superheaters, brick arches, mechanical stokers and power reverse gears. The firebox has a combustion chamber, extending forward into the boiler barrel. This construction provides ample furnace volume, while the length of the tubes is kept within reasonable limits. At starting, live steam can be admitted to the low pressure cylinders through a special valve placed in the cab. The radius-bar connecting the front and rear frames, makes a ball-jointed connection with the hinge-pin, so that sufficient flexibility is provided at this point.

Mallet locomotives, when specially designed and equipped for the service, are proving efficient in heavy pusher work, and in road service on mountain grades. With a large percentage of their total weight on driving-wheels, these engines are working at best advantage when developing high tractive forces at moderate speeds.

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**Diamond Boring Machines**

under charge of experienced staff.

**Accurate results guaranteed.**

For further particulars and estimates—apply

**PEKIN SYNDICATE, LTD.**

SHANGHAI, TIENTSIN, HANKOW, PEKING.

# 鑛務

探鑛 採鑛

均可代辦

金鋼鑽鑽機打礲

技師工人皆歷練能手

工程穩準

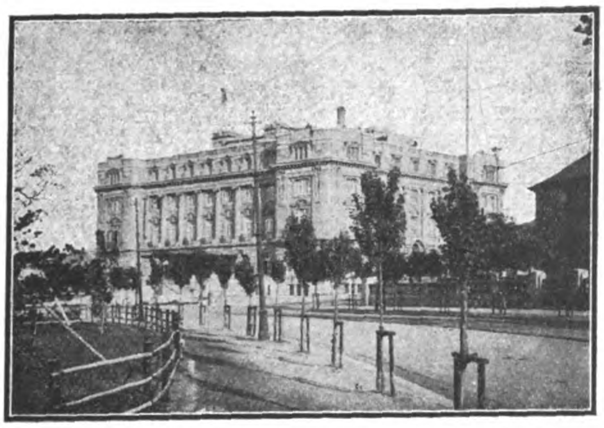
價目詳情祈詢

福公司

上海 天津 漢口 北京

# SOUTH MANCHURIA RAILWAY

## Important Section in the Overland Route between Europe and the Far East



S.M.R. Co.'s Yamato Hotel, Dairen (The Finest Hotel in the Far East).

### *Save time and Money*

The Quickest, Cheapest, and Safest Route between Europe and the Far East is via Siberia and Manchuria. The South Manchuria Railway Company's Express Trains are equal to the best in Europe and America, and are timed to connect with other Express Trains and Steamers. Sleeping Cars are attached to most of the Ordinary Daily Trains.

### *How to Reach Shanghai.*

Travellers from Europe via Siberia by the Through Express arrive at Dairen in time to catch the S.M.R. Company's Weekly Mail and Passenger Steamer "Sakaki Maru" of the Dairen-Tsingtao-Shanghai Line. This Steamer is turbine driven, equipped with wireless telegraphy, and carries a doctor on board. The "Kobe Maru," which also leaves Dairen weekly, plys direct to Shanghai without calling at Tsingtao.

### *Important to Travellers and Tourists.*

The S.M.R. Co. has established, under its direct management, a series of Yamato Hotels at Dairen, Hoshigaura, Port Arthur, Mukden, and Changchun. All on European lines. Cook and Son's Coupons accepted. Tel. add.: "Yamato"

### *Health and Holiday Resorts in Manchuria.*

The beautiful climate and scenery of Manchuria is fast popularizing it as a health and holiday resort, and special seaside colonies have been established at Hoshigaura (Star Beach), near Dairen, and Ogondai (Golden Beach), near Port Arthur.

### *Of Interest to Shippers.*

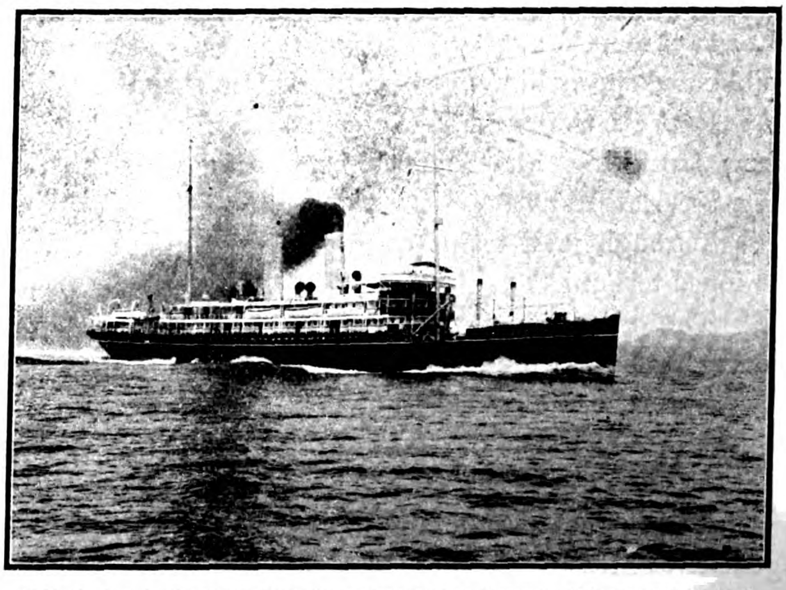
In addition to its Dairen-Tsingtao-Shanghai Liners, the S.M.R. Co. run a fleet of cargo steamers between Dairen and Hongkong, calling at ports en route. Other Steamship Companies have regular services to and from Dairen. Particulars may be obtained from the Manager of the Wharf Office, Dairen.

### *Best Steaming Coal in the Far East.*

Large stocks of the S.M.R. Company's Coal from the famous Fushun Collieries are always kept at Dairen, Port Arthur, Newchwang (Yingkou), and Tientsin Depots, and can also be obtained at Chefoo, Shanghai, Hongkong, Singapore, and Penang. For special contracts apply Manager, Mining Dept., S.M.R. Co., Dairen.

### *Ticket Agents.*

The S.M.R. Company's Railway and Steamer Tickets, Illustrated Guide Books, and Handbooks of Information can be obtained at all the Offices and Agencies of Messrs. Thos. Cook & Son, the International Sleeping Car and Express Trains Co., and the Nordisk Resebureau; the Nippon Yusen Kaisha, Shanghai; the S.M.R. Branch Wharf Office, Shanghai; or direct from the



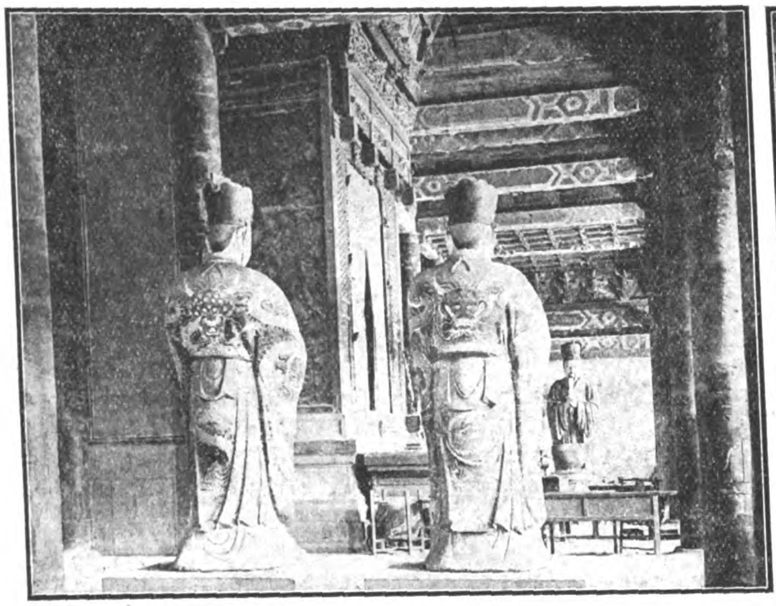
S.M.R. Co.'s Dairen-Tsingtao-Shanghai Liner, "Sakaki Maru."

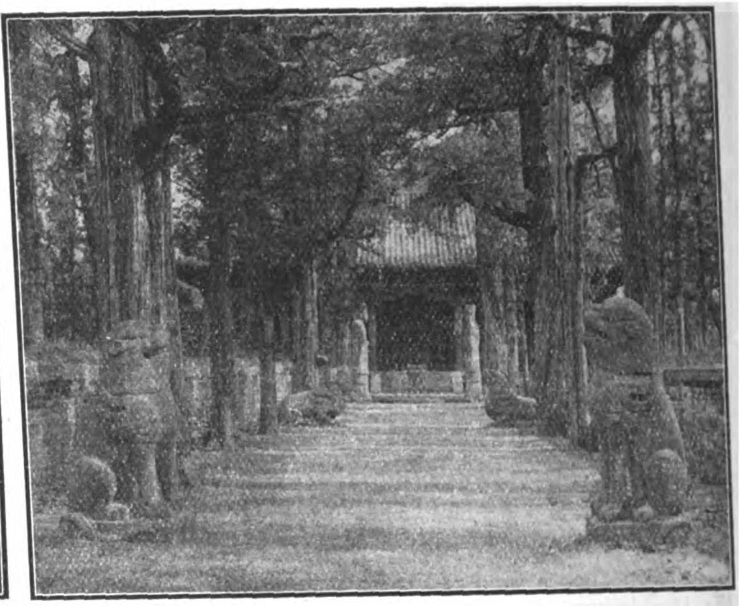
# South Manchuria Railway Company, Dairen.

**Tel. Add.: MANTETSU.** **Codes: A.B.C. 5th Edition, A.L. & Lieber's.**

# CHINESE GOVERNMENT RAILWAYS

# TIENTSIN-PUKOW LINE





**Mukden-Peking-Kalgan-TIENTSIN-TSINANFU-HSUCHOWFU-PUKOW-Nanking-Shanghai.**

**all by rail only.**

---

Being the **quickest, surest and most convenient** connection between Shanghai on the one and Tientsin, Peking, Kalgan, Mukden and the **Siberian route on the other side,** this railway represents **a saving of many hours, of many troubles,** worries and inconveniences for the busy merchant, the home tripper on short furlough.

The tourist, the globe trotter travelling with more leisure and bent on seeing things, it takes right away from the stereotyped banality of the great ports, takes him through many provinces of the vast republic and shows him **something of the "real" China,** of its people, its history and its beauty.

Express trains equipped with sleeping and buffet cars run once a week each way between Pukow (Nanking) and Tientsin connecting with the through service of the South-Manchuria and Trans-Siberian Railways.

Through mail trains equipped with **buffet cars run daily each way** between the before mentioned termini.

The crossing over the Yangtsekiang between Nanking and Pukow is effected by means of a modern 100-tons twin-screw ferry boat.

Special facilities and **liberal allowances** for passengers' baggage.

Best of **meals and wines supplied** on the trains.

Sanitation under the personal supervision of a **qualified medical officer.**

For further particulars apply to The Traffic Manager, Head Office, Tientsin or to the Agencies of Messrs. Thomas Cook & Sons, The International Sleeping Car & Express Trains Co. or the Nordisk Resebureau.

Telegraphic Address: TSINPURY—Tientsin (Tsinanfu, Nanking, Shanghai).

Codes: A B C 5th Edition; Broomhalls' (with Suppl. No. 1).

**Tientsin, May 1st, 1915.** **The Tientsin-Pukow Railway Administration.**

# United States Steel Products Company

**Union Building, No. 4 The Bund, Shanghai**

*Telegraphic Address: "STEELYARD" SHANGHAI*

*Exporters of the Products of*

CARNEGIE STEEL CO.
AMERICAN STEEL & WIRE CO.
ILLINOIS STEEL CO.
AMERICAN SHEET AND TIN PLATE CO.
THE LORAIN STEEL CO.
AMERICAN BRIDGE CO.
NATIONAL TUBE CO.
SHELBY STEEL TUBE CO.
TENNESSEE COAL IRON AND R. R. CO.

## LIST OF PRODUCTS

**BESSEMER and BASIC OPEN HEARTH STEEL.**
Billets, Slabs, Sheet and Tin Plate Bars; Skelp.

STEEL RAILS, Splice Bars, Bolts, Nuts, Spikes, and other accessories;
CROSSINGS, FROGS, SWITCHES, and other SPECIAL WORK;
Steel Cross Ties; Copper Rail Bonds; Tubular Poles.

Beams, Channels, Angles, Tees, Zees, Steel Mine Timbers and other STRUCTURAL SHAPES.

"UNITED STATES" "FRIESTEDT" STEEL SHEET PILING.

STEEL PLATES for Shipbuilding, Tanks, Boilers, etc.; FLANGE and FIRE BOX STEEL;
Checkered Floor Plates;
Black, Galvanized and Painted STEEL SHEETS, Flat and Corrugated;
Special Rust Resisting Sheets, Plates and Shapes;
Range Steel; Tack Plate; Locomotive Jacket Iron; Patent Planished Sheet Iron; etc.
Metal Lath, Metal Ceiling and Siding; Electrical Sheets.

STEEL HOOPS and COTTON TIES.

MERCHANT BARS—Rounds, Squares, Flats, Ovals, Hexagons, and other Bar Shapes.
Twisted and Deformed Bars for Concrete Reinforcement.

Special Iron and Steel for Bolts, Rivets, Shafting and other purposes;
COLD DRAWN STEEL SHAFTING, and BARS—Rounds. Squares, Flats, Hexagons, and other shapes—for SCREW MAKING and other MANUFACTURING PURPOSES.

SOLID FORGED and ROLLED STEEL WHEELS, and FORGED STEEL AXLES;
FORGINGS for Machinery and Special Purposes.

BLACK and GALVANIZED WROUGHT MERCHANT PIPE for GAS, WATER, STEAM,
Seamless Steel and Lapwelded BOILER TUBES for OIL and ARTESIAN WELLS;
STEEL DERRICKS and DRILLING RIGS for Stationary, Locomotive and Marine Works;
CASING, TUBING and DRIVE PIPE for OIL and other WELLS; GAS and OIL LINE PIPE;
LAP-WELDED and SEAMLESS CYLINDERS for Compressed Air, Carbonic Acid Gas, Andydrous Ammonia, etc.;
Converse and Matheson LEAD JOINT PIPE for WATER and GAS MAINS;
SEAMLESS TUBES, Shrapnel, Projectiles, and Miscellaneous Forgings.

CAST IRON and MALLEABLE IRON FITTINGS for Tubes and Pipe;
Brass and Iron VALVES and COCKS.

WIRE RODS; DRAWN STEEL WIRE of every description; BARB WIRE;
PLAIN GALVANIZED and VARNISHED FENCE WIRE; WOVEN WIRE FENCING; FENCE STAPLES;
Galvanized Steel Fence Posts and Gates; Netting and Weaving Wires; Mattress, Broom and Bottling Wires;
Triangle Mesh Woven Wire Reinforcement for Concrete; GALVANIZED TELEGRAPH and TELEPHONE WIRES;
COPPER WIRES; ELECTRICAL WIRES; CABLES and TROLLEY WIRES;
TOWERS for HIGH VOLTAGE ELECTRICAL TRANSMISSION LINES.

WIRE NAILS and WIRE TACKS; WIRE BALE TIES; WIRE HOOPS; FLAT, HELICAL and SPECIAL SPRINGS;
WIRE ROPE, CABLES and HAWSERS; Wire Sash Cords and Clothes Lines;
WIRE ROPE TRAMWAYS and CABLE HOIST CONVEYORS.

HORSE and MULE SHOES.

TIN PLATES—Coke, Charcoal and Terne; BLACK PLATES for Tinning, Stamping, Enamelling, and other purposes.

Designs and Estimates submitted for BRIDGES and STEEL BUILDINGS erected complete, or prepared for erection. Steel Barges, Steel Tanks, Eye-bars, Sleeve Nuts, Clevices.

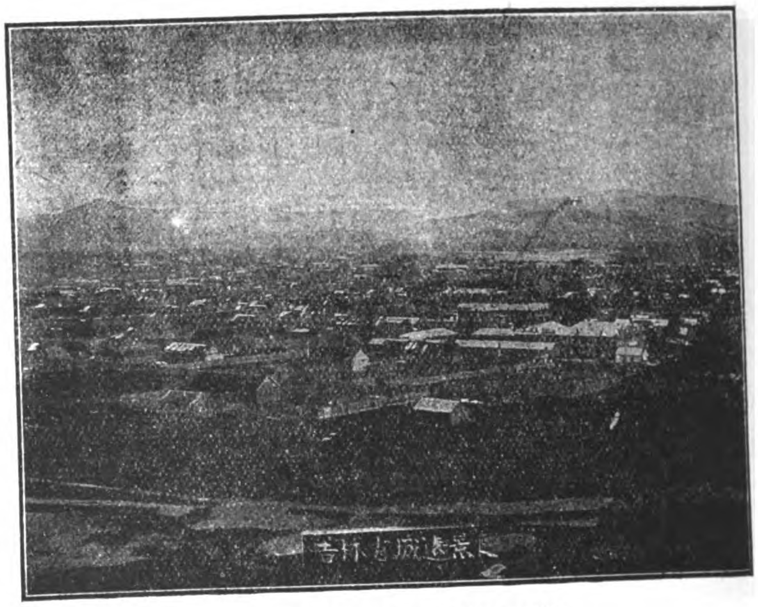
FOUNDRY and BASIC PIG IRON: COAL; COKE.

# 中華民國政府吉長鐵路行車時刻表

# CHINESE GOVERNMENT RAILWAYS KIRIN-CHANGCHUN LINE.

## TIME TABLE.

| DOWN TRAINS Daily Mixed | DOWN TRAINS Daily Mail | | STATIONS. | | UP TRAINS Daily Mail | UP TRAINS Daily Mixed |
|---|---|---|---|---|---|---|
| P.M. | A.M. | | | | P.M. | A.M. |
| 2.50 | 7.30 | dept. | TOUTAOKOU | arr. | 6.10 | 10.47 |
| 2.58 | 7.38 | arr. | CHANGCHUN | dept. | 6.00 | 10.37 |
| 3.05 | 7.41 | dept. | | arr. | 5.55 | 10.31 |
| 3.39 | 8.12 | arr. | KALUN | dept. | 5.24 | 9.57 |
| 3.43 | 8.14 | dept. | | arr. | 5.22 | 9.55 |
| 4.15 | 8.46 | arr. | YINMAHO | dept. | 4.50 | 9.22 |
| 4.18 | 8.48 | dept. | | arr. | 4.48 | 9.20 |
| 4.33 | 9.02 | arr. | HSIACHIUTAI | dept. | 4.34 | 9.05 |
| 4.38 | 9.04 | dept. | | arr. | 4.32 | 9.03 |
| 4.50 | 9.16 | arr. | YINGCHENGTZE | dept. | 4.20 | 8.50 |
| 4.53 | 9.18 | dept. | | arr. | 4.18 | 8.48 |
| 5.18 | 9.40 | arr. | TUMENLING | dept. | 3.56 | 8.24 |
| 5.26 | 9.50 | dept. | | arr. | 3.50 | 8.18 |
| | | arr. | CHAOCHIATIEN | dept. | 3.31 | 7.58 |
| 5.45 | 10.10 | dept. | | arr. | | |
| 6.09 | 10.31 | arr. | HUAPICHANG | dept. | 3.09 | 7.30 |
| 6.14 | 10.33 | dept. | | arr. | 3.07 | 7.23 |
| 6.30 | 10.46 | arr. | KUTIENTZE | dept. | 2.54 | 7.05 |
| 6.32 | 10.47 | dept. | | arr. | 2.53 | 7.03 |
| 6.49 | 11.03 | arr. | KIUCHAN | dept. | 2.37 | 6.48 |
| 6.53 | 11.05 | dept. | | arr. | 2.35 | 6.43 |
| 7.15 | 11.25 | arr. | KIRIN | dept. | 2.15 | 6.20 |



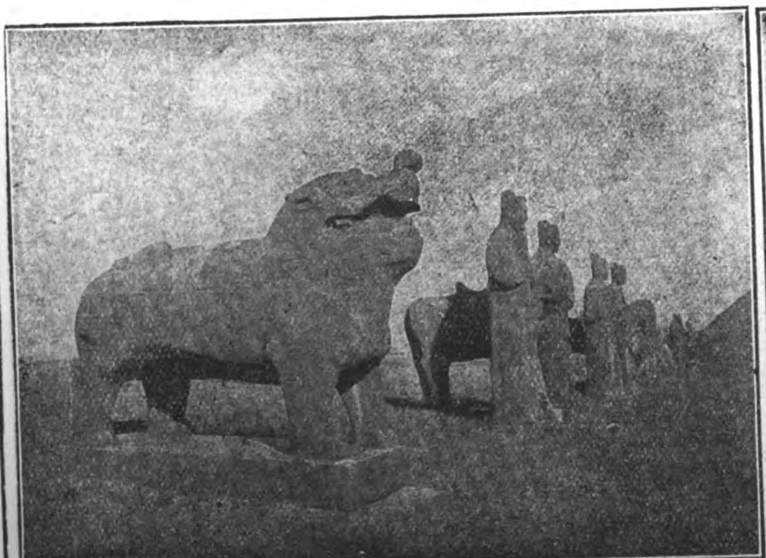
BIRD'S EYE VIEW OF KIRIN CITY

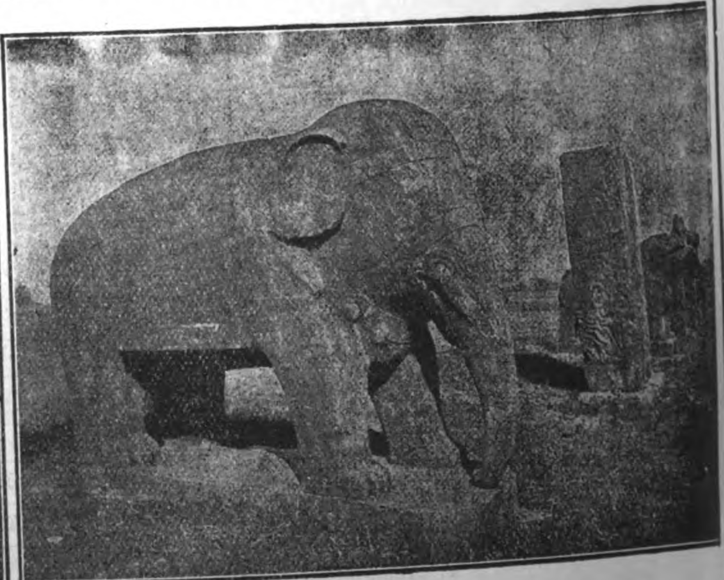
NOTICE:—"dept."=Departure. "arr."=Arrival.
1st July, 1916, and until further notice.

# THE PIENLO RAILWAY

## (KAIFENG-FU TO HONANFU)

## "THE FIRST SECTION OF THE PROJECTED CENTRAL TRUNKLINE"





THE SUNG TOMBS NEAR KAIFENG-FU ON THE PIENLO RAILWAY.

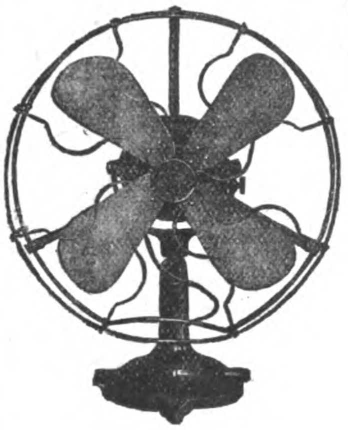
The line connects with the through service of the Peking-Hankow Railway at Tcheng Tchéou, enabling the traveller to visit Kaifengfu, the provincial capital of Honan, and the old capital of the Empire at Honanfu.

# General Electric Company

## Schenectady, N. Y., U. S. A.

### Products

- Air Brakes
- Circuit Breakers
- Compensators
- Compressors
- Controllers
- Converters
- Cooking Devices
- Fan Motors
- Generators, Alternating and Direct Current
- Generating Sets
- Heating Devices
- Hoists, Electric
- Instruments
- Lamps, Arc
- Lamps, Incandescent
- Lightning Arresters
- Line Material
- Locomotives, Mine, Railway and Industrial



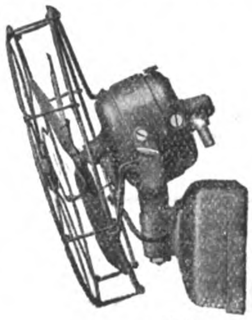
## Navy Type Fan

These fans are especially designed for use on shipboard and in localities where the atmosphere is laden with moisture. The motor is totally enclosed, excluding salt air, dampness and humidity. The fans are thoroughly moisture proof and all fittings are made of non-corrosive material.

The Navy Fan is so constructed that it can be used either as a desk or wall bracket fan as occasion requires. Bearings are self-aligning and self-lubricating. These fans have that selfsame quality behind them which has made the G-E Trade Mark famous all over the world.

## Railroad Type Fan (also recommended for shipboard)

These fans are provided with universal adjustments so that a current of air can be sent in any direction. The liberal size of all mechanical and electrical parts gives great durability. The malleable iron yoke casting and steel turning stud gives rigidity and a high degree of safety. The 12-inch fan is built especially for railroad cars of all types. If at any time it is found necessary to remove the fan, this can be simply done by slipping it off the base plate; the wiring and connection remain intact; a neat plate is supplied to cover the electrical connections should fan be removed.



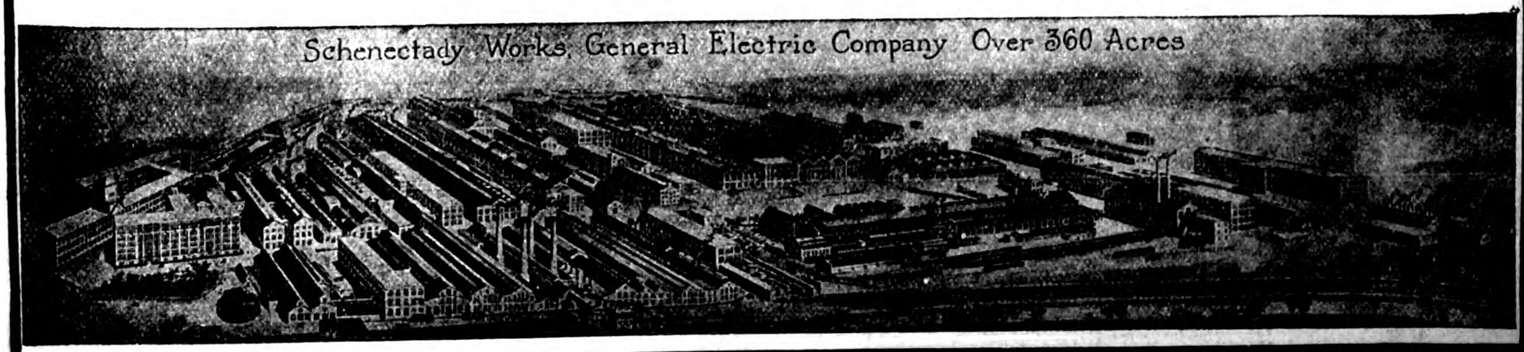
5710

### FAR EASTERN REPRESENTATIVES

**Yokohama**—General Electric Company, 23 Water Street
**Yokohama**—Bagnall and Hilles, 42, Yamaschita Cho.
**Tokyo**—Mitsui Bussan Kaisha, Ltd., 1, Suruga Cho.
**Shanghai**—Andersen, Meyer & Co., 5 Yuen Ming Yuen Road
**Manila**—Frank L. Strong Machinery Co., Correspondent, 64-68 Calle Echague

### Products

- Meters
- Motors
- Motor-Generators
- Panel Boards and Cabinets
- Projectors, Searchlight
- Pumps, Electrically Driven
- Railway Equipment
- Rectifiers, Mercury Arc
- Regulators
- Rheostats
- Supplies, General
- Switchboards
- Switches
- Transformers
- Turbine Generators
- Watthour Meters
- Wire and Cables
- Wiring Devices

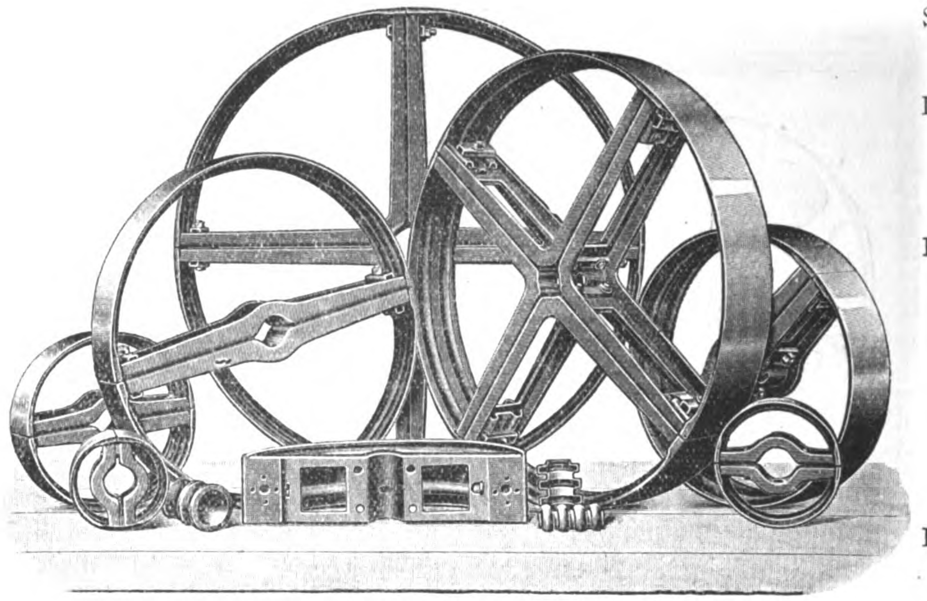


# SHANGHAI MACHINE COMPANY

ALL

SIZES

STOCKED



STEEL PULLEYS.

LEATHER BELTING.

BALATA BELTING HANGERS.

BRACKETS with RING OILING BEARINGS.

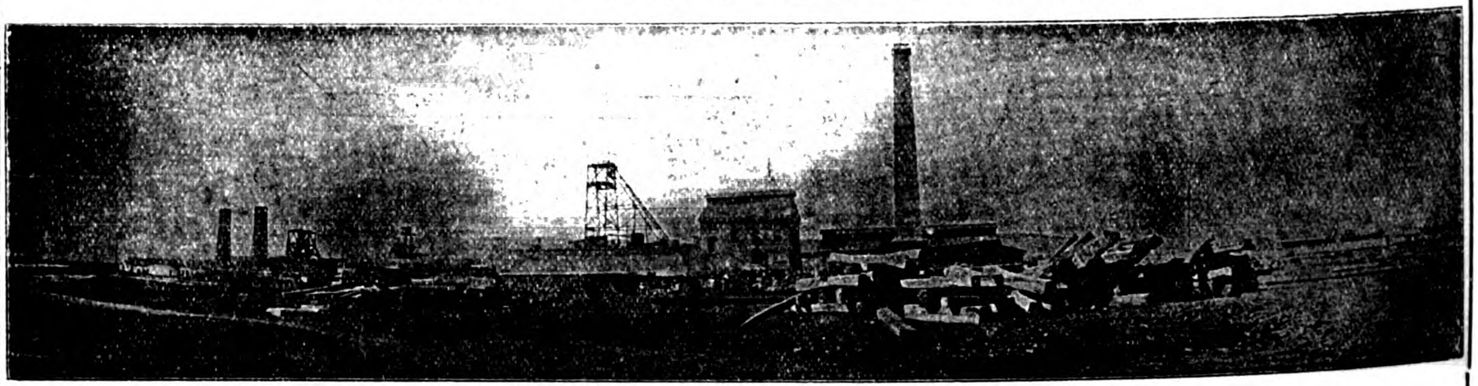
SHANGHAI, HANKOW, TIENTSIN.

# CHINESE GOVERNMENT RAILWAYS

## THE TAO-CHING RAILWAY

### TAOKOU TO CHINGHUA

(CHINESE GOVERNMENT HONAN LINE)



GENERAL VIEW OF COAL MINES ON THE LINE OF THE TAO-CHING RAILWAY

## "China's Road of Anthracite"

THE TRAINS OF THIS LINE CONNECT AT SIN-SIANG-SIEN WITH THE THROUGH SERVICE OF THE PEKING-HANKOW RAILWAY. IT TAPS THE GREAT ANTHRACITE COAL DEPOSITS OF SHANSI, AND CONVEYS THE PRODUCTS OF THE MINES TO THE NEAREST NAVIGABLE RIVER.

# Diamond Chains

FOR

## Cycles and Motorcycles

Diamond Cycle Chains (furnished ½ or 1-inch pitch) are built for strength and wearing. High carbon steel, capable of withstanding a pressure of 140,000 pounds to the square inch, is used for the side links. All wearing parts, made from steels of special analysis, are heat-treated by a process recognized by authorities on heat treating as the most advanced.

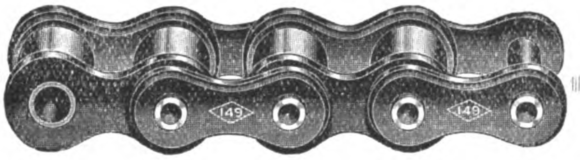
No. 149—⅝-inch pitch Diamond Motorcycle Chain was designed to meet the most severe service conditions. A special alloy steel is used for the rollers, making them practically unbreakable. The wearing parts are hardened by the same process as used for those of our heavy truck chains. Consider what these features mean in motorcycle service.

*Special care given to Export shipments.*
*Correspondence solicited in any language.*
*Catalogues, samples and prices on application.*

Australian Representatives: Acme Cycle Company, Melbourne.
Russian Representatives: International Manufacturers Sales Co., Moscow.

**DIAMOND CHAIN & MFG. COMPANY**
**Indianapolis, Indiana, U. S. A.**

Cable Code—A. B. C., 4th and 5th Editions.
Cable Address—"*Chain*", Indianapolis.



# GOULDS PUMPS

FOR EVERY SERVICE

Goulds Pumps are well-known in every civilized country, in most of which they have been used for many years.

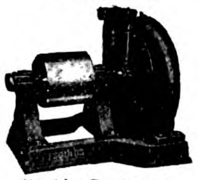
They are built in hundreds of different styles and sizes to meet every known pumping condition.

If you want a pump for any service—you are sure to find one in the complete Goulds Line.

Because of the very complete line many dealers prefer to sell Goulds Pumps.

Goulds Cistern Pump

Goulds Pyramid Single Cylinder Pump



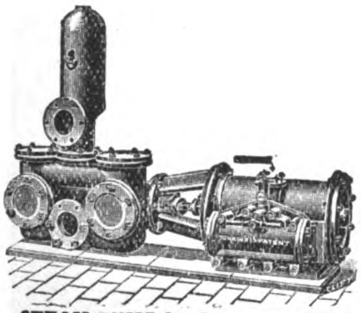
Goulds Centrifugal Pump

***Write for Catalogue***

**The Goulds Mfg. Co.** Main Office and Works **Seneca Falls, New York, U.S.A.**
*Cable Address: "Glavis, Seneca Falls"* *Codes: A.B.C., Liebers, West. Un.*
**ANDERSEN, MEYER & CO., Ltd., Shanghai, Tientsin, Peking, Kalgan, Hankow, Hong Kong**
**BAGNALL & HILLES, Gomei Kaisha, Yokohama PACIFIC COMMERCIAL CO., Manila**
*Agents for Power Pumps*

# *WE MANUFACTURE*
# PUMPS
## FOR EVERY PURPOSE

**To be worked by HAND, STEAM, BELT, WIND, WATER or ELECTRIC POWER.**



STEAM PUMP for General Purposes.

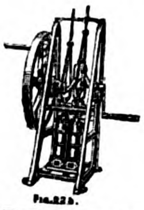
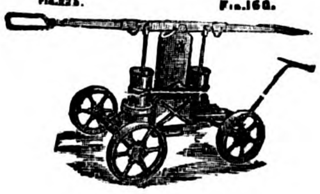
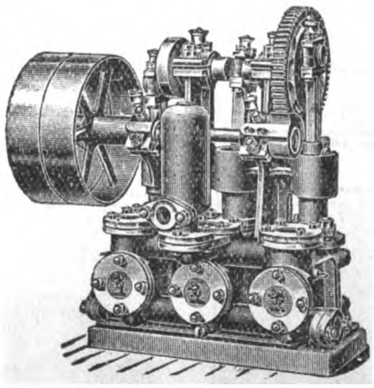
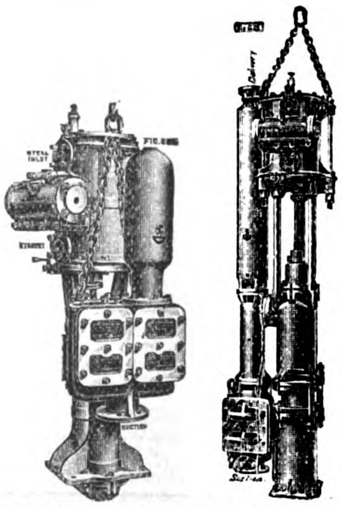


Fig.82b.

Fig.168.



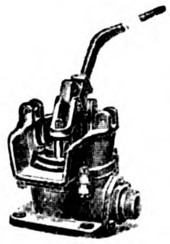




SINKING PUMPS for COLLIERIES, MINES, Etc.

Fig.191.

***Write for "Eastern" List.***



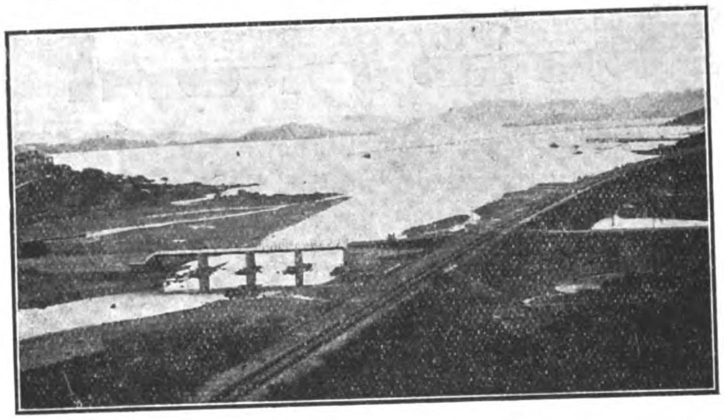
# JOSEPH EVANS & SONS
(WOLVERHAMPTON) LTD.

CULWELL WORKS,
**WOLVERHAMPTON, ENGLAND.**

Fig.188.

# CANTON-KOWLOON RAILWAY

VIEWS ON THE BRITISH SECTION (22 MILES) VIEWS ON THE CHINESE SECTION, 89 MILES. (Chinese Government Railways)

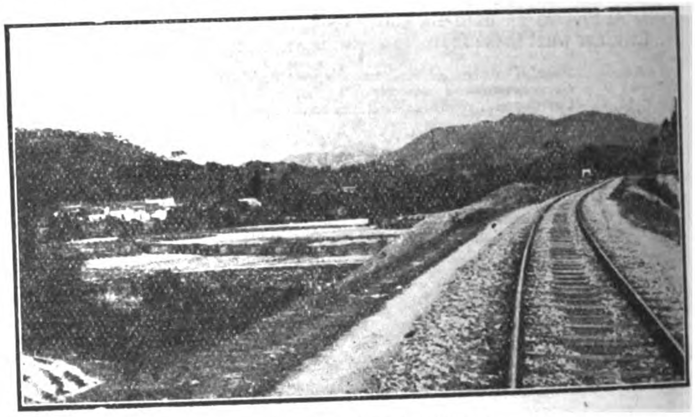


CANTON-KOWLOON RAILWAY—APPROACH TO KOWLOON

SCENERY NEAR CHEUNG MUK LOW—C. K. RAILWAY

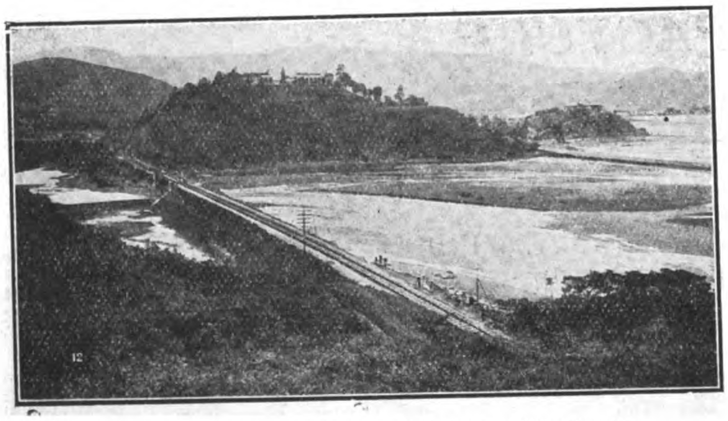
**QUICKEST AND CHEAPEST ROUTE BETWEEN CANTON AND HONGKONG THROUGH VARIED AND BEAUTIFUL SCENERY**

CANTON-KOWLOON RAILWAY—SCENE ALONG ROUTE

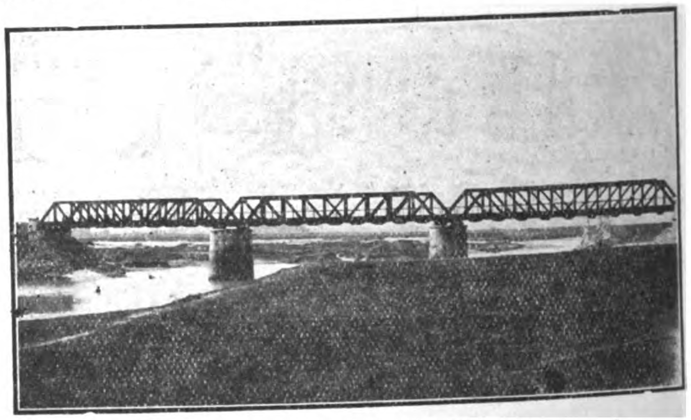


SCENERY ALONG ROUTE

**THREE EXPRESS CORRIDOR TRAINS EACH WAY DAILY—HOT MEALS AND OTHER REFRESHMENTS SERVED**

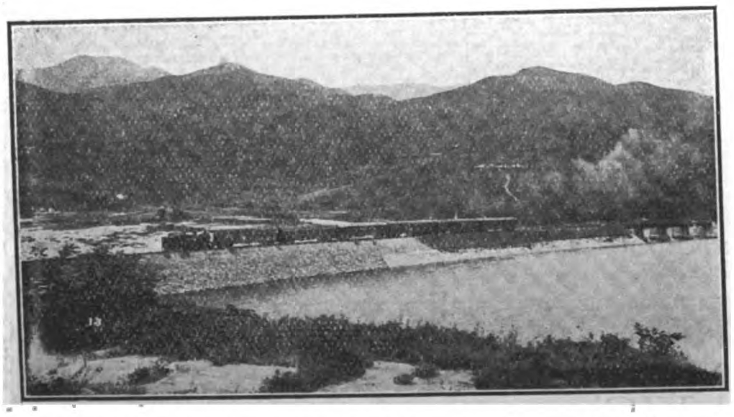


CANTON-KOWLOON RAILWAY—CROSSING TIDE FLATS

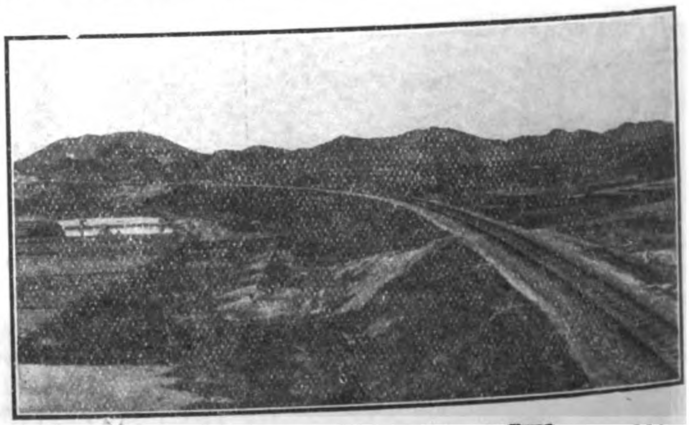


KAN SUI BRIDGE—C. K. RAILWAY

**3½ HOURS BETWEEN UP AND DOWN TRAINS FOR BUSINESS MEN OR TOURISTS AT CANTON OR HONGKONG**



CANTON-KOWLOON RAILWAY—EMBANKMENT APPROACH TO BRIDGE



GRAND CURVE NEAR SHEUNG PING

## TIME TABLE

Leave Hongkong (Kowloon) *8.05, 9.30 a.m., *12.10 p.m., & 2.30 p.m.
Arrive Canton (Tai Sha Tou) 11.45 a.m., 5.30, 3.50 & 7.15 p.m.

Leave Canton (Tai Sha Tou) *7.25, 8.35 a.m., *12.30 p.m. & *3.20 p.m.
Arrive Hongkong (Kowloon) 11.00 a.m., 4.35, 4.00, 6.55 p.m.

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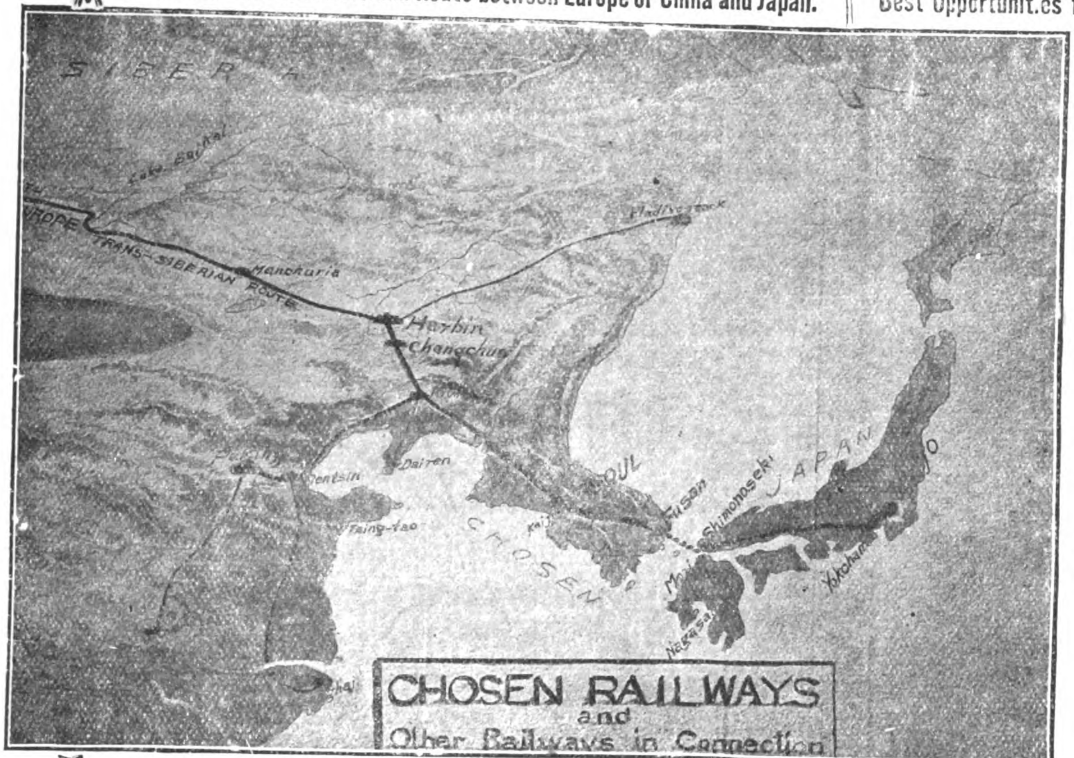


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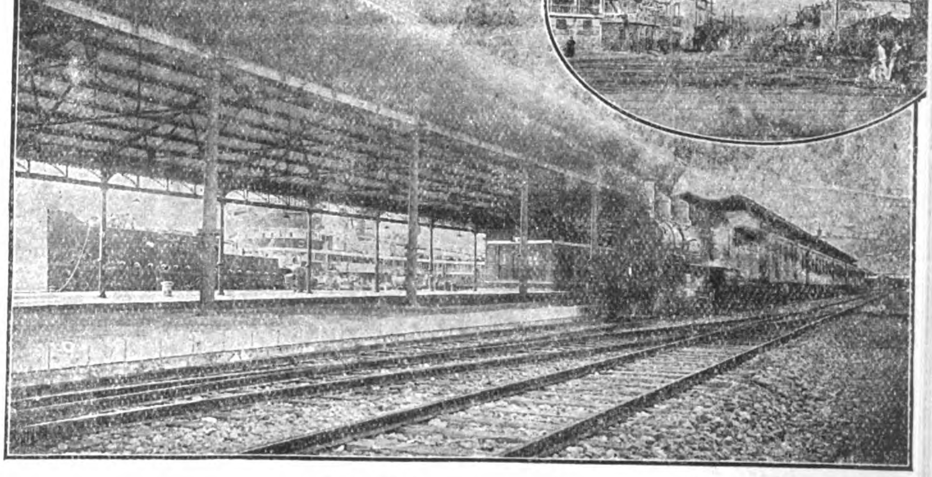
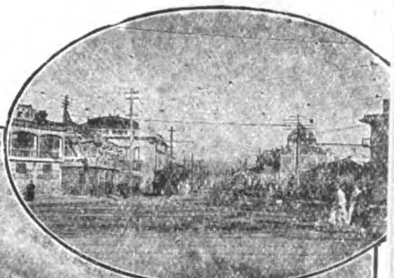


Fusan Pier



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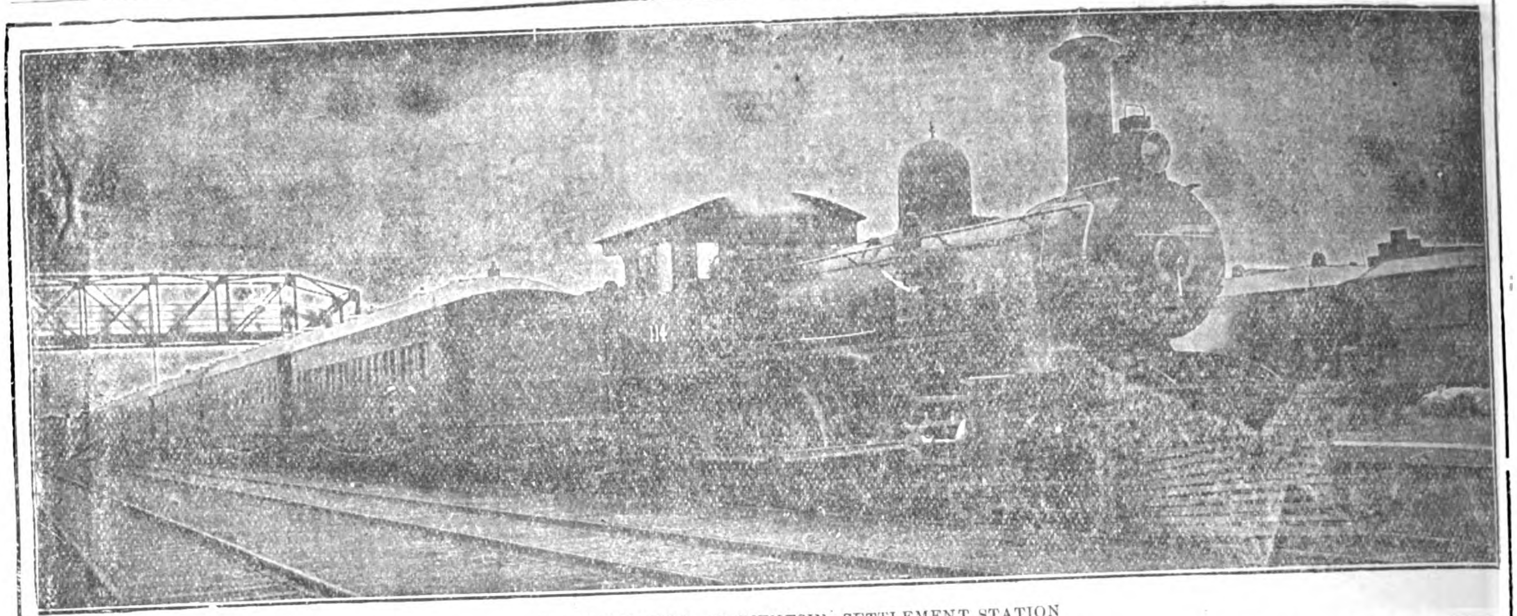

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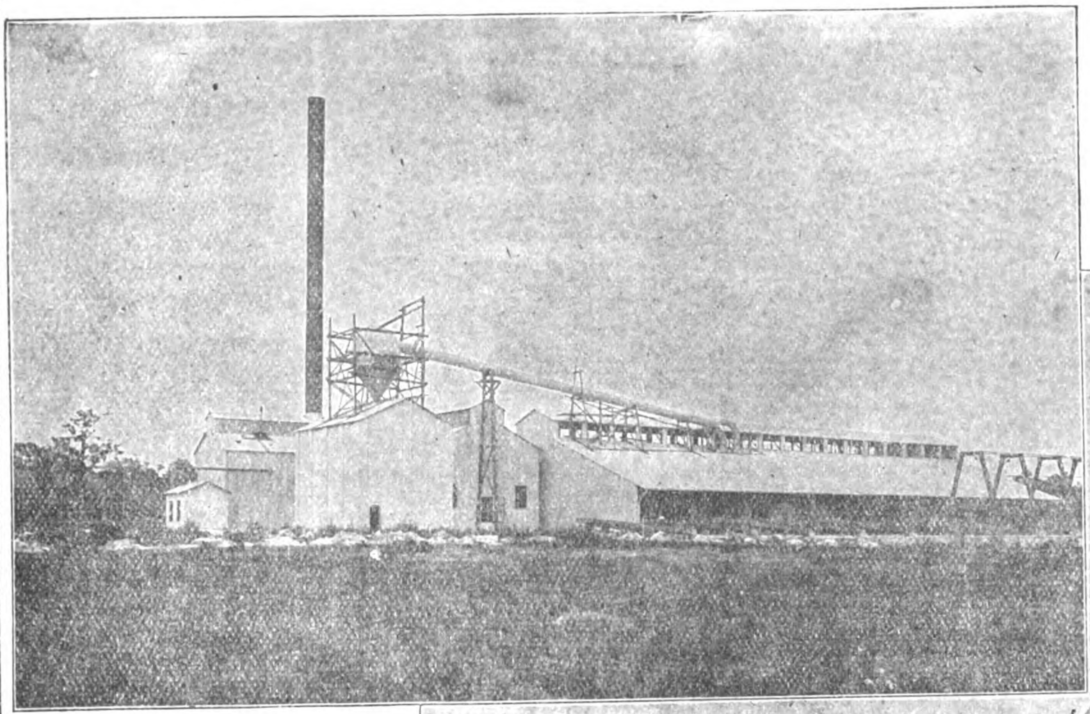

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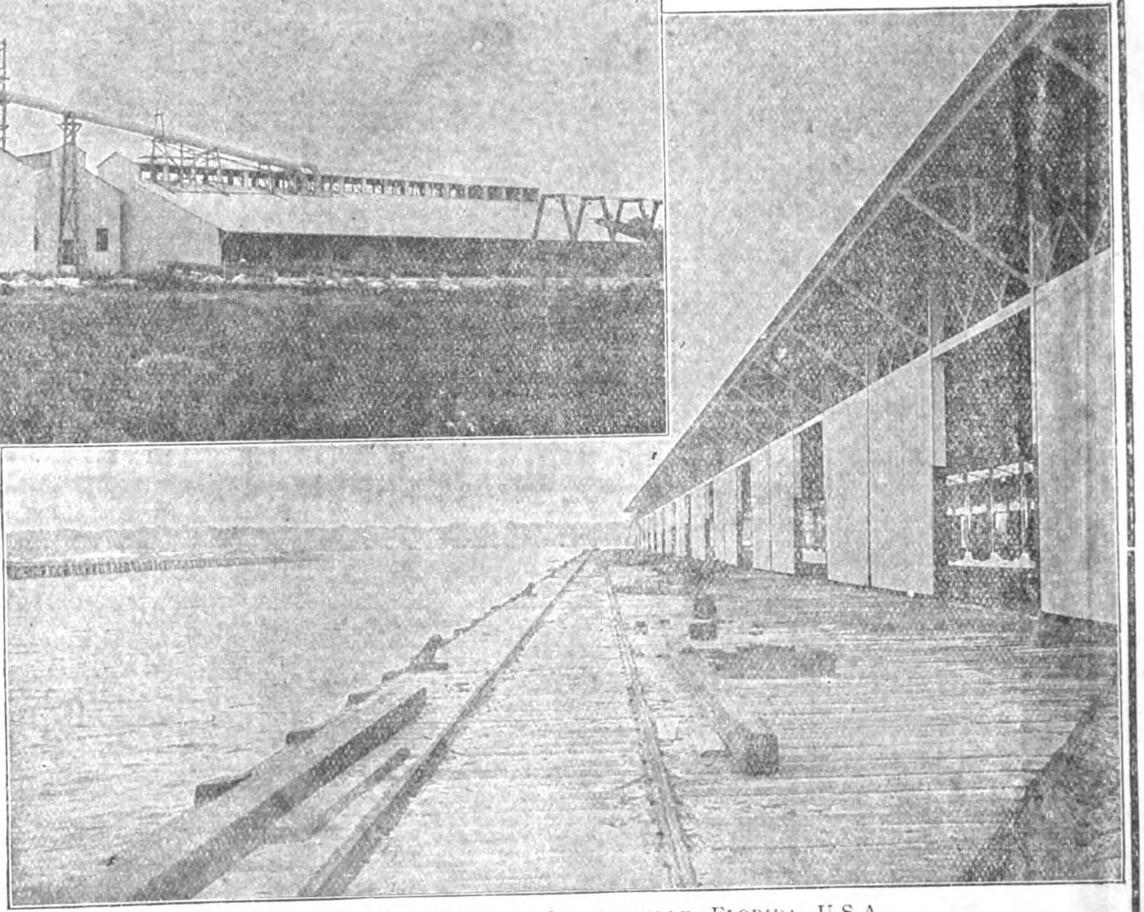

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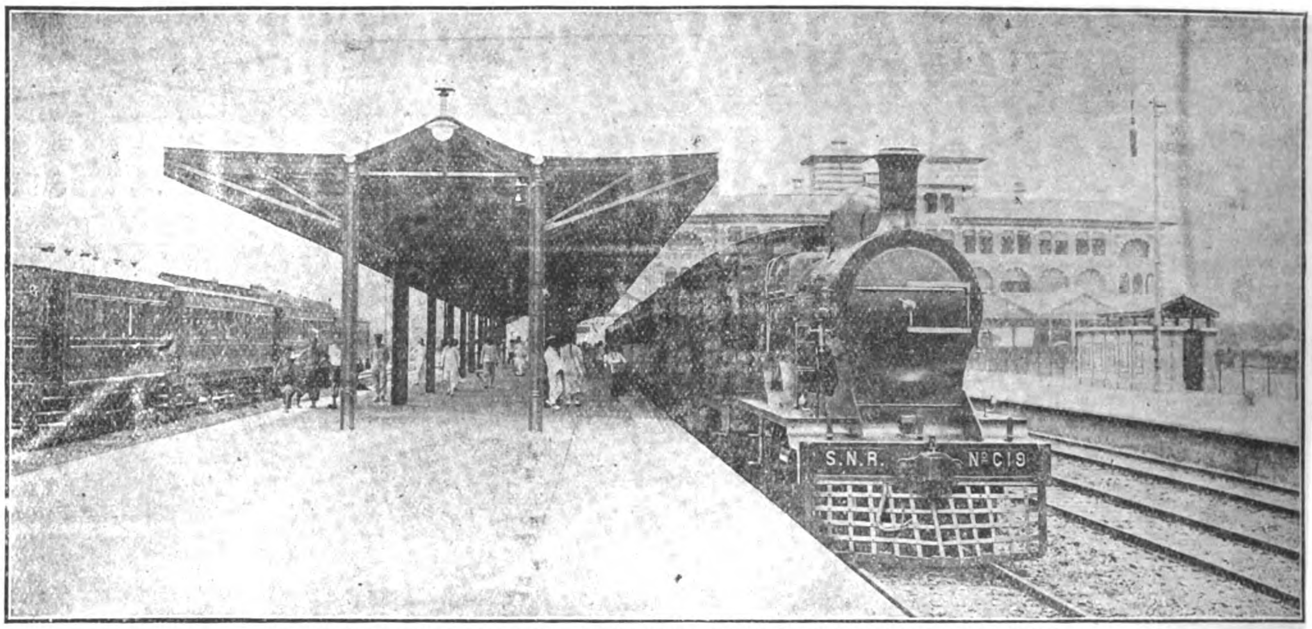


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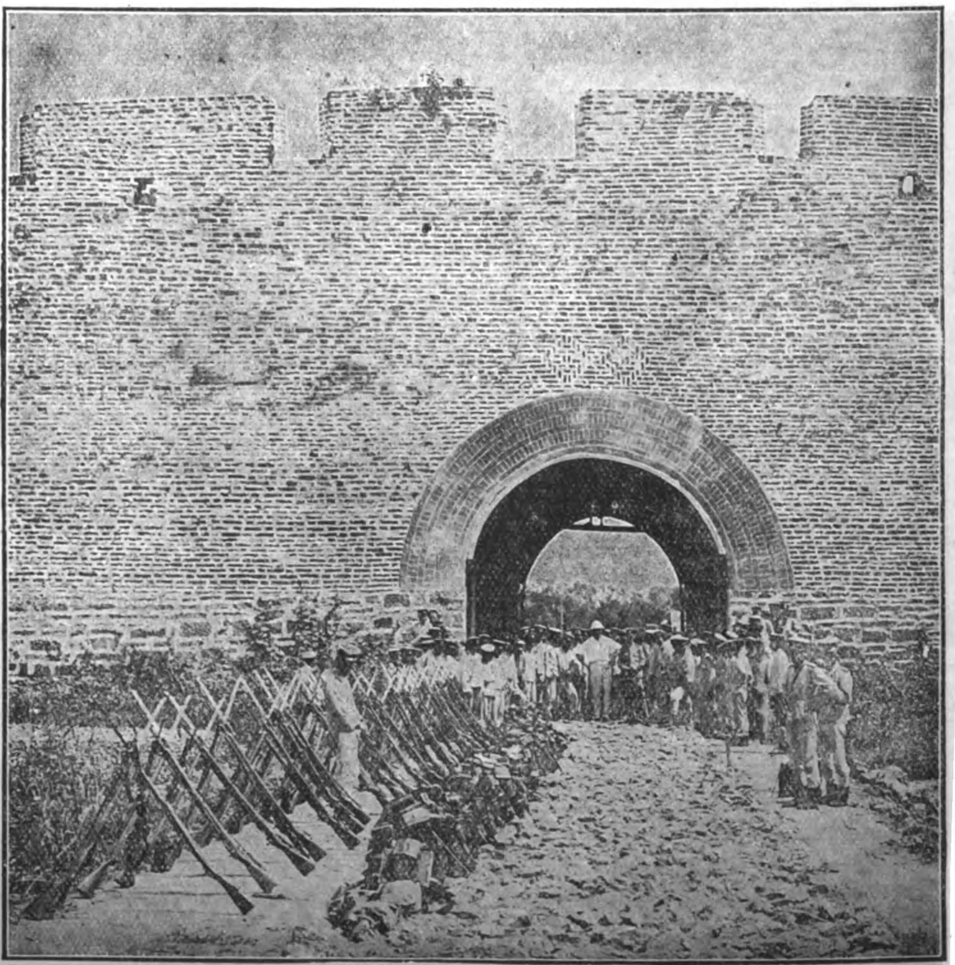

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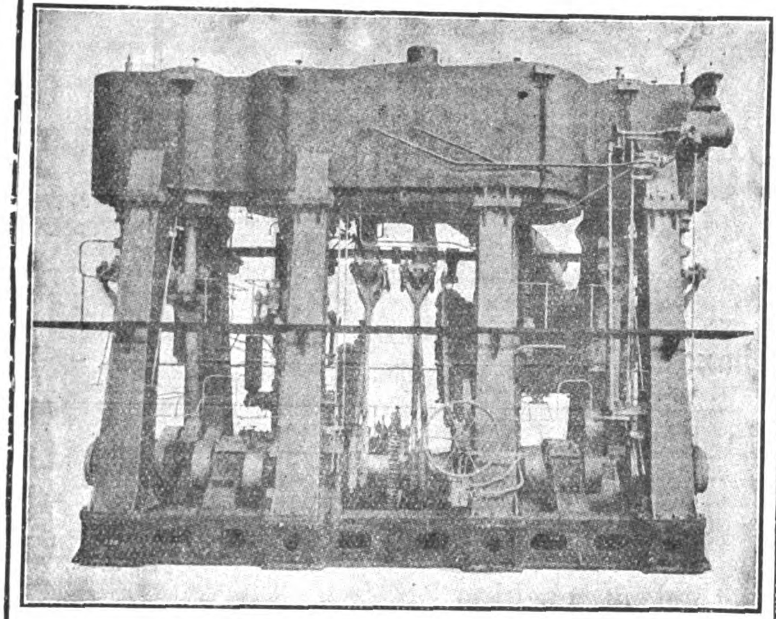

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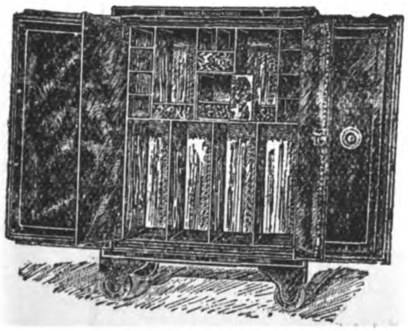

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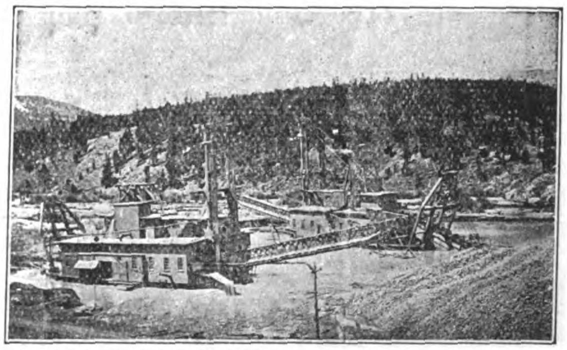

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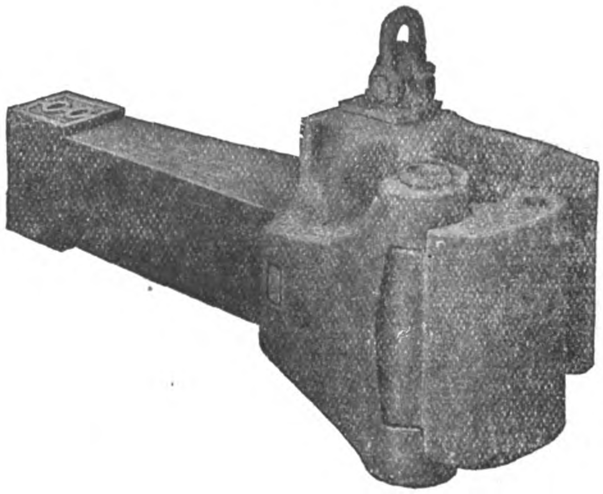

THE latest development of the Janney type of M. C. B. Coupling originally introduced and promoted by this company. This coupler has all the simplicity of the early type of the Janney coupler, and also has the up-to-date features of a "Lock-to-the-Lock," "Lock-Set," and a "Knuckle-Opener," and complies fully with all the requirements and recommendations of the M.C.B. Association of the U.S.A.

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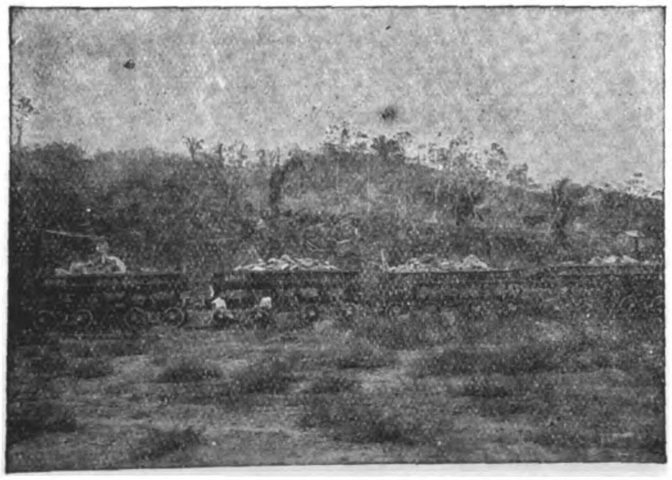

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# THE FAR EASTERN REVIEW

COMMERCE :-: ENGINEERING :-: FINANCE

VOL. XIII. SHANGHAI, NOVEMBER, 1916 No. 6


# THE OPEN DOOR PROBLEM AND ITS SOLUTION

What is the correct definition of the Open Door?

Does it mean that any Power is at liberty to subvert or circumscribe the sovereign rights of the Chinese Government within spheres delimited by the "non-alienation" declarations of 1898, if the door of equal opportunity remains open for trade and industry within that sphere, but is barred and locked against the execution of any development contract requiring the signature and sanction of the Chinese Government?

In the answer to this, lies the correct interpretation of the doctrine. Around this one point centers the differences of opinion between those Americans friendly to China and those who side with Japan. The FAR EASTERN REVIEW has accepted that definition of the principle conveyed in the Note communicated to Lord Salisbury by Ambassador Choate, in which the following clear and unmistakable words are used:

**"It is the sincere desire of my Government that the interests of its citizens may not be prejudiced through the exclusive treatment by any of the controlling Powers within their respective 'spheres of interests" in China, and it hopes......to remove dangerous sources of international irritation, and thereby hasten united action of the Powers at Peking to promote administrative reforms so greatly needed for strengthening the Imperial Government and maintaining the integrity of China, etc."**

We deduce from these words, that the principle underlying the Open Door is based on the complete recognition of China's administrative independence, which in turn is only another phrase for the uninterrupted and unimpaired continuance of the sovereignty of the Chinese Government. We hold that when the Governments of Russia and Japan affix their signature to a solemn covenant phrased as follows:

(**"The Imperial Government of Russia declare that they have not in Manchuria any territorial advantages or preferential or exclusive concessions in impairment of Chinese sovereignty or inconsistent with the principle of equal opportunity, Japan and Russia reciprocally agree not to obstruct any general measures common to all countries, which China may take for the development of the commerce and industry of Manchuria,"**)

that these words must be accepted at their full face value and have no super-textual or hidden meaning. We believe therefore, when in accord with legitimate treaty rights, an American financial corporation enters into an equitable and honorable contract with the sovereign state of China for the railway development of Manchuria, and this contract is subsequently annulled through the opposition of Russia and Japan and treaties are wrung from China at the point of the bayonet, conferring on these Powers exclusive rights within Manchuria, that the door of equal opportunity has been banged to, locked, bolted and buttressed against further American participation in the development of this region, and the sovereign rights of the Chinese Government are impaired to the extent that it cannot enter into another contract with an American citizen for the development of the province.

Perhaps we are biassed. Perhaps our powers of reasoning are warped. Perhaps the accusation advanced by the pacifist organs of America are correct, and we are unscrupulous and influenced by the Chinese to sow discord and create strife because of the amicable way other nations have endeavored to advance their benificent policies in this defenseless country. It may be that the pacifists are right after all, in their contention that so long as Japan officially declares that the door of equal opportunity is still open to our trade in Manchuria, Mongolia, Shantung and Fukien, we must be satisfied, and not worry about the greater principle involved in the impairment of China's sovereignty and of our rights to enter into a contract with this sovereign state for development purposes. But somehow we cannot accept this definition of the Open Door. It goes against the grain. It rasps. To accept this interpretation one must ignore the greater underlying principle, that principle which the manhood of other lands are now defending with their lives, that principle which says that the sanctity of treaties must be preserved so that the nations of the world may live in peace with each other in the years to come.

"We cannot apply one principle in one part of the world and another in another," and therefore we cannot approve any definition of the Open Door doctrine which fails to admit the full and unimpaired sovereignty of the Chinese Government and the right of an American corporation to enter into an honorable contract with that government for the development of such railways in China as are not already promised to others.

We frankly admit that just now the principle cannot be enforced, but this does not destroy the principle, or exonerate Japan or any other predatory nation, whose only justification for its violation rests in the length of its bayonet and the strength and willingness to use it. If Japan is justified in closing the door to American participation in the development of Southern Manchuria, Inner Mongolia, Shantung and Fukien, and the United States Government in its wisdom did not protest or feel called upon last May to protect its rights under the treaties, resting content with placing its position on record, then by what reasoning can the administration now defend its action in raising the issue with Great Britain, France and Russia at a time when these Powers are fighting for their existence. If Japan is permitted to close the door to our activities in her special spheres of influence, and we made no move to protect our interests, then Russia, Great Britain and France are also justified in closing the door to us in their respective spheres. If,

for good and sufficient reasons, the United States Government could not or would not face the issue alone with Japan, an explanation is due to the country as to why the issue has been raised this year with those Powers who are fighting for their existence in Europe, and on whose friendship America must depend to bring about a peaceful and equitable solution of the question.

Mr. David S. Rose the ex-Mayor of Milwaukee, and counsel for the Chinese-American Products Exchange Company is telling the people of the United States "that the Siems-Carey railroad contract can be duplicated not only once, but more than once." The FAR EASTERN REVIEW now places itself emphatically on record by stating that the contract cannot be duplicated except by the permission of those Powers whose "spheres of influence" will have to be traversed. There are few railway propositions in China that American capital is at liberty to take up at this time. The speeches of Mr Rose in the United States foreshadow further efforts to interest Americans in other Chinese railway contracts. Before this is undertaken the question of the Open Door will have to be settled, and some definite arrangement arrived at, otherwise it may be taken for granted that Great Britain, France or Russia will not consent to further American activities in China which complicate the international political situation. We cannot expect other nations to surrender their pretensions and permit America to build the superstructure on the foundations they have carefully laid unless America is willing to assume her share of the burden for the protection of a doctrine originated by John Hay, which we have since relied on others to maintain for us.

The preservation of this principle is vital to the future of American trade and prestige in the Orient. We may go further and assert that the very security of America itself will depend on its perpetuation, for, if we abandon our principles in the Orient, it will not be long before other nations will follow us up and put the Monroe Doctrine to the test. Principles are all right when they can be enforced. Once surrendered they can never be recovered except through the application of force. Therefore the FAR EASTERN REVIEW believes that the nation will not sacrifice the principle for the sake of the dollar. We cannot always permit Americans to play with matches in the international powder magazine, and enter into contracts with the Chinese Government for specific railway lines that infringe the rights of others, and then inform the foreign governments that we had no intention of causing trouble, that we didn't know the thing was loaded.

Somebody blundered. The facts exonerate the American contractors and the financiers, who, frankly ignorant of the danger, were guided and advised by others who did know, or should have known. If the administration is responsible it should manfully shoulder the burden to preserve its dignity and the self-respect of every American firm in China.

Is there a possible peaceful solution? The *Chicago Tribune* says "that the nation would shriek if it was proposed to defend the Open Door doctrine." On the other hand, if the concensus of American editorial opinion in any way voices the sentiment of the nation, we believe the femininity implied in the shriek would be drowned in another and more manly note. The *Springfield Republican* is the one American newspaper which seems to have the right grasp on the situation when it says:

"It must not be forgotten that this is a world problem in which other nations are quite as keenly interested as the United States." This is the correct note. The United States cannot be expected to go to war with any one power over principles and issues to which all the others have subscribed, and in which all are equally and vitally interested. If any one Power, taking advantage of the life and death struggle of the other parties to the covenants, seeks to assure for itself special rights and privileges in violation of the international law covering the situation, the logical and statesmanlike course is for the United States to patiently await such time as the question can be thrashed out in a conference of all the interested parties.

This course has been accepted by leading statesmen of the United States as the proper one for the nation to follow, and we have reason to believe that it is not out of harmony with the policy of the administration. The tenor of the American Note of May 16 of last year outlining the position of the American Government by refusing to recognize any treaties or agreements impairing its rights or the integrity of China, plainly forshadows an intention to seek an amicable solution to the problem as soon as the other Powers have time to discuss the question in conference.

If such a conference should support the position of Japan: if Japan, by reason of assistance to her Allies can persuade them to recognize the accomplished fact in Shantung, Fukien, Manchuria and Mongolia, may not the others in self protection also determine to preserve their exclusive rights within their respective spheres? Against such a combination the United States would be powerless. If Britain and France stand with Russia and Japan the principle of the Open Door goes by the board and the United States is isolated in China. If the principle the Allies are defending in Europe does not apply to China, and the Open Door doctrine is relegated to the diplomatic scrap heap and the spheres of special interests are revived, the question then arises, what is America going to do about it and how can American capital be legitimately employed in the future development of China, without abandoning the principle and nullifying the position of the American Government expressed in the Note of May 16 of last year?

The peaceful solution of the problem would then seem to lie in some form of American financial co-operation with the others in the development of China's resources and transportation facilities. Judge Gary and other responsible Americans in their whole-hearted desire to find an amicable solution, are now advocating American co-operation with Japan. While this solves one part of the puzzle, we cannot overlook the important fact that Great Britain also has immense vested interests in China, and has as much justification in erecting a ringed fence around her great Yangtsze Valley preserve as Japan has in placing "keep-off-the-grass" signboards in Fukien, Shantung and Manchuria. The principle must also be extended to cover the equally just pretensions of France to the same special privileges in the island of Hainan and the Chinese provinces bordering on Tongking. Co-operation with Japan in her spheres of influence must carry with it the recognition of the identical same doctrine in the Yangtsze valley and South China. American co-operation with Japan in the development of China must be confined to those spheres where Japan holds the dominant position and cannot consistently be extended to cover joint American-Japanese enterprises for the exploitation of the British and French spheres. In other words Japan cannot close the door to equal participation in her spheres and expect to be received with open arms in the spheres of her Allies. The agreements between Japan and her Allies provide particularly for reciprocal recognition of each other's rights and interests. We cannot apply one principle as the solution of our difficulty with Japan, and refuse to admit the same principle in the case of Britain and France where identical conditions prevail.

If American financial co-operation with Japan is to be accepted as the peaceful solution to the problem and it can only cover the Japanese spheres of influence, then the doctrine is tantamount to a surrender of the Open Door principle and opposed to the spirit of the American Note of May 16 of last year. If we are to co-operate with Japan in the development of her spheres, this should also carry with it the preservation of the principle involving the right of an American corporation to operate independently in conducting legitimate business with the sovereign state of China. If, however, we are to surrender the principle for the sake of harmonious relations with Japan we must prove false to our protestations of friendship for China, and by the same reasoning we must also abandon our position on the Open Door, and recognize in turn the special rights of Great Britain, Russia, and France as defined in the "non alienation" declarations of 1898.

We will not be permitted by the other Powers to side-step a vital question with Japan, and then precipitate the same issue with them at a time when they are prevented from defending their interests. Such a course is unmanly and un-American. Although the tendency of Japan's present policy is to revert to

the closed door as far as development contracts go with the Chinese Government within her spheres, the British and French are disposed to stand by the broad principles of the Hay Doctrine and cordially welcome American participation in the development of China's resources, even within their own special spheres. They have not sent special commissioners to America to tell us we must co-operate with them in the development of China, but instead say, in effect, "Come in, America, and help develop China, but in doing so please recognize our position and don't press too hard on our acquired rights." France and Britain know that when the time comes, they can depend on the faithful fulfilment of the promise of the American bankers to co-operate with them. They rest content in the assurance that they have a first claim on that financial co-operation. It is not necessary for them to remind us of that obligation.

If, however, Americans are to have a free field for the acquisition of development contracts with the Chinese Government, which undermine or nullify the special privileges of Britain and France in strategic zones, it is certain that this friendly sentiment will be replaced by one of distrust and suspicion, and, when the time arrives, and we need their real friendship in the final solution of the problem, we may find them lined up solidly with Japan and Russia, and American diplomacy will then receive a set back from which it can never recover. In the solution of this problem also rests the fate of China. America cannot afford to be the instrument which may deprive China of her last chance of preserving intact her sovereignty.

If we must come into China at this time, and there are no restrictions or supervision of the State Department over the selection of railway lines for American contracts, let us at least have the good taste and diplomacy to specify such lines as do not seriously conflict with the interests of our friends, or on the other hand, let us find some way for mutual co-operation that will recognize and perpetuate the Open Door principle, uphold our diplomacy and the position of our Government, and contribute our share towards helping weak China to maintain her independence. Any other course spells certain humiliation to America and American interests, and inevitable disaster to China's sovereignty.

GEO. BRONSON REA.

# CHINA'S NEW FOREIGN MINISTER

## The Veteran Diplomat Dr. Wu Ting-fang Appointed

That Dr. Wu Ting-fang has been appointed Minister of Foreign Affairs in the Cabinet of the Republic of China and is actually taking up the office probably surprises himself more than anyone else. Although he took a foremost place in the Revolution which overturned the Manchu Dynasty he never aspired to office, and many efforts on the part of Peking officials to persuade him to transfer his energies to the Capital failed. It is a distinct compliment to Dr. Wu's septuagenarian vitality and wisdom that he has been selected and accepted by both houses of Parliament so unanimously. Already Mr. Tang Shao-yi had refused the position and Parliament had rejected the nomination of two others on the ground that their leanings were towards the monarchy movement originated by Yuan Shih-kai and it was thought by most observers that the legislators were bent upon placing in the important vacant office one of the young men educated abroad. The nomination of Dr. Wu, however, met with their acceptance, his age notwithstanding. In years the new Minister is a veteran, but in spirit he is a youth. He says himself that he has still an ordinary man's span to enjoy, and if truth be told he really faces life's problems with much less anxiety and much more courage, light-heartedness and vim than the average person in the prime.

DR. WU TING-FANG

Perhaps Dr. Wu is better known to-day in foreign lands than any other single Chinese. He has travelled much, and his posts abroad, especially as Minister at Washington, secured for him hosts of friends, and what is more important, an acute knowledge of world problems. His training and his experience abroad ought to stand him in good stead, though it must be confessed that he has a difficult row to hoe immediately he sets his hand to business. There are several very awkward international questions to which he will have to address himself, questions in connexion with which Chinese feeling has been wrought to high pitch, but those who know him believe that he will be able to effect adjustments much easier than anyone else.

Born in Kwangtung Province he was educated at St. Paul's College, Hongkong, and subsequently studied law at Lincoln's Inn, London, where he was called to the Bar, with the distinction of being the first Chinese Barrister. For a time he acted as a Magistrate in Hongkong, and in 1896 was appointed by the Throne to be Minister to the United States, Spain and Peru. In 1903 he was made Vice-President of the Board of Commerce in Peking and Commissioner for revision of treaties. Later he became Vice-President of the Board of Foreign Affairs and Vice-President of the Board of Punishments. In 1905 he was

made Commissioner for the Revision of Laws, and a Judge of the International Court of Arbitration at The Hague. In 1907 he was again sent to America as Minister and returned in 1910 after visiting Europe. When the Revolution broke out he was placed in charge of foreign affairs by the Revolutionary committee, with headquarters at Shanghai, and did much to secure for the revolutionary cause the sympathy of foreign nations against the effete Manchus.

At the time that it was decided to make peace between the Manchu and revolutionary forces Dr. Wu was appointed to head the delegates representing the South, Mr. Tang Shao-yi being the leader of those from the North. Dr. Wu's opening speech at the conference was so effective that he virtually converted Mr. Tang Shao-yi to the revolutionary cause on the spot, and this fact did more than anything else to convince Yuan Shih-kai of the hopelessness of any endeavor to retain the Manchus on the Throne. The result was the early abdication of the Manchus and the establishment of the Republic, an event with which the name of Dr. Wu will ever be associated. When the Republican Government came into being Dr. Wu retired to private life, nor could he be induced to take office. He had made up his mind to write a book on his American experiences and to read and study philosophy. He so employed himself through the turmoil of 1913, when a revolution was attempted to put Yuan Shih-kai out of power, and through the recent revolution against the monarchy. Dr. Wu associated himself with neither of these, except for a strong letter he wrote personally to Yuan Shih-kai urging him to retire from the Presidency and refrain from his attempt to secure the Throne.

From the quiet surroundings of his beautiful home in Gordon Road, Shanghai, he has now been dragged to the turmoil of Peking politics, and if he is to win through the difficulties that have been piled up for him it will be by sheer force of his unswerving optimism and faith in the common sense of his countrymen backed by his irrepressible smiles. His policy will be dictated, he told an interviewer, by the policy of the Government, though he is an opponent of feebleness in intercourse with foreign nations. He is for fairness and frankness in all dealings. Unhappily this is not a time when China can essay to retrieve past diplomatic mistakes by anything savoring of "strong" action, for such is very likely to be misinterpreted, and we think that no one need fear that Dr. Wu will misjudge the situation in a manner likely to lead to greater difficulties than those that at present exist. He comes to the office of Foreign Minister under worse auspices than any Minister has suffered for many years past, and his friends and well-wishers will hope that the tangled skein will be unravelled by him deftly, with satisfaction to China's foreign friends and with good to China.

# CHINA'S NEW VICE-PRESIDENT

## Election of General Feng Kuo-Chang

In October and November, 1911 General Feng Kuo-chang commanded the Imperialist troops against the revolutionary forces of General Li Yuan-hung and the late General Huang Hsin at Hankow and Wuchang and defeated them bloodily, the city of Hankow going up in flames in the process. In November, 1916, such being the curious mutability of human affairs, the Parliament at Peking, composed mostly of ardent and active supporters of the revolution, elected General Feng Kuo-chang as Vice-President of the Republic, the General whose army he handled so badly at Hankow being the President of the Republic by virtue of the death of Yuan Shih-kai. There is, however, nothing paradoxical in this situation. General Feng led the forces of the Manchus because he was then a Manchu official. His "conversion" to Republicanism came later, and came at a time when it proved of the utmost value to the Republican cause. As Military Governor of the rich Province of Kiangsu, in which are the importa:t cities of Shanghai, Nanking and Soochow, he stood silent when Yuan Shih-kai was searching for aid in his monarchical plans among the various powerful generals in the country.

By maintaini.g "neutrality" on the monarchy question, and, as some say, by giving silent encouragement to the late General Tsai Ao when he raised the banner of rebellion in Yunnan Province, General Feng materially aided the South, and perhaps history will show that his stand really saved the Republic, though at times the Southern leaders were loth to trust him because of his consistent refusal to commit himself openly to their cause. He was an ally sought by both sides, and contrary to the general belief of those who imagined they knew the process of Chinese thought and the influence thereon of old associations and time-honored ties he steadfastly held out against the allurements, and it may be taken that they were extravagant allurements, tendered by Yuan Shih-kai and his followers. Remembering what potent claims a patron in China has upon his proteges and remembering how much General Feng owed to Yuan Shih-kai for personal elevation, apart from the significant fact that he was married to the adopted daughter of Yuan, it must be admitted that he possessed great courage even to sit in silence through the strenuous upheaval caused by the efforts to materialise the ambition of the then President and secure for him the throne. Whether that silence was dictated by conviction that Republicanism was the better form of government for China, or whether General Feng shrewdly read the signs of the times and saw by them the near end of the monarchists and the would-be monarch, is likely never to be known. At the moment he has to be given the credit of favouring Republicanism, for he is now Vice-President of the Republic, though there are many who hold firmly to the belief that he is not so much opposed to monarchy as he was to Yuan Shih-kai practically usurping the old throne of the Manchus. Be that as it may General Feng Kuo-chang has now earned the approbation of a very large section who opposed the monarchy actively and many others who passively deplored it, nor is he condemned when his attitude towards Yuan Shih-kai is measured by Chinese ethical standards. As a public man he is fortunate in escaping a desperate situation with colours flying. There are few in China who could accomplish such a desirable thing.

Leaving out of consideration the political reasons which might have lead to the selection of General Feng Kuo-chang as Vice-President he has decided qualifications for the post when compared with other probable candidates. He is a Chinese who has had great experieuce and knowledge of his own countrymen, attributes of great value at this moment of transition in China, and may be relied upon to prevent any dislocation by too extreme a swing of the pendulum towards the ill-considered adoption of ultra-modern notions.

In his early Chinese classical examinations he passed successfully and became a Licentiate of the First Class, later entering upon a military career as a student at the Peiyang Military College, where, under Yuan Shih-kai, he became a close associate of General Tuan Chi-jui, now Premier and Minister of War, and of General Wang Shih-chin, now Chief of Staff and former Minister of War. Feng Kuo-chang, Tuan Chi-jui and Wang Shih-chin grew up as acknowledged henchmen of Yuan Shih-kai, selected by the latter because of their talents, and eventually they rose to the highest positions in the modern army which came into existence chiefly owing to Yuan's creative ability. During his term in college General Feng displayed abilities of no mean order, and particularly in mathematics and tactics did he rank high. He ultimately became Director of the Paoting Military Officer's Training College, and in January, 1906, was appointed Director of the Nobles' Training College, with the rank of Deputy Lieut.-General. While in this position he petitioned the Throne to have Military Training Bureaux

established, and being successful was appointed Superintendent of the organization. Upon his suggestion, too, a Military Council in the Board of War was appointed in 1907, of which he became the first Director. In 1909 he was created Director-in-Chief of the General Staff. When the Revolution broke out at Wuchang in 1911 he was despatched there by the Throne in command of the first Imperial Army, and driving the Revolutionary forces under General Li Yuan-hung and General Huang Hsin out of Hankow and Hanyang bade fair to secure final victory for the Manchus. Hostilities were, however, suspended and being created a Baron of the 2nd class in return for his valiant services he was recalled to Peking to assume command of the Imperial Guard. In December of 1911 he was appointed Lieutenant-Governor of Chahar.

When General Feng and General Tuan Chi-jui realised in 1912 that the Manchu cause was scarcely worth fighting for they declared themselves in favor of recognition of the popular demand for a change of government and later on, being supported by the late Yuan Shih-kai, the abdication of the Manchus was effected. With the establishment of the Republic General Feng became Chief of the Military Council established by President Yuan Shih-kai, and held that post until he was transferred to Tientsin as Military Governor of Chihli Province in September, 1912, though he still retained his post as Commandant of the Imperial Guard. During the rebellion in 1913 he was transferred with a strong force to Pukow to assist General Chang Hsun in suppressing the revolutionists under General Hwang Hsin and Sun Yat-sen, and was present at the capture of Nanking by Chang-hsun, though his troops are reported not to have participated in the orgies in which the soldiers of the former indulged when the city was entered. Since that time he has been Military Governor of Kiangsu Province, with headquarters at Nanking, and sitting thus astride the Yangtsze he held an important position when the revolution of 1915-16 developed against the monarchical movement of President Yuan Shih-kai—a position which both sides worked ceaselessly to turn to their advantage. His sympathies, if not his active support, were against the monarchists. That now is certain, though when the movement was afoot the Republicans did not believe it and their hasty press rushed into condemnation of him on the ground that his leanings were, if anything, toward Yuan Shih-kai. The failure of the monarchy movement and the death of Yuan Shih-kai released General Feng from all their doubts, and the Southerners having realised their mistake in mistrusting him began to regard him as one strong military leader whose allegiance to their cause would be of material service.

With a decided swing of opinion in his favor Feng Kuo-chang consequently became prominent in the consideration of politicians as a candidate to fill the Vice-Presidency rendered vacant by the elevation of General Li Yuan-hung to the Presidency, a certain strong element of the Kuomingtang naming him as their candidate. The only other opponent in the running was General Lu Yung-ting, the Governor of Kwangtung, who also had a few Kuomingtang supporters—but very few. The election took place on October 30 at Peking, a joint session of the Senate and House of Representatives being held for the purpose. Three ballots had to be cast before the election was settled, and the process absorbed nearly eight hours. From the opening of the session it was apparent that General Feng Kuo-chang was the only likely candidate. The conservatives and the more reasonable radicals united at once to support him. Somewhat less reasonable radicals supported General Lu Yung-ting, while the extremists split to support others who have not a ghost of a chance of ever gaining the vice-presidency. After the second ballot the names of those supported by hopeless minorities were eliminated Of 734 votes cast at the first trial General Feng received 413 and Lu Yung-ting 176. Huang Hsin (since deceased) got 33; Tang Chi-yao 28; Tsen Chun-hsuan 19; Hsu Shih-chang 15, Tsai Ao (since deceased) 5, Tan Yen-kai 5, Na Yen-tu 6, Liang Chi-chao 4, Pa Wen-wei, 4, Wang Yi-tang 2, Li Lieh-chun 2, Yang Tsen-hsin 2, and Tuan Chi-jui, the present Premier, 6. It must be explained that prior to the election Tuan Chi-jui, Premier and Minister of War, announced clearly enough that he was not a candidate and would not accept office if

GENERAL FENG KUO-CHANG
VICE-PRESIDENT OF THE REPUBLIC OF CHINA

elected. A few of his inveterate admirers and quite a few of his radical enemies who would like to see him out of the Premiership, attempted, independently, of course, to campaign for him, but both factions gave up their schemes on the eve of the election, and the few votes cast for the Premier cannot be taken as an estimate of his popularity but as the expressed opinion of the obstinate. General Chang Hsun, the Assembly's severest critic and bitterest enemy, was one of those who had the rare distinction of receiving a single vote, the announcement of which wrung laughter and war whoops from what he would describe as the "sacred representatives."

The second ballot, in which General Feng received 528 votes and Lu Yung-ting 180, greatly reduced the scattered minority of independents, and when it came to the third and final vote the obdurate were reduced to two votes and a few discontents who did not vote at all. With 520 votes to his credit as against 207 for Lu Yung-ting, General Feng was declared elected, amidst loud applause and much cheering. He was officially notified of

his election that night and special delegates later visited Nanking to invest him with the office, which ceremony took place on November 8, Mr. Wang Chia-hsiang, Speaker of the Senate, and Mr. Tang Hua-lung, the Speaker of the House of Representatives, officiating.

Now that this has been done all politicians are metaphorically sitting back watching what the new Vice-President will do. There are many who would like to see him leave Nanking and take up his official abode in Peking, in order that the Governorship he holds might go to one of their own party, or if he dislikes Peking they trust that he might be transferred to Wuchang, where Li Yuan-hung resided as Vice-President, and be given a position equivalent to Commander-in-chief of the forces of the south, or some such thing. By this means it is hoped that the lower Yangtsze can be placed in control of some known and tried partisan of the South, an excusable ambition, of course. But it is very likely that General Feng Kuo-chang will remain at Nanking though he might visit the Capital occasionally. As for his policy it is quite likely that he will decide to "sit tight" and say little. Being a soldier he will no doubt desire to see the army placed upon a better basis, and unless he has aspirations for the Presidency he will keep out of politics and confine himself to work in that direction. As an administrator General Feng has done well at Nanking, and a troublesome region has been rendered quiet and safe by him. He is held in high regard by foreigners who know him well, and being progressive and desirous of seeing an improvement in the country he can be relied upon to do whatever is in his power to bring about a general betterment in conditions.

# THE FOUNDERS OF THE PEKING CENTRAL HOSPITAL

In the last issue of the REVIEW we gave a description of the new Central Hospital being erected at Peking. We are now able to publish the photograph of the man most prominently associated with its inauguration and development. Dr Wu Lien-teh, M.B., M.D., (Cantab), D.P.H., is the prime mover in the project. As will be seen he is comparatively a young man, being still under 35. Having studied in England, France and Germany and passed his necessary examinations with distinction he returned to China to take up important positions. He was chairman of the Plague Conference and Director and Chief Medical Officer of the North Manchuria Plague Prevention Service, and was twice delegate to the International Opium Conference at The Hague. He is the holder of many European honours, and has recently been nominated for an honorary LL.D. by the Hongkong University. In this connexion the *North-China Daily News*, the leading British newspaper in China, makes the following handsome reference to Dr. Wu and his work:—"In honouring Dr. Wu Lien-teh, whose brilliant bacteriological research work has given him a world-wide reputation, the University of Hongkong pays a graceful tribute to the tremendous problems that have been and are being tackled by this enterprising scientist. To Dr. Wu, on whom Hongkong proposes to confer the honorary degree of LL.D. in recognition of the prominent part he played in medical administration and research in China, belongs the honour of planting with Chinese hands in Chinese soil the first germ of public health, of modern sanitation, which will do more to revolutionize this great country, to bring it into line with the western world, than could the action of any other one man effect. Of tireless energy and boundless enterprise and pluck, Dr. Wu (or 'Tuck' as he was called at Cambridge) quickly gained great popularity among men of his day, as well as the respect of those who were brought into tutorial contact with him. Of the latter, one was heard to remark in an after-dinner speech at a well-known London club: 'He was a remarkable chap—he crowded three years solid work into two and yet knew far better than I what was the correct waistcoat or tie to wear at Sandown.' Of Dr. Wu's work in connexion with plague this is not the time to speak—everyone knows of the laurels he won, of the golden opinions he earned as Chairman of the International Commission for the Prevention of Plague, when distinguished scientists attended as delegates from all over the world. Since that time the results of his researches in north Manchuria have appeared on the subject of plague in the leading medical journals at home. A fitting testimony to the years of 'spade work' he has done in North China is the great central hospital in Peking which has risen up and is now nearing completion, equipped with the most modern appliances and devices to be found in the western world. It is interesting to note that Dr. Wu may be claimed as a British subject, and we congratulate the Hongkong University no less than Dr. Wu on adding him to its alumni."

Mr. Tsao Ju-lin, the Chairman of the Board of Trustees was recently Minister of Communications, and concurrently Minister of Foreign Affairs. He is a distinguished Chinese of the modern school. He was educated in Japan, and also studied largely in China. He speaks both Japanese and French fluently. His official life has been mostly connected with the Foreign Office, where he was respected as a shrewd and strong

DR. WU LIEN-TEH

official. He was associated with Mr. Lu Cheng-hsiang, the Minister of Foreign Affairs, in the trying negotiations with the Japanese over the notorious Twenty-one Demands, and after the Minister's resignation practically carried the burden of foreign affairs. As Minister of Communications he will be remembered with appreciation by Americans, as it was he who signed the agreement for the railways which introduced American capital into China on any large scale. Of pleasant demeanour, excellent address, and more than ordinary capability, he is one of the officials who should be heard from in the future development of China.

# PROPOSED IRONWORKS FOR SOUTH CHINA

"Everything is in readiness to go ahead with one of the largest undertakings in South China." In these words, uttered in the course of an address by the Chairman of the Hongkong Steel Foundry Company at the annual meeting on September 30, the public were notified that they could expect something big in the way of iron and steel manufacture in South China in the not distant future. The steel Foundry Company, which is comparatively an industrial baby and is just discarding its swaddling clothes, was founded by several enterprising British residents of Hongkong to melt into ingots and moulds scrap steel or steel made from crude iron or pig. A patented process for this work was secured by the company and from the modest beginning five years ago of a two-furnace plant they have, on moderate capital, risen to the possession of two double sets of four furnaces in each set. And this young concern has more orders in hand than can be dealt with. It was in explaining why they did not work with open hearth, gas or electric furnaces that the Chairman, Mr. A. G. Gordon, mentioned the expected greater development. "Until such time," he said, "as the foundry department can be made to run in conjunction with mills for producing steel material from ingots, which keep the furnaces running day and night, crucible furnaces are more economical. Of course our main object, of which we have never lost sight, is to obtain the raw material direct from the mines now in existence in the South of China. We have been in communication with the Central Government, through the assistance of a powerful syndicate, with a view to obtaining a concession to work these mines, in the district of Waichow, Kwangtung Province, which district is very rich in ore. We have the estimates for all necessary plant and machinery for the making of steel material of every description, suitable land has been surveyed consisting of several hundred acres, with branch lines for cutting through from Canton in order that we may bring down the raw material. In fact, everything is in readiness to go ahead with one of the largest undertakings in South China, which should do more to benefit the prosperity of this Colony than any other industry here developed. All that is wanted is the sanction of the authorities; and, from our latest advices, I am inclined to think that this does not look a difficult matter. Chinese mining laws, as originally framed, would make it very difficult to find investors. This fact has been pointed out to the Central Government, and is at the moment having their serious consideration, which is a decidedly encouraging fact."

This promise of further development of the latent resources of China should be welcomed by everyone interested in the expansion of modern methods in China. That more iron will be mined and manufactured practically in China—and at all events solely by Chinese unskilled labour, and with Chinese artisans—should be a matter of gratification to every Chinese possessing a shred of hope for the future of his country. Apart from the Hanyang works, which are more mismanaged than managed, practically no attempt on any reasonable scale has been made to exploit the iron deposits that are known to exist in China. On the other hand ore is being regularly shipped in increasing quantities out of the country for smelting in Japan, while pigiron from Hanyang has been largely exported to America. To meet the demands which industrial development will eventually make for iron and steel China should give every encouragement to those willing to invest capital in establishing blast furnaces and rolling mills in the country. The benefits which will ensue as a result of the local production of iron and steel, apart from those which will come to the people from the provision of a further means for the employment of large forces of workmen, should be sufficiently obvious to render any mention of them unnecessary. Unhappily it would appear that those who have become the self-appointed guardians of the wealth of China, whether as politicians or officials, pay more regard to their own advantages than those of the country, and the foreign observer can be excused if he forms the opinion that consideration of personal ends and not patriotism chiefly moves those constituting the powers that be in their decisions regarding the fate of raw products.

What Mr. Gordon repeats about the existing Chinese mining laws making it difficult to find investors is not a new charge. Well-wishers of China have worn themselves tired in endeavouring to impress it upon those able to remedy the defect and it is only fair to emphasise that the last Minister of Commerce, Agriculture and Industry, did make a bold effort to meet the needs of the time by appointing a commission assisted by Mr. G. G. Lindsay, K. C., of Canada—a mining authority of high repute—to revise the laws. This commission laboured long and earnestly, and eventually produced a revised code. Before anything could be done to promulgate it, however, the Minister was removed, and the work of the Commission, like that of many another commission, reposes in some bureau pigeon hole where it will remain to rot unless some wide awake official takes the trouble to exhume it from its dusty covering for employment for the betterment of the country.

The world has been told often enough to expect an awakening of China immediately the leaders of the old forces could be removed. Those leaders have long been powerless but so far the new regime does not exhibit any of the simple statesmanship requisite in these parlous times to safeguard their country. The forward step that could be taken to earn the encouragement of all foreign powers is so simple that it is deplorable to think that it was not taken long ago. It can be expressed in the adoption of measures calculated to develop the trade, commerce and industry of China. Instead of giving sensible consideration to this aspect of national life the politicians are chiefly involved in petty wrangles about puerile matters of no consequence to any but themselves, what time the country drifts to the dogs. Continuation of this sort of conduct will very soon tire foreigners of making efforts to establish industries and expand business in China and their capital will be withheld while their Governments consider the ways and means of establishing a commission which will for a period at least take the reins of government from the hands of those whose incapacity tends to plunge the state into chaos. Such efforts as those being made by the Hongkong Company to develop industry in China should meet with the fullest support from the Central Government, and instead of allowing itself to be restricted by hidebound and illconceived regulations and precedents it should go out of its way to establish a policy that will make for the immediate pecuniary benefit of the people at large and the elevation of the country as a nation.

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The sixth ordinary yearly meeting of shareholders of the Hongkong Steel Foundry Company, Limited, was held at the Company's offices, St. George's Building, Hongkong, on September 30, 1916. Mr. A. G. Gordon presided. According to the report and Balance Sheet for the year ended 31st May, 1916, the gross profit for the year was $32,460.30, less debit balance brought forward from previous year of $4,585.82—Total $27,874.48.

After allowing for Interest, Auditor's fees and Bad Debts and writing off Depreciation on Company's Plant, Machinery, Launches and Stores ($8,325.86) there was a net available balance of $19,548.62 which it was recommended be carried forward to new Profit and Loss account.

The result of the year's working was a very great improvement on that of previous years. Owing to the smallness of the working capital it was not proposed to pay a dividend but now that the Company was able to shew such good results it was hoped that fresh capital might be forthcoming so that there may be sufficient funds in hand for payment of dividends in future.

# PROSPECTS FOR AMERICAN RAILROADMEN IN CHINA

*(Contributed)*

Some time ago when asked to write an article outlining the opportunities which American railroadmen could find in China, the writer felt tempted to let the word "none" tell its terse, but convincing story. However, although brevity may be the soul of wit, laconism is seldom the essence of truth, and it appeared desirable to enter in some detail into an explanation of the phenomenon why America, admittedly the foremost nation in the science of railroading, should be so slightly represented in a field of such infinite possibilities as China. Consider a few figures. The single province of Szechuan has a population of 50,000,000. Its area is over 218,533 square miles—and it has not a yard of railroad. Think of it! A province almost as big as Mexico with a population six or seven times larger, not one-hundredth of one per cent. of whom have ever seen a railroad! Of a truth China should be the Eldorado of the American railroadman now the country has awakened to the need of better means of communication than those which served in the slow, unprogressive days which became a memory directly the first revolutionary gun boomed at Wuchang in October, 1911. There would be work and good prospects for every enterprising railroadman in America who wished to seek fortune in alien climes, if China were as other countries. That, hitherto, there has been little or none offering has been due solely to political conditions.

While the latent wealth of China is certainly equal to and probably greater than that of any other country, she is actually the poorest nation in the world as far as available resources are concerned. Under the Empire no proper Budget was ever framed and it is consequently impossible definitely to state how China stood financially in any particular year. It is, however, certain that, in each of the last twenty years, she was faced with a deficit. The four years under the Republic have shown a perpetuation of this state of things, and at the moment of writing China is endeavouring to obtain more money to meet her ordinary administrative expenses. The necessity of relying upon the foreigner for the development of the country has led to the close association of finance and politics. In most other countries the floating of a loan to build a railway would be a financial deal pure and simple, but in China as a general rule loans for the construction of railways are placed with Powers which claim "special interests" in certain "spheres." This may not appear to have anything to do with prospects for American railroadmen in China, but it has a very real bearing on the question. Speaking broadly, it is impossible for any country but Japan and Russia to finance railroad construction in Manchuria, and this may be said of Japan in Fukien and Shantung and France in Yunnan. The British claim special interests throughout the Yangtsze Valley, but both Belgium and France directly, and Russia indirectly, have been trenching upon the British preserve. The American Government has always steadily set its face against the policy of creating spheres of influence, and has maintained that in the interests of China and the whole world what was required was the Open Door and Equal Opportunity.

That America's attitude, considered from an altruistic point of view, was eminently praiseworthy must be admitted. Unhappily in matters of this kind enlightened leadership is of little value if there are no followers. The other nations had long since realized the need for foreign markets which America is only just beginning to feel, and they recognised that the establishment of special interests in a considerable portion of the most densely populated quarter of the globe meant the provision of a vast and constantly expanding market for their manufactures. Consequently though America's advocacy of the Open Door was crowned with the garland of official foreign approval, it was, to mix the metaphor, at the first opportunity, shunted onto a blind siding.

Far be it from the writer to set himself in judgment upon those who defined and maintained America's policy in regard to China. It must, however, be pointed out that the policy of altruism has not benefitted either China or America. America elected to stand out of the scramble for special interests in China. The result was, not that the scramble was called off, but that the other nations had more to scramble for. It would, of course, be improper to urge that because other nations adopt a policy that is opposed to high ideals, America should follow suit in order to conserve her material interests. Any publicist who deliberately advanced such an argument would be regarded with deserved disfavor. But in regard to China there is a chilling doubt whether the policy that America has adopted is, after all, the most altruistic. It would be foreign to the purpose of this article to enter into a long dissertation upon policies, but it is absolutely essential to enable a real appreciation of the position to be gained to expound what the conditions in China actually are and in what way the good-will that America indubitably feels towards China as an entity, can best be expressed.

China as a political entity and the people of China are quite distinct. What may seem good for China is not necessarily good for the people of China, paradoxical though that may sound. China as a political entity means only the small official clique that governs and rules. To them the definite adoption of spheres of influence or the partition of the country would mean loss of privileges and opportunities for amassing wealth. To the people of China it would mean the substitution of law and order for the chaotic conditions that have always prevailed under their own official rulers. Under both Empire and Republic there has been no security for either life or property. Public works that would relieve the suffering of millions have not been undertaken; there are practically no roads in the country; the system of taxation is simply extortion, and brigandage is a recognised, and in public estimation not altogether disreputable, vocation. The pitiable condition of the people is perpetuated by the altruistic policy of supporting the cry "China for the Chinese."

Americans justly believe that American laws and customs confer great benefits upon those who are beneath their protection and encompassed by their influence. If, putting partition on one side for the moment, there were the initiation of clearly defined spheres of influence in China by which all the great Powers had allotted to them a certain area to develop, most Americans will agree that the population that passed under American authority would soon reap moral and material benefit. It has been suggested that, bristling with difficulties as the task would be, it would not be impossible for a Commission composed of representatives of each of the great Powers and of China, to frame broad principles covering Legal Administration, Education, Railroad Construction, Banking, etc., and then that each Power should be entrusted for a term of twenty-five years with the development of its sphere. There would by this means be created a spirit of healthy emulation and each Power would desire to hand back its sphere to China when the time came in the highest condition of moral and material advancement. Americans will believe that the sphere entrusted to America would be highest on the list. But, if this takes place, and many shrewd observers believe that something of the kind is inevitable, America cannot participate unless she breaks away entirely from the policy which she has hitherto adopted.

"But," wearily cries the Railroadman, "why inflict all this upon me? What I want to know is what opportunities China offers me. All this talk about partition and policies and Powers gets me no forrader. Cut it out and let us get down to tin-tacks." That is all very well, but the driver is not going to

knock sixty per hour out of his locomotive before he has lit the fire. Railroadmen will have opportunities in China directly American capital begins to build railroads in China. Every loan agreement for the construction of railroads that is signed nowadays has some such clause as this (which is taken from the Agreement between the Chinese Government and La Compagnie Generale de Chemins de Fer et de Tramways en Chine in reference to the Lung-Tsing-U-Hai Railway):

"The Director General and the Company shall act together and shall conscientiously choose an Engineer-in-Chief *who shall be either Belgian or French*, experienced and honest."

The italics are by the writer. The selection of the foreign staff required—it is significant that in this and other Agreements, with the exception of that in regard to the Hukuang Lines, of which more hereafter, the expression used is "European staff"—is left to the Engineer-in-Chief, and he naturally chooses men of his own nationality. Definite figures are not available, but it may be said with confidence that there are fewer American railroadmen employed in China than men of any other nationality whatsoever that has entered the field at all. A glance at the excellent political railway map of China issued by the FAR EASTERN REVIEW, shows that the French, Belgian and Russians, who co-operate in railroad construction in China, control a length of road in operation, under construction or contracted for of about 6,000 miles. Great Britain comes next with a mileage of over 3,000, next Japan and then Germany. America until recently came a bad last with some 400 or 500 miles. On each of the lines built with foreign money the foreign officials are naturally subjects or citizens of the nation affording the loan. Moreover, and this is an important point, the specifications for bridges, construction material generally and rolling stock are drawn up by the foreign engineer-in-chief. He favors the practice of his own country, and the result is that American manufacturers until recently have had very little chance to secure contracts. On the other hand many of the Chinese engineers gained their qualifications in America, and to this is due the fact that some small amount of business is done by the American manufacturers who have live representatives in the field.

The only portion of China's railway system in which until the Siems-Carey contract was signed America had any effective voice, was the section of the Hukuang lines between Ichang and somewhere near Wanhsien. It may be recalled that the Hukuang Railway Loan was shared by Great Britain, France, and Germany, and after strong representations by ex-President Taft America came in on equal terms. It is unnecessary to go into the history of this joint undertaking, but after long delays a survey of the American section was completed by Mr. Randolph, the engineer-in-chief. When work is begun on this section of 400 or 500 miles American practice may be expected to prevail. Of infinitely greater importance and promise is the Siems-Carey contract for the construction, of 1,100 miles of railway in various parts of China. The conclusion of the agreement for the construction of this mileage at once places America well up in the list of the nations interested in China's railways and, for reasons already given, American railroadmen will have greatly increased opportunities in the Republic. In all likelihood, in view of the fact that the war will have consumed the greater portion of Europe's surplus capital, America will for the future become increasingly interested in the financing and construction of China's railway system, with the result that there will be great openings for American brains and energy.

## CHINESE HOUSES

The ardent student of things Chinese usually contrives to find a Chinese precedent for every new thing that is done or discovered in the West, so it will not surprise anyone to learn that the Chinese anticipated the principle underlying modern steel and concrete construction by 3 or 4 thousand years. Until very recently the roof of the Occidental building rested on the walls and so did the floors. If the walls fell the house fell. The modern constructor of steel frames puts no faith in walls but supports his roof and floors with the steel frame. The walls may crack and crumble as they like, they are simply the ornamental shell of a modern building and have nothing to do with its substantiality or length of life. This is comparatively new in the West, but so far as we know, the Chinese have never built on any other principle.

Chinese walls are, for the most part built, of half baked bricks which are short lived. As one travels about this land of ruins he sees scores of buildings standing with roof, floors and a massive wooden frame intact while no walls are in sight, the bricks having crumbled away or been stolen to construct newer buildings. If a man wants a new wall to his house he does not trouble to move out. The bricklayer simply tears out the old wall and puts in a new one without disturbing the tenants. Frames are of massive logs and roofs are stacks of lumber and tile which no Chinese wall could possibly support. The major feature of Chinese architecture is the roof, and to protect the more perishable parts of a house in process of construction it is usually built first and all the art and ostentation of the builder is lavished upon it. A half dozen energetic carpenters will put up the heavy frame of a large house in a few days, then they start upon the roof and when that quintessence of Celestial art is finished the masons will heap up a few incidental walls as an after thought The skill which a Chinese bricklayer exhibits in repairing crumbling walls elicits the admiration of European builders in every treaty port. Without injuring the integrity of the whole he will take out hundreds of bricks all over the surface of a massive wall and replace them with new ones. It is no uncommon sight to find Chinese at work digging every scrap of mortar out of the face of a building and stuffing in new mortar as they go, thereby giving the building a new lease on life which a Western builder would accomplish by tearing the whole house down and building it up again.

## INTEREST IN CHINA'S MINES

An index of the interest now being manifested in the United States regarding China and her resources has been received in the form of newspaper clippings which show that an article on the coal resources of China by Mr. V. K. Tang which appeared in the FAR EASTERN REVIEW for June was reprinted in part by upwards of 200 daily papers scattered over the whole country. One of the newspapers added a bit of editorial comment which was as follows:

"It is clear that the consumption of coal in China is surprisingly small when compared with her population of approximately 400,000,000. This is caused by the lack of transport facilities. Coal is a commodity which travels very far only in countries well supplied with railways. In China, where the price is often doubled by a day's journey, coal for household purposes is an article of luxury except in those fortunate places situated very close to the mine or connected with it by modern means of communication. This is one reason why the Chinese people are now so very anxious to extend their present utterly inadequate railway facilities. China's vast coal reserve is a practical reason why the United States should strengthen the ties, commercial and political, between China and America. It will pay us to help develop China."

# THE CHINESE-AMERICAN PRODUCTS EXCHANGE COMPANY

**New Company plans to Shift Cotton and Tea Trade from British Hands by use of Ships Having Chinese Government subsidy**

One of the most far reaching plans for the development of trade between China and the United States has been announced by ex-Mayor David S. Rose of Milwaukee, counselor for the Chinese-American Products Exchange Company, a million dollar corporation that has as some of its objects the following:

**To shift the cotton trade with China from its present route via Liverpool to a direct route through the Panama Canal, cutting out the Liverpool exchange; and to shift the tea trade between China and the United States by cutting out Manchester middlemen; also to establish banks in China and the United States for financing these crops.**

**To establish tanneries in China under the management of August H. Vogel, vice-president of the Pfister and Vogel Leather Company;**

**To establish two shipping lines for the handling of the company's merchandise, one to ply between Norfolk, Va., and San Pedro, Cal., touching at Southern Atlantic and Gulf ports, and another with headquarters on the Pacific Coast to make regular sailings with the Orient.**

**In addition to these specific objects, the company plans to do a general merchandising business in American and Chinese products both manufactured and raw materials.**

Not only business men are interested in this company, but its directorate includes two United States senators as well, Hoke Smith of Georgia and Duncan U. Fletcher of Florida, while Adolf Boldt of Houston, Tex., Herman A. Metz of New York, a former member of the House of Representatives; Charles E. Faulkner of Baltimore, Carl Eshy of Savannah, Ga., Charles Denby of Detroit, former Consul General at Shanghai, Richard Chilcott of Seattle and Thomas Southgate of Norfolk, Va., are among the other men of prominence in their several states who will act as advisors. The president is Dr. Clarence J. Owens, managing director of the Southern Commercial Congress, and the secretary is Robert F. Rose, brother of Ex-Mayor Rose of Milwaukee who is general counselor of the company. The Chinese end of the company will be directed by Mr. Shah Kia-fu, former minister to the United States.

While the company has announced that it is independent of United States Government aid, it has also stated that the Chinese Government has given guarantees of such nature that the hearty co-operation of the Chinese cannot be doubted. The Chinese Government is asserted to have guaranteed interest at six per cent on a bond issue of $3,000,000 and a four per cent sinking fund to retire the bonds in 25 years. The company plans to start immediately with its ship building plans and as steel and other ship construction materials are now high in price, it is now proposed to build the company's fleet of wood, making them of the motor schooner type. The ships probably will fly the Chinese flag to escape the restrictions of the United States shipping laws.

In connection with this side of the company's activities, it has interested Michael Earles of Seattle, owner and operator of the largest lumber mills in the state of Washington. He has also been named as a director in the company, and it is understood that the vessels of the new line will be built in West Coast dock yards.

In this matter of financing the steamship line, the Pacific and Eastern Steamship Company has been organized under the laws of New York and has made the Chinese-American Products Exchange Company its fiscal agent for the disposition of the $3,000,000 bond issue. This bond issue, bearing interest at 6 per cent and having the guarantee of the Chinese Government, should sell at a fair price without much effort on the part of the fiscal agent whose commission on the sale may add considerably to the assets of the company.

It was pointed out to the Savannah Board of Trade by the promoters that it is cheaper to ship from China through the Panama Canal to Savannah or other Southern ports and distribute the cargo by rail as far west as Denver, than to land it at San Francisco and make the shorter but much more costly haul over the mountains. Whether this will appeal to those on the West Coast who are interested in the company, has not yet been ascertained. As the head of the Southgate Terminal Corporation of Norfolk is traffic advisor to the company, it is considered probable that he will organize the fleet for the Atlantic and Gulf port trade, transhipping the cargoes on the North Pacific coast, at San Pedro, Portland or Seattle.

The only manufacturing business that the company has definitely announced as being planned for operation in China is the tanning of Chinese hides and it is the possibility of exploiting the cheap labor of the Orient that is said to have attracted the interest and co-operation in the company's plans of August H. Vogel, vice-president of the Vogel and Pfister Company of Milwaukee, a well known firm of tanners. He is on the advisory board. The new company's house organ, "CAPEC," has given out the following regarding the tannery scheme, the title of the organ being a combination of the initials of the company's name:

"CAPEC has now taken in hand the organization of tanneries in China. That country exports $10,000,000 worth of hides annually and there is not a tannery within its borders. Chinese hides are being tanned in America where labor and all other items that enter into the cost are incomparably higher. In the United States, wages run from $1.50 to $5.00 a day. In China just as good unskilled labor may be employed at from $2 to $4 (gold value) a month. If you are interested in the subject or if you would become interested, write to us."

One of the largest items of the plan and one which the promoters say will be immensely profitable, is the cutting out of Manchester as a factor in the United States cotton trade with the Orient and in an interview given out from the headquarters of "CAPEC" in Washington, on October 13, it was stated that President Owen and General Counselor David L. Rose were in the South, seeking to align the cotton growers and exporters in accordance with the plan. The general scheme is to abolish the British clearing house system which has been in vogue for so many years and to deal directly with the Orient, thus cutting off the British middleman's profit. The promoters declare they can save enough by the transfer of the system to make the venture worth while. The two officials of the company planned to visit every southern city of consequence, while Galveston and New Orleans were selected as those in which special appeals would be made to break the hold that the Manchester market is alleged to have on the cotton industry of the United States.

The statement regarding this cotton enterprise is closed by the following paragraph: "While the administration has not taken any direct interest in the crusade, it is said by members of the Chinese-American Products Exchange Company that the Government is ready to give all aid and assistance. The Department of Commerce is extending all the help in its power."

That the latter statement is not beside the mark is shown by the visit of Commercial Attache Julean H. Arnold of the Department of Commerce, to Atlanta, one of the great cotton centers of the Atlantic Coast, only two days after President Owen of "CAPEC" had addressed the members of the Board of Trade in Savannah and had outlined the company's project to them. While Mr. Arnold did not touch on the subject of cotton, his exposition of the opportunities awaiting the American investor in China were eagerly heard by the assembled businessmen and no doubt strengthened their desire to participate in reaping the golden harvest pointed out by the Chinese-American Products Exchange Company.

If the company adheres to its program and organizes a series of banks in both China and the United States, its facilities for the exchange of products of the two countries will be greatly augmented. The opening of such a bank in Atlanta was forecasted for the near future in Mr. Owen's address before the Savannah businessmen. This would be the head office and branches were announced for Hongkong, Shanghai, Tientsin and Hankow, where the company plans big operations in the selling of cotton so far as Hankow and Tientsin are concerned and the purchase of tea direct from the Chinese in the Hankow market. It was pointed out that China purchases the bulk of her cotton in Liverpool, while America buys the greater part of her tea through Manchester. With the new steamship and banking facilities in working order it is expected that both of these seemingly roundabout roads of commerce will be straightened and the United States will both buy and sell direct, the "CAPEC" banks moving the crops both ways without undue loss from exchange charges.

Aside from the cities where the branches of the bank will be located, the company has announced its intention to open offices in fourteen cities of the United States where it will maintain exhibits of Chinese products and from which it will endeavor to stimulate their sale. Similar exhibitions of American products, especially manufactures, will be made in the principal Chinese centers of population, it was stated. The fourteen cities of the United States where the activities of the company will center, have not been stated, but it has been assumed by several of the Southern cities that they will be among the number. In this connection, a lively competition seems imminent between Savannah and Norfolk, each of which is endeavoring to secure for itself the honor of being the terminus of the shipping business of the company and the chief port of entrance to the United States.

When it was announced a few weeks ago that Senator Hoke Smith of Georgia had introduced a resolution for a congressional committee to visit China and investigate conditions, the plan was received in various business circles with incredulity as to the possible good that might accrue either to China or the United States from such an investigation tour, "junketing trip" some were bold to call it. Now that it has been disclosed that Senator Smith is one of the Directors of "CAPEC" the wind has changed and the wide publicity that the company's plans have received is having its effect. Since the proposed personnel of the party to take the journey has been enlarged from its first outline that covered only a few senators and members of the House to a commission of businessmen who would return the visit of the Honorary Chinese commission that toured the United States last year, the plan is being looked upon with more favor. The directors and prime movers in the "CAPEC" development scheme, so far as they have expressed themselves in the public press, are heartily in favor of it, as it is assumed that they themselves will make up the bulk of the commission that is planned to cross the Pacific under United States Government auspices.

Ex-Mayor Rose of Milwaukee has been the moving spirit in the company and has spoken before many commercial bodies of the West and South on China's opportunities for investment of American capital. In an interview accorded the *Washington Times*, published on October 9, he declared that China was an unlimited field for development of resources and industries.

He emphasized the necessity for building up direct connections with China and the importance of this in view of the probable conditions after the war. He drew a rather pitiful picture of China's conditions: roadless, having "no glass factories, no woolen mills, practically no American banks, no trust companies, no surety companies, only one steel works, no tanneries, no shoe factories, no large clothing factories and the pitifully small number of flouring mills in view of the wonderful possibilities of wheat production," said Ex-Mayor Rose who stated further that the Chinese have confidence in the Americans by reason of the restoration of the Boxer Indemnity, the open door policy and the knowledge that America does not seek to acquire territory.

## EDITORIAL COMMENT

The above information has been extracted from the fifty or more articles which appeared in the early part of last month in the leading American newspapers. The facts disclose that in an honest effort to promote Chinese and American interests, the Chinese Government has been led into subsidizing an American company having for one of its prime objects the destruction of the established trade of a nation whose friendship China must rely on more than that of any other for the preservation of her integrity and independence. Reading between the lines of the above article, there is every evidence that a huge German-American intrigue has been successfully carried through for the purpose of undermining the position of Great Britain in the cotton and tea trade. It is only necessary to reprint herewith the news item published in the New York *Financial America*, of October 14, to grasp the full significance of the scheme and what it means to British trade in China.

### COTTON TRADE'S CONTROL BY BRITISH TO BE ENDED. CHINESE-AMERICAN PRODUCTS CO. PLANS TO END DOMINATION OF MANCHESTER MARKET, REGARDING ORIENT

Washington, Oct. 13.—Vigorous efforts are being made by cotton producers and exporters to escape the domination of the British exchange in Manchester, it became known to-day. The movement is being conducted by the newly organized Chinese-American Products Exchange Co., the headquarters of which are here. The organization counts among its advisory board, two United States Senators and has the backing of the Southern Commercial Congress.

Clarence J. Owen, managing director of the congress, and David L. Rose, general counsel of the Products Co., are now in the South seeking to align the growers and the cotton exporters in accordance with the plan. The general scheme is to abolish the British clearing house system which has been in vogue for years and to deal directly with the Orient and thus cut off the middleman's profit. The promoters declare they can save enough on the transfer of the system to make the venture worth while.

The two officials of the Chinese-American company will stop first in Charleston, S. C., and will then visit every city of consequence in the entire South. Galveston and New Orleans will be made to break the hold that the Manchester market is alleged to have on the cotton industry of the United States.

While the administration has not taken any direct interest in the crusade, it is said by members of the Chinese-American company that the government is ready to give all aid and assistance. The Department of Commerce is extending all the

**help in its power. Senators Fletcher of Florida and Hoke Smith of Georgia, are supporters of the movement.**

In the *New Orleans Item* of October 15 appeared the following in connection with a further report of the company's activities;—

**"A recent contract has been made with the Chinese Government wherein the Government guarantees bonds worth $3,000-000 principal and interest for twenty-five years, six per cent interest and four per cent for a sinking fund to retire the bonds on maturity."**

The *Detroit Press*, of October 15, corroborates the above by the following extract from its Washington Bureau:—

**"The Chinese-American Products Exchange Company is, as far as the United States is concerned, strictly unofficial and private in its character; but on the Chinese side there have been government guarantees of a nature to show the hearty co-operation of the new republic.**

**"In fact the widely divergent attitudes of the two republics is shown in the matter of the projected line of steamships to carry the commerce. While the United States by its Seamen's Law, has killed the American merchant marine on the Pacific, the Chinese government has guaranteed the interest of six per cent to be paid on bonds sold for the purpose of establishing the line, and also guarantees the payment of four per cent annually for a period of 25 years for creating the sinking fund for paying the principal."**

In an interview published in the *Washington Times*, Mr. David S. Rose, ex-Mayor of Milwaukee and promoter of the enterprise, corroborates the above in the following words;

**"The bonds of the steamship company are backed by the Chinese Government and are to be offered the public through the Chinese-American Products Exchange Company."**

It is therefore clear from the above statements that the credit of the Chinese Government has been pledged to facilitate the sale of bonds for the steamship line by the official guarantee of principal and interest. The moving spirit in the enterprise is Ex-Mayor Rose of Milwaukee, the stronghold of German-American propaganda in the United States, and a glance at the names of those actively interested in the company reveals the presence of several Americans, some of them with pronounced Teutonic names. When to this is added the name of the Senator from Georgia, the Honorable Hoke Smith, whose rabid anti-British attitude of last year over the Allies' embargo on cotton shipments to Germany, is still fresh in our memory, it throws a flood of light on the aims of the enterprise. By the publication of its plans disclosing the determination on the part of the promoters to undermine the dominating position of Manchester in the cotton market of the East, the Chinese Government is now placed in a most delicate position for pledging its credit to the steamship line, on whose establishment depends the commercial success of the rest of the scheme.

The Chinese Government undoubtedly has the unquestionable right to assure the financial success of a purely Chinese commercial undertaking, but when this support is extended to a foreign corporation for the express purpose of destroying the hard won trade position of its best friend in the cotton goods market of the East, the action is open to severe criticism. It is only fair to state that the Chinese officials interested in the scheme and who obtained the credit of the Government for their plans, were solely interested in the legitimate creation of a shipping line. In this there was considerable justification for official support, as there was no intimation that the American partners were to employ this assistance as the basis of a deliberate attack on British interests at a time when Britain cannot well defend herself.

This callous disregard of China's precarious and delicate position in international politics at this crisis in her history, by compromising her with Great Britain, is unpardonable. When to this is added the attempt on the part of a director of the company in his official capacity as United States Senator to implicate his own government by introducing a resolution for Congressional investigation of trade opportunities in China, involving the collection of commercial data by members of Congress at the expense of the United States, the whole proceeding reflects little luster on American methods in the Orient. That the Department of Commerce has been used by the promoters of the scheme to further their ends, is again indicated by the visits of Mr. Julian Arnold, the Commercial Attache in China, to the southern chambers of commerce.

The damage has been done. Poor old China will again pay the price for American, or should we say, German-American, disregard of delicate international problems. The credit of the Chinese Government to such a scheme will now have to be withdrawn. It is just.

We regret that we have to make this criticism. The FAR EASTERN REVIEW is the exponent of American ideas and ideals in the Orient. We have labored steadily for the advancement of legitimate American interests. But we have also advocated the square deal for all nations. We cannot overlook the fact that by dint of a century of hard, up-hill work, British merchants have won for Manchester the dominant place in the cotton trade of the world, and especially here in the great market of China. The preservation of this legitimately won position is vital to the commercial life of England.

The men of Britain are to-day fighting and cheerfully dying in the trenches to preserve a great principle, vital to the future peace and security of America. If they fail, it will not be long before the men of America will in turn have to defend the same principle. The great financiers of the United States will not support a scheme at this time having for its object the undermining of Manchester's preeminence in the cotton markets of the world; they have placed themselves on record that the great wealth which has rolled into their coffers as the result of the misfortunes of Europe, shall not be actively employed against them during the war to take away or undermine their trade; on the contrary, they hold that the huge war profits are to be held to assist and co-operate with the others in re-establishing their stricken industries and reviving their foreign trade. This reflects the true American spirit. The FAR EASTERN REVIEW has accepted this declaration of the American bankers uttered through their mouth-piece, Mr. Willard D. Straight, as final, and cannot therefore support any scheme whereby the credit of the Chinese Government is to be employed to strengthen a German-American attempt to circumvent this doctrine of red-blooded Americanism.

GEO. BRONSON REA.

## A NEW AMERICAN LOAN

On November 21 the House of Representatives at Peking passed the agreement made with the Continental Commercial Bank of Chicago for a loan of $30,000,000 (gold). The Senate confirmed the agreement on November 25. The interesting feature of this transaction is that it is the first large independent loan to China that has been signed and agreed to by the Republic's Assembly, though whether it ever will be consummated remains to be seen. There are international strings to trip up "trespassers" in the field devoted to administrative and "industrial" loans just as there are in the field of railway loans. Some of these are now being encountered, as witness the opposition of the Consortium of Bankers at Peking, and the protest made by the Banque Industrielle with respect to the security. The terms of the new loan included the revenue of the Wine and Tobacco Tax as security, but no sooner was this made public than it was disclosed that the Banque Industrielle had first call upon it with respect to a loan made by them some time ago to the Chinese Government: a fact which ought to have been known to some one interested. The contract provides that an advance of $5,000,000 gold be made immediately after signature secured on three year treasury bills. The interest is 6 percent per annum, and the price to the Government is to be 91, the issue price being 97.

It is stipulated in the contract that if the Bankers do not agree to provide the balance of $25,000,000 within 60 days of the date of demand made by the Chinese that the Government may look elsewhere for the money.

# MEMORANDUM ON THE REFORM OF THE LAND TAX SYSTEM IN CHINA

[By W. F. Willoughby, Deputy Legal Adviser to the Chinese Government]

In view of the fact that the question of the reform of the Land Tax of China has been lifted into the realms of practical politics by its allocation as security for the loan recently under negotiation with the American firm of Bankers, Messrs. Lee, Higginson & Co., we are glad to be able to publish the latest contribution to the literature on the subject in the shape of a Memorandum by Dr. W. F. Willoughby, whilom Deputy Legal Adviser to the Chinese Government. Dr. Willoughby is fortunately able to bring to bear on his subject the result of exceedingly valuable experience gained in Porto Rico, and his treatment of the intricate question will be read with great interest by the many who regard the revision and organization of the Land Tax of China as the *ultima thule* of the reformer in the country.—Ed.

Part I.—Determination of the Basis or Principle of Taxation to be adopted: 1. Introductory Remarks. 2. The Taxation of Land according to its Yield and according to its Value. 3. Principle of Taxing Land according to its Yield. 4. Principle of Taxing Land according to its Value. 5. The Question of Taxing Improvements to Land. 6. Principle of Taxing Land and not the Landowner.

Part II.—The Assessment of Land: 1. Introductory Remarks. 2. Character of Assessment Data Required—(a) Identification Data: (b) Location: (c) Area; (d) Use of Standard Unit of Measurement: (e) Character of Land; (f) Name and address of Owner or Occupier. 3. Organization and Conduct of Work of Assessment. 4. Desirability of a Cadastral Survey. 5. System where a Cadastral Survey is not Feasible. 6. Administration Organization Required for Making the Assessment. 7. Organization and Work of the Central Office. 8. Use of Forms for the Description and Valuation of Lands. 9. Adoption of Standards of Value. 10. Organization of the Field Force of Assessors. 11. Adjudication of Disputes regarding Assessments. 12. The Revision of Assessments.

Part III.—Preparation of the Tax Rolls: 1. Introductory Remarks. 2. Form of the Tax Rolls. 3. Use of Tax Rolls for Statistical and Control Purposes.

Part IV.—The Collection of Taxes: 1. Introductory Remarks. 2. Organization of a Collection Force. 3. Preparation of Tax Bills or Receipts. 4. Collection of Taxes by the Collectors of Taxes. 5. Monthly Report by Collectors of Taxes of Taxes Collected. 6. Deposit of Collections in Local Banks. 7. Tax payers Accounts in the Central Office. 8. Collectors Accounts in the Central Office. 9. Inspection of Offices of Collectors of Taxes. 10. The Bonding of Tax Collectors. 11. Criminal Prosecution of Defaulting Collectors. 12. Recapitulation of Means for Safeguarding the Treasury. 13. Proceedings for the Enforcement of the Payment of Taxes. 14. Premiums for Prompt Payment and Penalties for Delayed Payment of Taxes. 15. Use of Collectors of Land Taxes for other Purposes. 16. Payment of Salaries and Expenses of Collectors. 17. Conclusion: Adaptation of the System Described to China.

## Introduction

The following Memorandum is submitted in compliance with the request of His Excellency, the Minister of Finance, that the writer incorporate in a written statement the substance of his remarks regarding the problem of effecting a reform of the present system of taxing land in China, addressed to representatives of His Excellency, who, at the request of the latter, had several interviews with him regarding this subject. In reproducing these observations, the writer has deemed it desirable to enter into details of theory and administration not covered by these conferences. He has sought, in a word, to present as full an analysis of the problem of divising, installing and administering a system for the taxation of land as circumstances render feasible. His fundamental aim has been to indicate and discuss all the several factors that are involved in this problem, to point out alternative principles of taxation that may be adopted, and especially to make known the specific difficulties that have to be met and overcome in organizing and putting into operation any system that will give satisfactory results in practice. Whether the recommendations that are made are followed or not, it is believed that the discussion that is here presented cannot fail to throw some light upon the exceedingly difficult problem that now confronts China in her efforts to put her financial system upon a sounder and more effective basis.

In carrying out this program constant reference is made to the land tax system of Porto Rico. This system has been selected for special consideration for a number of important reasons. In the first place, the problem now confronting China is in many respects similar to that which had to be met in Porto Rico when the decision was made by the American authorities to substitute a more scientific system for the taxation of land than the one they found in force when the administration of the affairs of that Island was taken over by them. Here, as there, the problem embraces, not merely the divising of a system that shall conform to the proper canons of taxation, but all the work involved in the building up a machinery for its administration. Here, as there, the government has to contend with the difficulties arising from the fact that the records and data absolutely essential for the proper operation of the system are largely lacking. There are no maps showing the location, boundaries and areas of the properties to be taxed: there are not even complete records or lists of these properties or of their owners. An accurate tax roll, the very foundation of any system of land taxation, is almost non-existent. Such information as is available regarding parcels of land, their areas and value, is admittedly so defective as to be almost without value. There is, moreover, no machinery in existence through which these essential facts may be systematically and accurately obtained. Added to these difficulties is the fact that the work of reform must be accomplished in the face of opposition certain to arise, due to the fact that any change in taxation necessarily means a certain shifting of the burden of taxation, and that the efforts of the government to effect improvements are sure to be looked upon as but means for increasing the amount of taxes to be paid. All of these difficulties, which now confront China, were equally present in Porto Rico when its system of taxation of land was revised.

A second reason for the selection of the tax system of Porto Rico for special study lies in the fact that this system is one the administration of which is wholly vested in the central government. All of the officials having to do with its administration, from the first assessment of the property to the final collection of the taxes, are officials of the central government. In this respect its system is radically different from the systems prevailing in most, if not all, of the several states of the United States. This is a matter of the utmost importance. The administration of the systems of property taxes in the United States is admittedly defective in the extreme. This is not true of Porto Rico. To a large extent the reason for the superiority of the Porto Rican system lies in this fact that complete authority over its operation is vested in the hands of the central government instead of in those of the local authorities. As will appear hereafter, it is the firm conviction of the writer that, for the present at least, full control over taxation must, in China, be exercised by the central authorities. This being so, her attention should be

directed to a system resting on this rather than the contrary principle.

Finally is the fact that the Porto Rican system in its present form, is one which was devised, and its whole scheme of administration worked out, installed and for six years administered, by the writer of the present Memorandum, while he was serving as Treasurer of that Island. It is hardly necessary to point out that this practical experience enables him to appreciate and discuss the technical details of administration of that system in a way that is not true of any other system. It is also of importance to note that the Porto Rican system was adopted only after a careful study had been made of the taxation systems of the several states of the United States and of other countries, and that every effort was made, in devising that system, to incorporate in it the good features and to avoid the bad features of the systems so studied.

## PART I

### Determination of the Basis or Principle of Taxation to be Adopted

*Introductory Remarks*:—The work of discussing and putting into operation a new system of taxation involves two problems: that of determining the character of the tax that it is desired to install; and that of providing the necessary administrative machinery and rules of procedure for the operation in practice of the system so adopted. Manifestly no progress can be made in working out the second problem until a definite determination has been reached in respect to the first. Not until the end sought to be accomplished is clearly seen can an intelligent choice of methods to achieve this end be made. It is our purpose, therefore, in this first part of our Memorandum, to make an analysis of the technical problem of taxation with a view to bringing out the extent to which a choice may be made between alternative systems, and of definitely expressing an opinion regarding the system of taxation which, in the opinion of the writer, it will be more advantageous for China to adopt.

*The Taxation of Land According to its Yield and According to its Value*:—A study of the experience of those countries which have adopted the policy of taxing land, and practically all countries make use of this tax in some form, shows that two quite different systems are possible according as the basis, or the factor, determining the amount of the tax to be paid, is:—

1. The Yield or revenue obtained from land, or
2. The Value of the land.

Whether one or the other of these two principles is adopted determines, not only the whole character of the tax, but the whole system that must be devised for its administration. Before any other steps can be taken it is thus necessary to examine the relative advantages and disadvantages of these two systems, and, on the basis of such examination, to determine which of the two should be adopted.

*Principle of Taxing Land according to its Yield*:—The system of making the yield of land, or the revenue obtained from it, the basis of taxation results in a system of taxation that can be looked upon as either: (a) a tax on the yield or product or, (b) a tax on the land, its yield or income being considered simply as the factor determining the amount of the tax to be paid. Practically, however, it is of little importance which of these two views is taken. In its essence this tax is an income tax. It represents the effort on the part of the state to share in the return received from the utilization of land. It is furthermore a tax upon the gross rather than the net income since little or no effort is made to determine the cost entailed in producing the income.

Certain important consequences follow from the adoption of this principle of taxation. The first, and most important, is that the tax is not levied on all the land from which an income or return has not been received during the taxation period. All land which has not been cultivated or subjected to use in some way escapes taxation, even though that land may, in fact, be of great value. Furthermore, land which is used, but used in a non-productive manner, or used in such a way as to produce a smaller income than it could be made to yield, likewise escapes taxation in whole or in part. Thus land valuable for agricultural or business purposes which is used as a private park or game preserve will, under this system, make no payment to the public treasury. In England and other countries, where this system of taxation has obtained, it has thus been possible for wealthy persons to devote large areas of valuable land to purposes of private enjoyment without paying any tax thereon to the government. The general loss to the country, due to the failure to use its resources in the most effective way, is of as great importance as the direct loss to the treasury.

Another important consequence following from the adoption of this system is that the administration problem is presented of determining each year the yield actually obtained from each piece of property. This is a matter of great difficulty. So difficult, indeed, is it that the effort is rarely made in practice to carry out the theory to its logical conclusion, the state contenting itself with determining the yield in an approximate way on the basis of returns averaged for a series of years.

*Principle of Taxing Land According to its Value*:—The second principle of taxing land that has been mentioned is that where the factor determining the amount of the tax to be paid is the intrinsic value of the land. No regard is paid to the use to which the land is put or the yield obtained from it, except as such factor is used as one of the elements of determining the value of the land. Under this system the state assumes towards the land much the position of a landlord, and the owner that of a tenant, with the important qualifications, however, that the state does not seek to secure from the tenants the full rental value of the land, but only a nominal rent, which is denominated a tax, and that the owner can retain possession so long as this tax payment is made, and can fully transfer his interest to others.

This system presents a number of advantages over the system of taxing land according to its yield. The first of these is that no land having any value escapes taxation. A second is that all land must pay taxes in proportion to its value whether the owners make a productive use of the land or not. From the taxation standpoint, it is a matter of indifference to the state whether the owner of land allows it to remain unutilized, or uses it in such a way as to produce an income below that which it could be made to yield if it were put to the use to which it is best adapted.

Still another advantage is that this system provides a strong incentive for the utilization of land to its best advantage. Only in exceptional cases will owners of land be willing to continue for any length of time to pay taxes on land from which they obtain no return. If they are so situated that they cannot make an effective use of the land themselves, they will sell it, or rent it, to others who will put it to some productive use. The social gain thus resulting from having a full utilization of the natural resources of the country is of great importance. The writer saw this exemplified in a striking way in Porto Rico. The system of land taxation existing in that Island prior to the American occupation rested upon the first of the two principles that we have described. Under this system, as we have pointed out, land lying idle paid no taxes. Advantage of this was taken by landowners to hold large tracts of valuable land unutilized awaiting a rise in their value. The new system put into operation by the American government was based upon the second principle, under which all land became subject to taxation. The result was, not only a great increase in the amount obtained from the tax, but the rapid utilization in some productive way of land which had formerly lain idle.

Other advantages of this form of taxation have to do with the relative ease and economy with which it can be administered. When the tax is determined by yield, this yield has to be determined each year, or at least at frequent intervals of time. The determining factor, in a word, is a variable element. In marked contrast with this, the factor of value is comparatively stable. Once determined, no change need be made in it except when unusual conditions give rise to a change in the value of particular properties. Such changes in value as do take place are apt to affect entire districts, and account of them can easily be

taken by applying to prior existing values, as already determined, a percentage increase or decrease as the case may be. These changes are ones brought about by increase in population of a district, the building of railways, canals, or other improved means of transportation, the construction of irrigation systems, conservancy works, etc. This element of stability is one which is of great advantage, both to the government and the taxpayer. To the government it means that the work of determining the amount of taxes to be paid by the several pieces of land once made, with minor revisions, will continue to serve its purpose for many years, and, what is a matter of great importance, the government will always know in advance approximately the amount of income that it can expect to derive from this source. To the tax payer it will mean that he can know definitely the amount of the payments that he will have to make on account of land owned by him and can thus take this factor into consideration in fixing the amount of rent that he will demand, or in making provision for meeting these payments when they fall due.

The foregoing contrast of the two systems has clearly foreshadowed the opinion of the writer as regards which of the two systems has the superior merits. In the opinion of the writer, the first decision that China should make, in revising her land tax system, is that the revised system should rest squarely upon the principle of the taxation of land according to its value. This decision should be made, because this system is equitable, because its collateral consequences promote the development of the country, and, above all, because its administration can be had with far less trouble and expense than is involved in the operation of the alternative system. In view of conditions now existing in China this last fact should alone be decisive in determining which of the two systems should be adopted.

*The Question of Taxing Improvements to Land:*—Having reached a decision to tax land according to its value rather than its yield, the next point presenting itself for decision is whether land, for purposes of taxation, shall be deemed to consist of the soil alone or of the soil and all improvements permanently attached to it. These improvements are of a varied character. They consist of buildings, fences, drainage or irrigation ditches, roadways and the like. They are property which has little or no value apart from the land on which they are located. Almost invariably, they are rented or sold in connection with the land. Together with the land proper, they constitute a class of property that is designated in most countries as real estate. The question then is whether the tax to be adopted shall be a tax on land or a tax on real estate.

If we consult the practice of most countries which have a land value tax we will find that in practically all cases the decision has been in favor of a real estate tax. Certainly this is the form in which this tax has been adopted by most, if not all, of the states of the United States. Notwithstanding this fact, there are, however, in the opinion of the writer, certain advantages of the straight land over the real estate tax which should lead to its adoption by China. In the first place, it should be noted that the United States has adopted the real estate tax, not because this tax was deemed to be superior to the land tax, but because this was necessary as a part of its system of taxing property of all kinds, personalty as well as real estate. In the second place, practically all students of taxation in the United States are of the opinion that the general property tax as it prevails in that country is exceedingly defective and leads to all sorts of difficulties and abuse in its administration. There is consequently a steadily growing demand for the exemption of personalty, or at least all personal property of an intangible character, from taxation. Passing beyond this, there is also a strong movement for the shifting of the burden of taxation more and more from improvements on land to the land itself. In adopting a straight land tax China would thus be adopting a system towards which the United States is more and more moving.

It would take us too far from our subject to attempt to enter into all the arguments that may be brought forward in favor of this policy. It may be noted, in passing, however, that this tax has much to commend it from the standpoint of theory. Land is largely a gift of nature. Only in part has it been made valuable through individual labor. Its present value is, for the most part, the result of its natural fertility and the general development of the country. It is thus but equitable that the general community should share in the value which it has produced. Improvements to land, on the other hand, are the result, not only of the labor of particular individuals, but, for the most part, of those particular individuals who are in possession or their immediate predecessors. Again, the imposing of a tax on land has no effect in the way of diminishing its quantity or intrinsic worth; the taxation of improvements means the placing of a penalty upon the production of wealth in this form. The knowledge that a man's taxes will be raised in proportion as he makes improvements upon his land cannot but act as a deterrent to the making of such improvements; while the knowledge that such improvements when made will in no way increase the taxes to be paid will be a direct encouragement to the undertaking of such socially desirable works.

After all, however, the deciding consideration, in the case of China, should be the great simplification in the administration that will thereby result. As will be seen hereafter, much the most difficult part of the whole problem of establishing a land or real estate tax consists in the work of making the first list and valuation of all the property subject to the tax. At best this is an undertaking of great magnitude. If the assessors have to obtain a record of, and to value, all buildings and other improvements, as well as land on which they are situated, their work will be almost doubled. Moreover, standards of valuation can be set up for land which will be impossible for improvements. This will mean that the work of the assessors can be facilitated and controlled, where land alone is in question, in a way that will be out of the question when improvements have also to be valued.

Finally, it should be noted, that the decision to exempt all improvements, except possibly such as constitute a part of the soil, such as ditches, drains, and the like, does not necessarily mean that the amount to be raised by the system of taxation will be lessened. It means merely that the rate of the tax upon the land will be somewhat higher than it would be if imposed upon a valuation that included improvements as well as land. This will not be felt by the tax payers as a class since it is immaterial how the total tax is determined provided the total amount of taxes to be paid is not increased. The amount of taxes paid by owners of unimproved land will, however, be somewhat increased, and that paid by owners of land having improvements upon it correspondingly decreased, but this is by no means an undesirable result of this form of taxation.

*Principle of Taxing the Land and Not the Landowner:*—Before leaving this question of the basis or theory of taxation that should be adopted it is desirable to call attention to one other exceedingly important principle. This is that the tax should be definitely recognized as one resting upon the land and not upon the landowner, renter, or occupier, or any other person. Whether the one or the other of these principles is adopted determines the whole character of the system that must be adopted for the administration of the tax. If the tax is deemed to be one resting upon the landowner, the problem presented to the government is that of obtaining a complete list of all landowners with information regarding the amount and value of the land owned by each. After such a list and valuation is once secured it must be kept constantly revised to date. This means that some system must be devised whereby information can be secured by the tax authorities of all transfers of property taking place as the result of sales of land or the decease of landowners. This problem, moreover, will be greatly complicated by the fact that land is in many cases held by more than one party the interests of whom may be very diverse and difficult of determination. In not a few cases the title to land may be in dispute and it will be impossible to determine accurately who the true owner is.

If, on the other hand, the tax is deemed to be one resting on, and running with the land, all these difficulties disappear. The amount of land is practically a fixed and unchangeable quantity. It does not vary or change its location as does a list

of landowners. Once a piece of land is entered upon the tax rolls there is no way for it to get away. Under this principle the government is not concerned with who is the owner. It merely states that such and such a tax payment must be paid on account of each piece of property listed, and if it is not paid the government will seize it and sell it. From the theoretical standpoint, it is not even under the obligation of giving notice to the individual owners of property of the amounts due, or of calling upon them to come forward and pay the taxes so levied. All that it need do is to make public the tax rolls and leave it to the owners of property to come forward and protect their property by paying the taxes due on such property. Instead of having to go after the tax payers, it makes them come to it.

It will be seen from this that the fundamental principle of this tax is that it is a rent charge or first lien upon the land. It is not a personal obligation of the land owner. Having this character it is enforced in exactly the same way that any lien on land privately owned is enforced, with the exception that a specially expeditious system for such enforcement is usually provided. The advantages of this system over one where individuals have to be approached and proceeded against are manifest.

There remains yet another advantage of this system which requires prominent mention. This is that this system lends itself to the establishment of a far more effective control on the part of the central office over the collectors entrusted with the duty of receiving the tax payments than can be secured under the other system. The central office is in possession of the complete tax rolls showing exactly the amount of tax that should be paid on account of each piece of land. As will be shown more fully in that part of this Memorandum dealing with the question of the administrative machinery and processes required for the collection of the tax, it is possible to make such regulations as will ensure that every dollar collected will be duly accounted for and turned into the treasury. From this standpoint the great advantage of the system is that it has an impersonal character. As far as is humanly possible the personal element is eliminated.

Especial care has been taken to emphasize the importance of this feature since it represents what is probably the most defective feature of the present system of taxing land in China. This system rests upon the attempt to tax landowners rather than the land itself. So far is this principle carried that in many cases the government looks to the theoretical landowner rather than the actual landowner. This arises from the fact that owners of land in selling it often agree, in return for a larger purchase price than would otherwise be paid, to continue to pay the tax assessed against the land sold. What was originally a land tax is thus converted into a personal obligation. These persons or their descendants in time die or remove from the district and the government is no longer able to enforce payment from them. The result is a constantly diminishing list of tax payers, and the tendency is for the land tax to become of constantly decreasing productivity, instead of becoming more and more productive as the country develops.

Apart from this special case the government encounters all sorts of difficulties in determining who shall pay the tax and in enforcing such payment. So great are these that the central government makes scarcely an effort in this direction and leaves the whole matter of administration to the several provinces and districts, each to be solved in the best way that it can. The writer thus has no hesitation in saying that if the central government is really to reform the existing system and itself seek to control the administration of the reformed system, this is one of the cardinal points that must receive due attention.

## PART II

### The Assessment of Land

*Introductory Remarks:*—We have now reached the proposition where it is supposed that the character of the tax that it is desired to adopt has been decided upon, and that the decision has been made that the tax shall be one upon land alone, shall be determined by the value of the land, and deemed to be one resting upon the land and not upon the landowner. Having thus settled the principle or theory of the tax, we are now prepared to enter upon a consideration of the nature of the problem presented in putting such a tax into operation.

As the tax is one resting upon land, and is determined by the value of the land, manifestly the first step that must be taken is that of securing a complete record of all pieces of land and their values. The process of securing such a record is technically designated an "Assessment." It is hardly possible to exaggerate the importance of having this fundamental operation performed with the greatest possible care and thoroughness. It constitutes by far the most vital feature of the whole system necessary for the administration of the tax. Whether it is well or poorly done, determines, not merely whether the State receives the income from the tax that it should, but whether the tax in practice is a just tax. If equitably performed it means that the opinion will prevail in the community that all citizens are contributing their due quota to the support of the government. If inequitably performed it means that there will exist a sense of injustice that will give rise to recriminations, protests and opposition which may go so far as to threaten the security of the State itself. High political as well as mere financial considerations are thus concerned with having this work done with the greatest possible care.

It is probably not going too far to say that the whole success of the tax depends upon the manner in which this work is done. Any change in the system of taxation of a country is certain to give rise to opposition. It is of the utmost importance that no valid ground for this opposition should exist. It fell to the lot of the present writer to make such an assessment of land for the Island of Porto Rico. It was his experience that the bulk of the opposition that was encountered was due to the feeling on the part of landowners, not that they were called upon to pay too high a tax, but that their properties had not been fairly assessed, that the values placed upon their lands were higher than those assigned to similar lands belonging to their neighbors. As will be seen hereafter, great pains were taken to ensure that all such complaints were duly investigated to the end that tax payers might see that every possible effort was being made by the government to treat them justly.

Special emphasis is given to this point, since it is certain that the attempt on the part of China to reform its land tax system will meet with determined opposition, and no opportunity must be permitted for this opposition to justify itself by the citation of real grievances. It should furthermore be noted that to many the only direct relations that they have with the government is as tax payers. China has no more important or fundamental task before it than that of advancing the political education of the people, and of securing their loyal support of the government. The first requisite to achieving this end is that the people shall feel that they are being treated fairly and equitably in respect to the demands made upon them as tax payers.

*Character of Assessment Data Required:*—It has been stated that the first preliminary to the enforcement of a land-tax system, such as has been suggested, is that a record shall be obtained of all pieces of land and their respective values. The securing and utilization of these data require, however, the collection of certain other collateral information. To meet all requirements there should be obtained the following information regarding each separate piece of land.

1. Data by which it may be identified or designated.
2. Its location.
3. Its area.
4. Its character.
5. The name and address of its owner or occupier.
6. Its value per unit of measurement and its total value.

A few words should be said in regard to each of these required items of information.

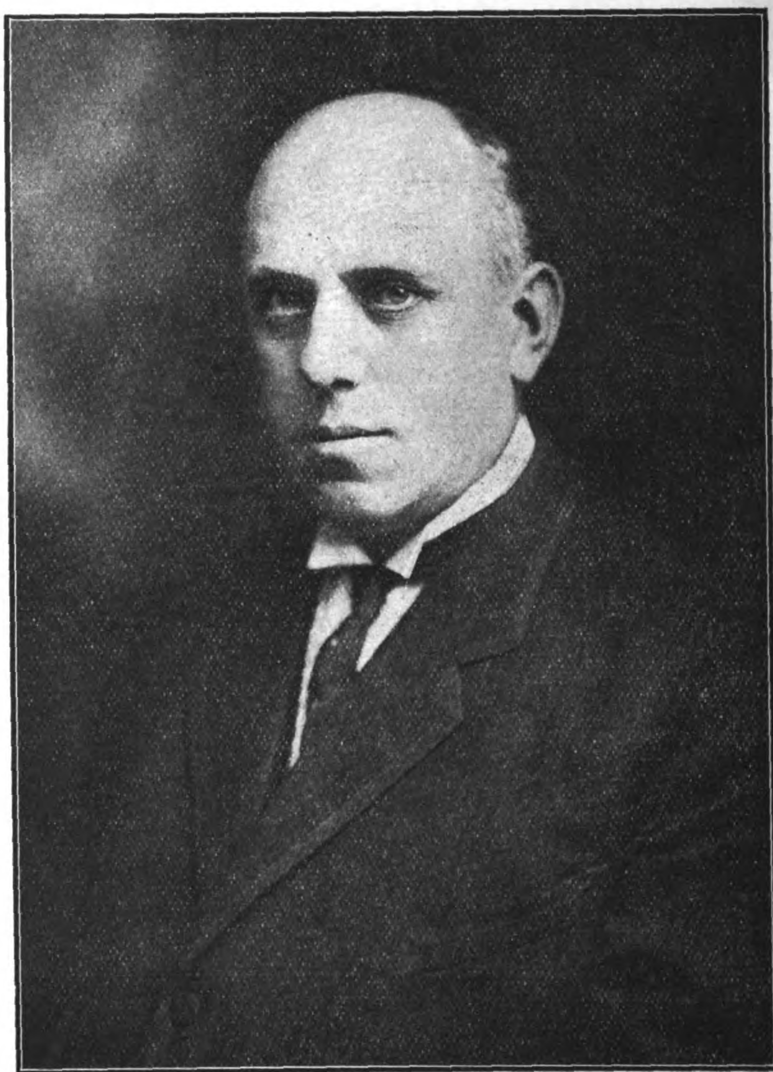
*(To be continued in the December Issue)*

# AMERICAN RAILWAY CONSTRUCTORS BEGIN WORK IN CHINA

## Projected Railway Through Kwangsi Province

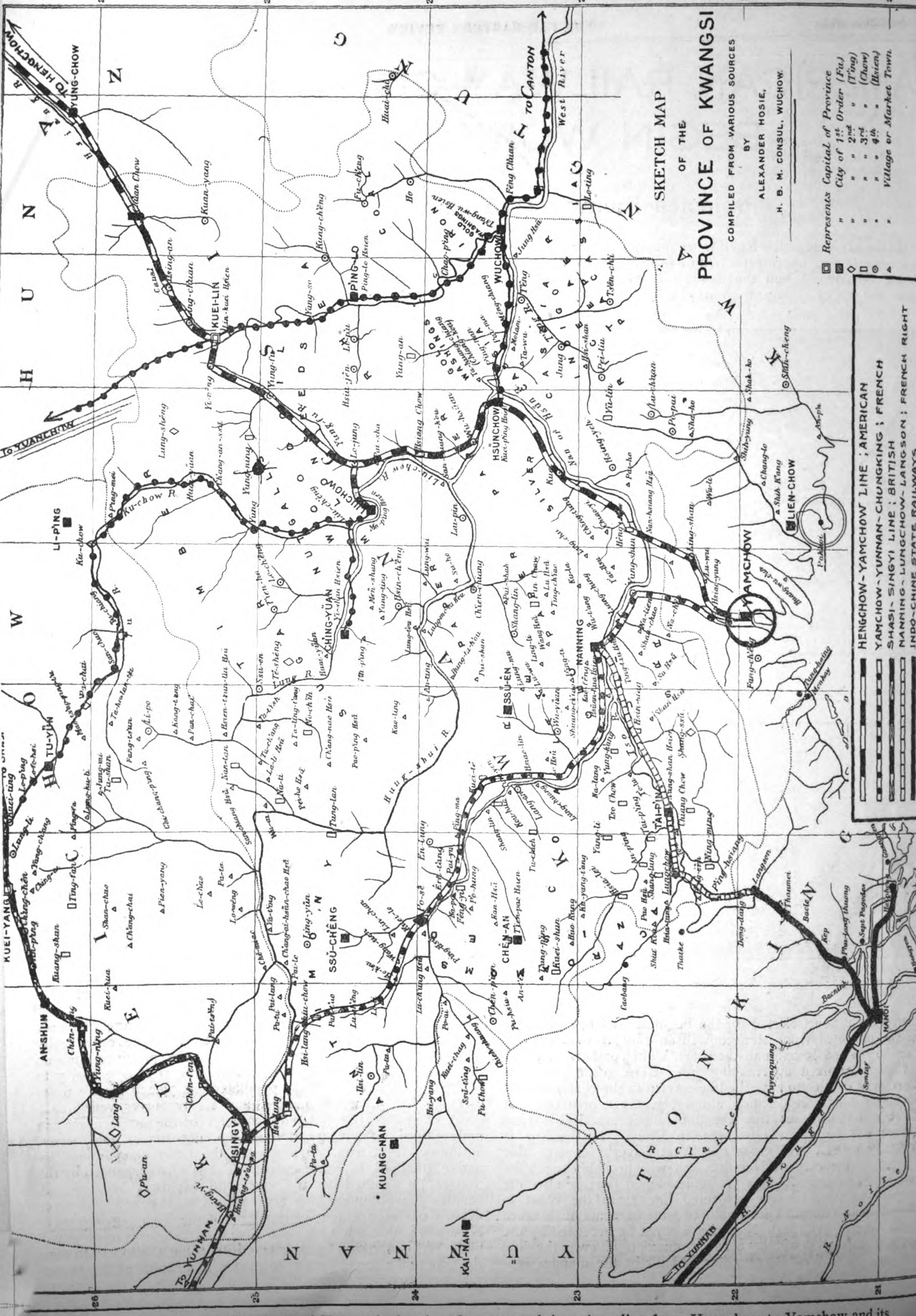
In the last issue of the REVIEW we mentioned the signature of a contract for the construction of railways in China by the Chinese Government and the American contracting firm of Siems and Carey. Several routes were proposed in that contract and the one selected for the beginning of operations is the line projected from Hengchowfu in Hunan Prov nce via Yungchowfu and Kweilin to the coast. The southern terminal was originally fixed at Nanning but after consideration the Government decided to have the line carried to the coast, leaving Nanning out of consideration altogether. It is provided that if the survey discloses that the line is not practicable equal mileage will be given elsewhere in China. If the line is eventually built it will cross the West River a considerable distance to the east of Nanning, and will probably touch the coast at Yamchow. As this yet undeveloped port is also the proposed terminal for the projected line from the coast to Nanning and Yunnanfu it should become of some importance in the future. Although Nanning will not be benefited by the line now proposed it will have rail connexion if ever the line projected up the West River valley is built by the management of the Banque Industrielle, who hold the contract to furnish the capital for its construction.

MR. W. F. CAREY

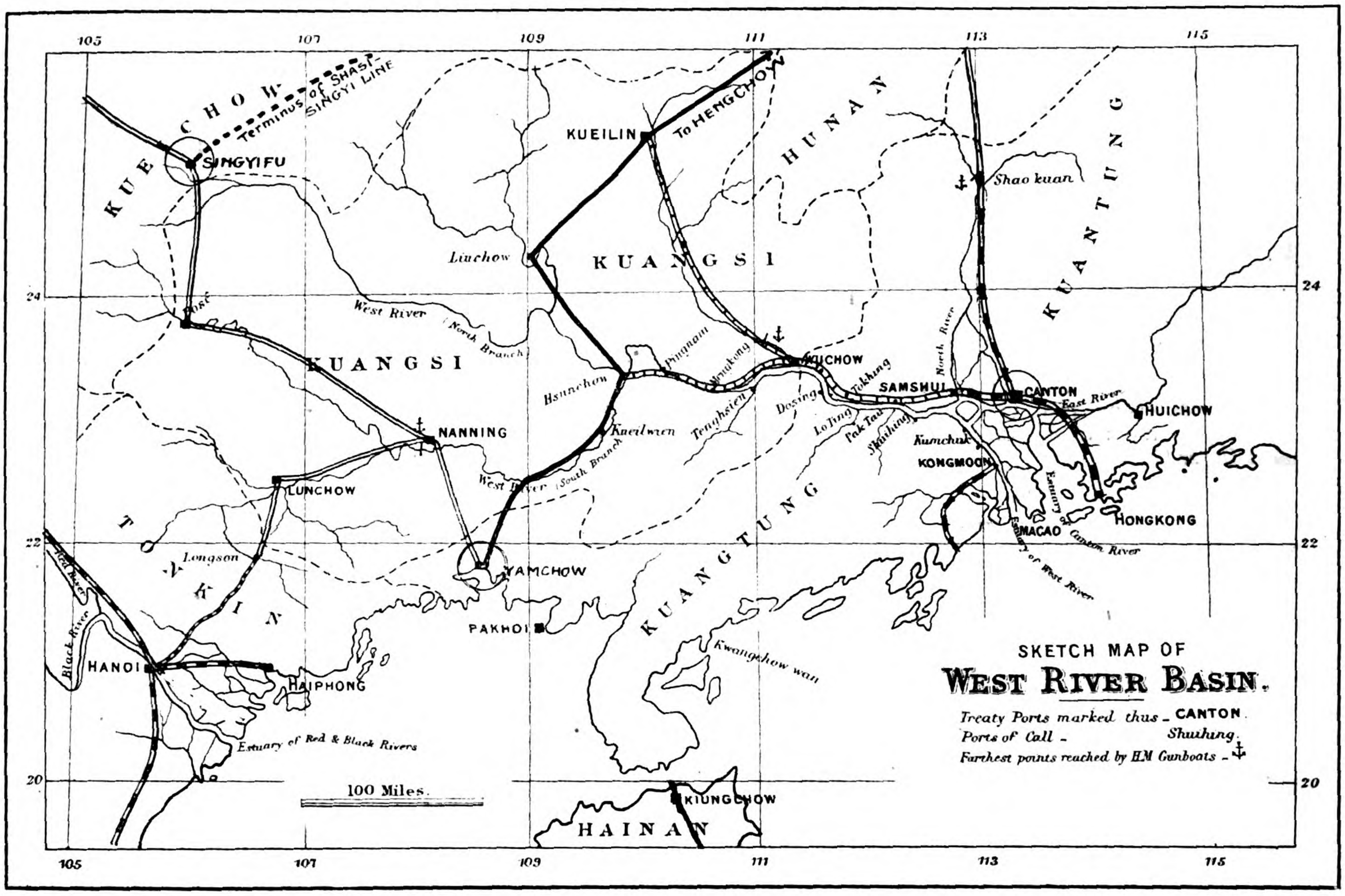


MR. F. C. HITCHCOCK

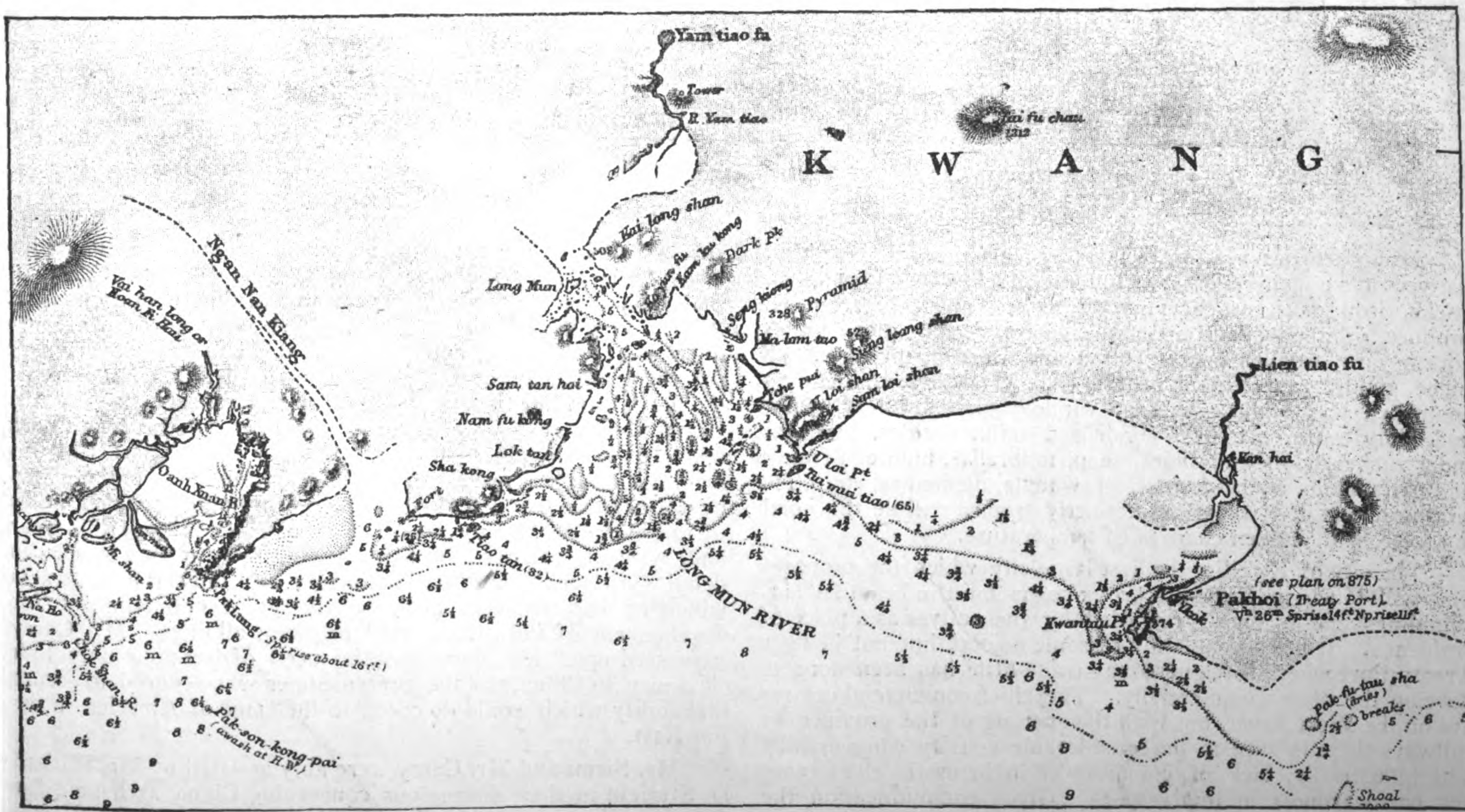
If it is practicable to build this railway, its importance to the development of Kwangsi Province will be apparent to any student of the map of China. So far Kwangsi is accessible only by rivers, and of these the West River is the only really possible one. There is no railway in the province, and no province needs railway communication more if it is properly to be developed. It is sparsely populated, its 77,220 square miles carrying but 5,140,000 people, and its resources, veiled to a great extent by the isolated character of the province, remain undeveloped. There are, it is known, deposits of gold, silver, antimony, lead, iron, tin and coal, the latter being mined by native methods to some extent. Tin is also produced by the natives, is smelted on the spot, and exported in slabs. A smelter for antimony was also opened at Wuchow. A silver deposit of some extent is reported in the Tienying hills, near Kweihsien, through which the projected railway probably will pass. A concession was granted to some Cantonese to mine the area and a company was formed with a capital of $2,000,000




Sketch Map of the Province of Kwangsi, showing the proposed American line from Hengchow to Yamchow and its
tions with other lines.




Sketch Map of the West River Basin, showing the relation of the proposed American line from Yamchow to Hengchow, to the great port of Canton.




The Port of Yamchow (Yamtiaofu) showing the depth of the water in fathoms. To make this harbor a proper terminal for two trunk railways, extensive dredging and other works will have to be carried out.

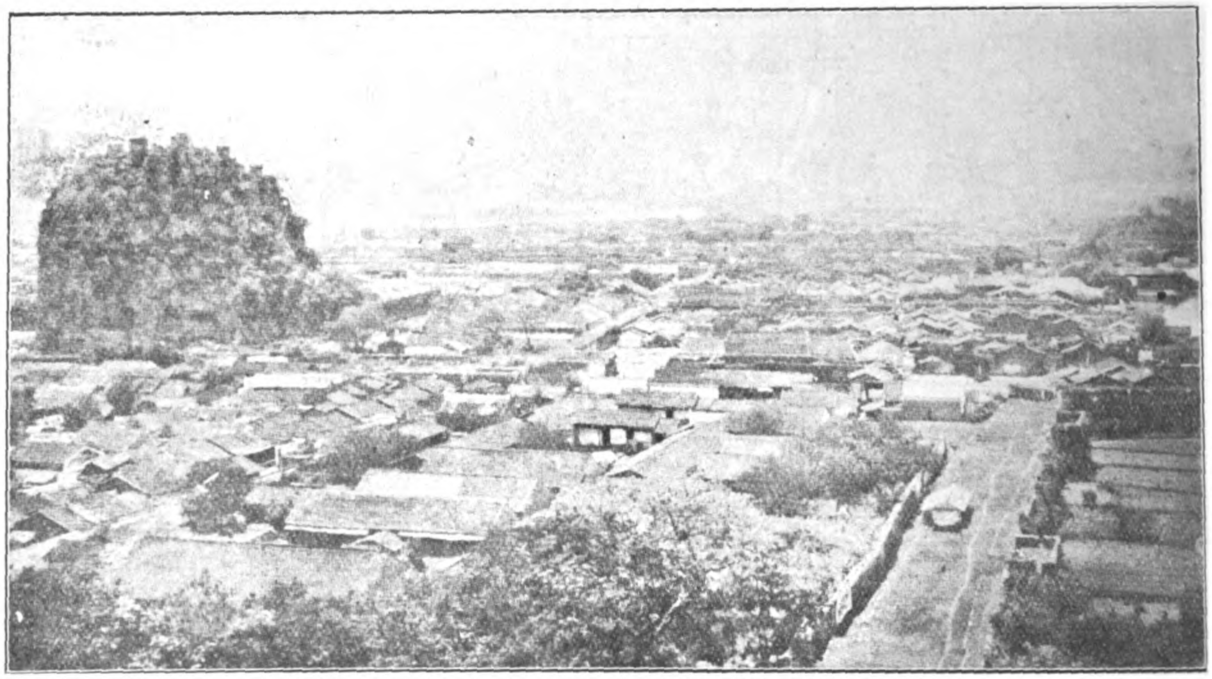
Mexican currency a few years ago. A native mining expert educated in America made a careful inspection of the deposits and reported the existence of no less than twenty veins of silver producing on an average an ore that will clean up ten ounces of silver to each one hundred pounds of ore, and that in addition to the silver there are small deposits of gold, copper and lead. The concessionaires hoped to turn out 100 tons of ore per day, but working reports being unavailable it is impossible to say what development if any has taken place.

In agriculture Kwangsi has the name of being the "granary of Kwangtung," despite the mountainous character of much of the province, rice, wheat, maize, millet, and buckwheat being cultivated in the numerous fertile valleys. The principal natural products are aniseed, camphor, beans, tobacco, rice, indigo, sugar, potatoes, olives, groundnuts, cotton, bamboo, false gambier, cassia, fruit in abundance, silk and corn. There are forests of maple, ebony, teak, and other timbers, which have been worked by the natives, rafts being floated down the streams as far as Canton.

Mr. Geo. A. Kyle, the Chief-Engineer for the railways to be built under the Siems & Carey contract, arrived in Peking on November 20 with Messrs. Carroll and Sullivan, two of his assistant engineers. The first survey party left during the latter part of November and accompanying it were Mr. F. C. Hitchcock, the Vice-President and General Manager of the Siems-Carey Railway & Canal Company. It is thought that some three to four months at least will be taken in making the reconnaissance of this line before a detailed survey is undertaken.

This railway will link up the present systems in China with the South-west, and through rail connection with Peking, Shanghai and Hankow from Kwangsi will prove of immense value to the Peking Government in administering the hitherto inaccessible South-west.

The American International Corporation and the Siems-Carey Railway & Canal Co., have persuaded the members of their respective organizations that only the very best ability be selected for work here. Mr. W. F. Carey, who is well known for his work in the construction world and who is one of the senior partners in the contracting firm of Siems & Carey, of St. Paul, came to China last year to look into conditions here. After a very close study of the situation he succeeded in arranging for a commercial contract with the Chinese Government for the building of the railroads mentioned in the last issue of the FAR EASTERN REVIEW, and also the conservation of the Grand Canal. Upon the reports of Mr. Carey the New York financiers readily placed at the disposal of the Chinese Government a sum necessary for investigation of the lines contemplated by this contract, and took the option for building 2,600 miles of railroad. Mr. Carey went to New York in May of this year and, with his partner Mr. Siems, discussed for two months in detail with the New York financiers not only the contracts which he had secured, but also the great opportunities for development of industries in China along all lines. Mr. Carey impressed upon his associates the need of sending only first class men to China, and the United States was scoured to secure that ability which would do credit to the name of America in the Far East.

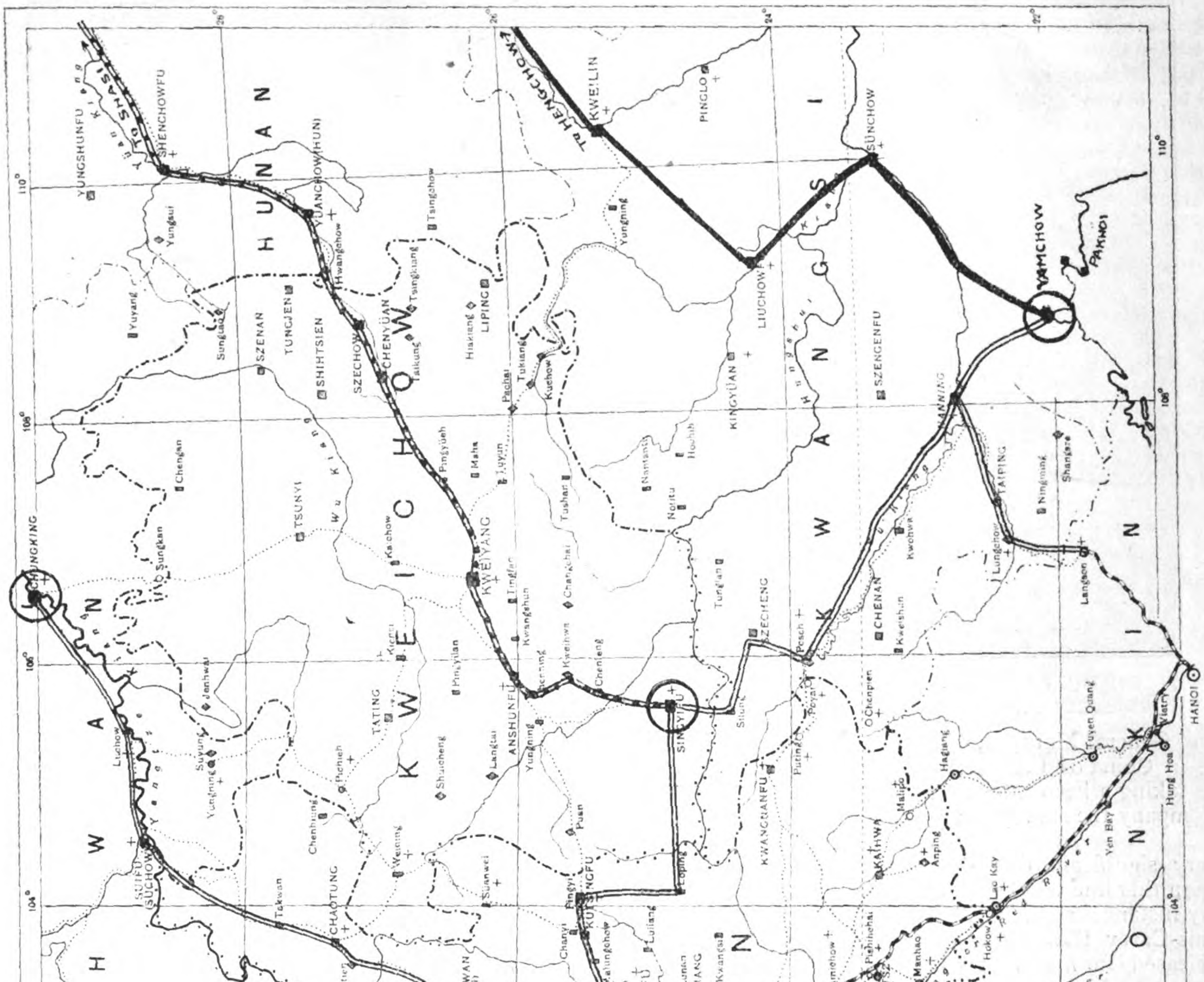


THE CITY OF KWEILIN, THE PROVINCIAL CAPITAL OF KWANGSI. ON THE LINE OF THE PROPOSED HENGCHOW-YAMCHOW RAILWAY

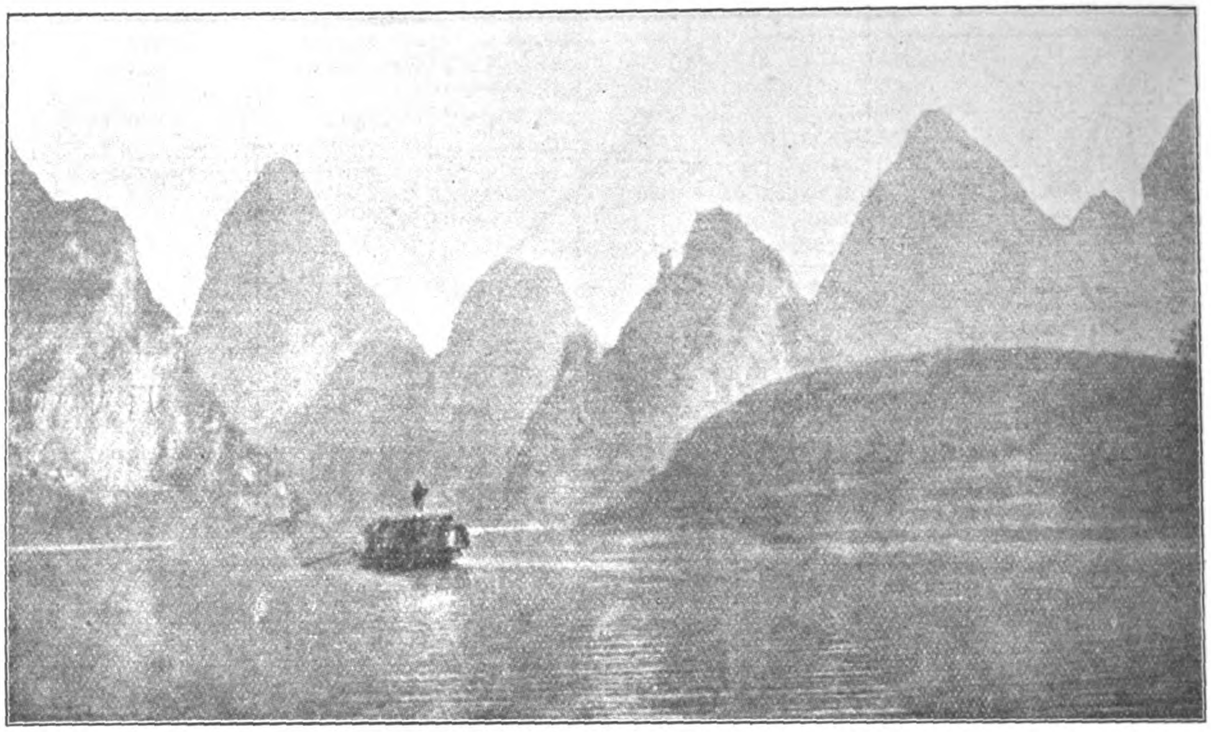
Manufactories are conspicuous by their absence, though the natives make paper, leather, firecrackers, and fireworks, joss sticks, iron pans, crockery, and finished products from the produce of the soil. Imports comprise cotton piece goods, cotton yarn, woollen goods, cotton and woollen mixtures, silk piece goods, raw cotton, metals, coal, cigarettes, aniline dyes, enamelled ware, flour, ginseng, window glass, hosiery, lamps and lamp ware, matches, condensed milk, needles, kerosene, india rubber boots and shoes, soap, umbrellas, umbrella frames and parts, alum, beche-de-mer, straw mats, medicines, etc. The southern part of Kwangsi is distinctly tropical, while the north is cooler, with sudden changes of temperature.

The city of Kweilin, the first large city which the proposed line will touch in Kwangsi province, is built in beautiful surroundings and is highly regarded by the natives as a place of residence. It has a population of some 80,000, but not being a Treaty Port where foreigners may trade little has been done to develop the place commercially. The chief commercial centres are on the West River, but with the opening of the province by railways there is sure to be considerable activity commercially and industrially, lack of communication being the chief cause for backwardness in this respect. Given communication the enterprising Cantonese from the adjoining province of Kwangtung will increase greatly and contribute largely to the economical advancement of the province.

Mr. Siems and Mr. Carey were ably assisted by Mr. Willard D. Straight in their discussions concerning China as a field for American investment. Mr. Carey will as President of the Siems-Carey Railway & Canal Co., have direct supervision of the work of this Corporation in China. Mr. F. C. Hitchcock, the Vice-




Showing the relation of the proposed American line to the other lines and projects of South Western China.



BELOW YANGSEH, CASSIA RIVER, KWANGSI—BETWEEN WUCHOW AND KWEILIN

President and General Manager, will in the absence of Mr. Carey have charge in China of the interests of the Corporation. Mr. Hitchcock is taking a keen interest in the contemplated railways, and will accompany the survey party going out on the Chuching line.

It is very significant that the majority of engineers to be employed upon this line will be Chinese and that these men have been in many instances recommended to the Chinese Government by the Siems-Carey Railway & Canal Co. Mr. Hitchcock is extremely pleased to find that China has so many competent young engineers, and he predicts that the future of Chinese railroads can be easily left in the care of the present young engineers, who, after a few more years of experience, will be able to build China's railways.

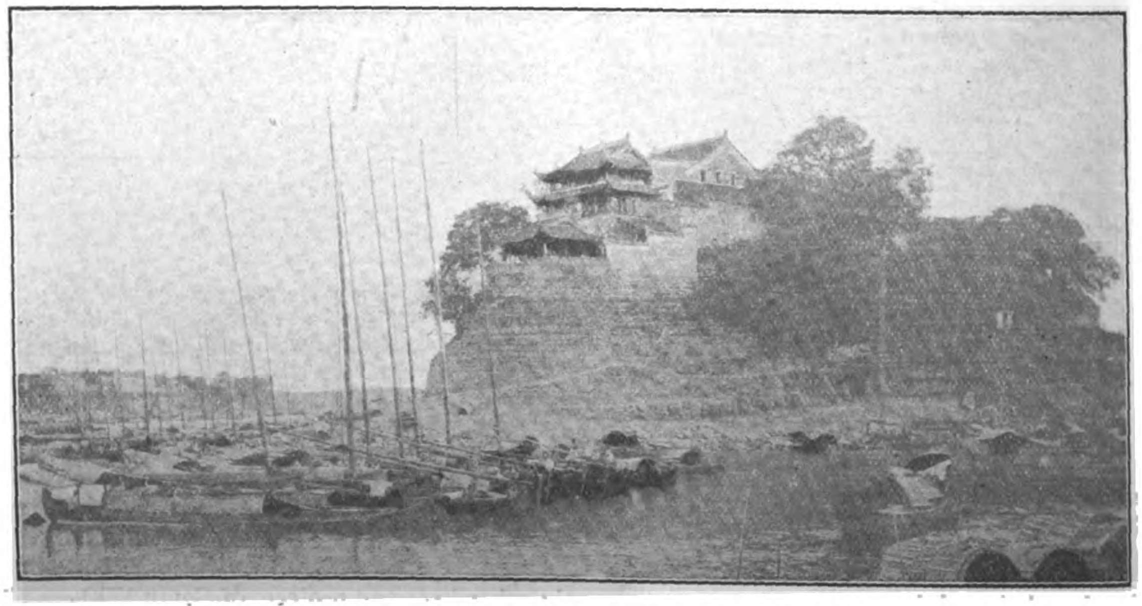
Director-General Sun of the Chuching Railway, is a graduate of Cornell University and had charge of the Ninghsing Railway and was for a while Managing-Director of the Shanghai-Nanking Railway. Mr. Sun is a most competent young Chinese, and is a man of great influence in Peking. He is very thorough and competent in his work, and is doing everything in his power to expedite the construction of this line.

Mr. Harry A. Arthur, the Assistant Secretary and Treasurer of the Siems-Carey Railway & Canal Co., is also in Peking, and this gentleman has had considerable training in the United States and South America with the firm of Stone & Webster. Mr. Arthur is a young man of wide experience who is especially interested in foreign fields and comes to China with a brilliant record for a man of his age.

Mr. L. J. Buckner has been appointed Chief Auditor by the Chinese Government, and this gentleman has had some twenty years of experience with engineering and construction accounts, having been connected for many years with the firm of Winston & Bros., of St. Paul.

Messrs. Arthur and Buckner have been agreeably surprised and pleased with the system of accounting as adopted by the Chinese Government. The work of Dr. Henry C. Adams in the systemizing of railway accounting, having been ably assisted by Dr. C. C. Wang of the Ministry of Communications, will do a great deal towards the efficient management of the present railways as well as all future lines to be constructed.

Because of the great interest shown by Americans at present in investments in China, the China Corporation has been



SHIHKU COLLEGE, HENGSHAN DISTRICT, YUNGCHOW, HONAN PROVINCE

formed with the purpose of developing large industrial enterprises here. The President of this Corporation is Mr. Willard D. Straight and the Vice-President and General Manager, Mr. W. F. Carey. It is the purpose of this organization to set to work immediately to interest American investors in various commercial and industrial enterprises. We hope in a future issue of the FAR EASTERN REVIEW to be able to give our readers more information in regard to this Corporation.

Mr. George A. Kyle, the Chief Engineer of the Chuchow-Chinchow railway, as it is officially called, is 59 years of age. He was educated at Lebanon University, Ohio, U S. A., and began work as chainman in 1876. He remained one year on railroad work but relinquished it to go through college, subsequently resuming his chosen career and filling all the minor positions on an engineer corps during the intervening years to 1882. From then to 1888 he was engaged as a division engineer in charge of location and construction of railroads in the States of Ohio, Illinois, Indiana, Iowa and Minnesota, including 100 miles of railroad for the Chicago and Great Western between St. Paul, Minnesota, and Chicago, Illinois. During 1888 and 1889 he was in charge of location for the Union Pacific Railroad Company in Wyoming, Nevada, and California on their proposed extension to the Pacific Coast from Ogden, Utah, to San Francisco, through the Sierra Mountains, which entailed

MR. GEORGE A. KYLE

some very heavy and costly work. From 1889 to 1894 he was engaged in location and construction of railways for the Northern Pacific Railway Co. as Locating and Division Engineer on several hundred miles of heavy mountain work in Washington, Oregon and Idaho. From 1894 to 1895 he was engaged by the Baltimore and Ohio Railway Co. on maintenance of way between Cincinnati, Ohio, and St. Louis, Missouri. From 1895 to 1898 he was engaged in South Africa on the Simmer and Jack Gold Mine, one of Cecil Rhodes' gold mines, under John Hays Hammond, in charge of installation of the surface improvements such as the stamp mill, cyanide works, head gears and 25 miles of railroad which cost $15,000,000, and in developing the deep level shafts from 3,000 to 4,000 feet deep. From 1899 to 1902 Mr. Kyle was with the Northern Pacific Railway on location, construction and maintenance of way in Washington, Oregon, Montana, Idaho and Canada, which included most heavy mountain work. From 1902 to 1904 inclusive he was on the Grand Trunk Pacific Railway in Canada and employed thirty engineering parties on about 2,000 miles of the line from Lake Superior to the Rocky Mountains.

From 1904 to 1905 he was with the Northern Pacific Railway on location and construction and special work. From 1905 to 1907 he was engaged in Alaska, U. S. A., on the Alaska Central Railway, in charge of the location of 500 miles of railway from Seward to Fairbanks and constructed over 70 miles which was taken over by the United States Government about 18 months ago. From 1907 to 1910 he was assistant Chief of the Chicago-Milwaukee Railway on their extension to the Pacific Coast from Butte Mountain west, including about 800 miles of main line and 300 miles of branches. From 1910 to 1912 he was Chief Engineer and General Manager of the Oregon Trunk Railway in Oregon and built 160 miles of line when work stopped on account of financial difficulties. The work included a bridge across the Columbia River 3,000 feet long and some very difficult and expensive work. From 1912 to 1916 he was consulting engineer on railroad, irrigation, and general engineering work, until engaged by the Republic of China to take up the position he has now come to fill.

Mr. Frederick C. Hitchcock, Vice-President and General Manager of the Siems-Carey Railway and Canal Company, was born in 1864, his father, Mr B. H. Hitchcock, of Ohio, being a distinguished civil engineer of established reputation in America. Having served his apprenticeship in the engineering department of the Toledo and Ohio Central Railroad for four years, Mr. Frederick Hitchcock became Divisional Engineer on construction on the Duluth South Shore and Atlantic Railroad. He was later Divisional Engineer on the New York, Ontario, and Western Railroad, and from 1890 to 1893 was Divisional Engineer in charge of 100 miles of construction on the Norfolk and Western Railroad in Virginia. In 1893 he became Chief Engineer and General Manager for and afterwards partner in the firm of George S. Good and Co. of Pennsylvania, and remained with them for thirteen years. This was a large contracting firm who built over 2,000 miles of railroad during the time that Mr. Hitchcock was with them. Among others were the Choctaw, Oklahoma and Gulf Railroad, the El Paso and South Western Railroad, over 600 miles long; branches for the Pennsylvania Railroad, a considerable portion of the Beech Creek Railroad; a portion of the Chicago, Rock Island and Pacific Railroad; portion of the San Francisco Railroad, and had contracts on the Baltimore and Ohio, as well as important contracts for various improvements of cities, including Washington, Philadelphia and Boston. In 1906 Mr. Hitchcock became Chief Engineer of the National Railroads of Bolivia, South America, and when the construction began was made General Manager of the South American Construction Company which built these lines. In 1908 he was elected Vice-President and General Manager of MacArthur Bros. Company, (and officer in all their allied companies), the oldest and largest contracting firm, and one which has done more contracting work than any other single firm in the United States, it having been organised in 1826. While connected with this company the Ashoken dam was built for the new water supply of the city of New York, as well as ten miles of tunnels in connection with the same system, the whole contract amounting to $22,000,000 gold. The contract for the dam was probably the largest single contract ever let in competition in the United States. The firm also built the dam at Katonah for the New York water supply, the Nederland dam in Colorado and the dam for the Alabama Power Company in Alabama. The locks at Sault Sainte Marie were also built for the United States Government, as well as the shiplock at Buffalo (N.Y.), the Sun River irrigation project, Montana; a large portion of the Fort Laramie irrigation project in Wyoming, as well as other government contracts and work for many cities. The railroad work undertaken during Mr. Hitchcock's management was enormous and included wholly or in part the lines of the following railroad companies: The Tidewater of Virginia; the Big Four; the Southern; the New York Central; the Milwaukee Central; the South and Western; the Gilmore and Pittsburg; the Burlington; the Lehigh and New England; the El Paso and South Western; the Inspiration Copper Co.; the Southern Pacific; the Kettle Valley, in British Columbia, as well as others. MacArthur Bros. were also active in foreign fields and built the Pan-American Railroad in Uruguay, as well as work in other regions. Mr. Hitchcock was Vice-President of MacArthur, Perks and Co, the firm being composed of MacArthur Brothers Company and Sir Robert Perks, of London. This firm built the docks at Havana, Cuba; dredged the harbor of Havana, and built the Coos Bay Railroad for the Southern Pacific railway in Oregon. Mr. Hitchcock resigned from the

following companies to become associated with Messrs. Siems and Carey: Vice-President and General Manager of MacArthur Bros. Co., Vice-President of MacArthur, Perks and Co., President of the United States Equipment Co., Vice-President and General Manager of MacArthur Concrete Pile and Construction Company, Vice-President of the Construction and Engineering Finance Co., and President of the Durax Paving Company.

### A Supplementary Contract

Towards the end of October the Minister of Communications forwarded the following petition to the President in connexion with the American agreement:

"On the 27th day of the 6th month of this year, the late Minister Tsao Ju-lin contracted a loan from an American firm called 'Yu-chung Co.' for the purpose of the construction of railways; and when I took over charge of the affairs of the Ministry I re-submitted the loan contract with comments and notes to the Government for further consideration. I received an instruction from the President to the effect that as the contract was passed by the Cabinet some time ago, it was unnecessary to make any revision, but should be enforced. However, I noticed that there were many ambiguous points, which should be revised before enforcement. In accordance with the provisions made in article 17, both parties may suggest any amendments whenever they think necessary; therefore, I informed the Company and the American Minister that before coming into force a revision should be made on the terms of the contract. The lenders at first refused to make any amendments, but later on they complied with my requests. After holding several conferences to discuss the matter, a supplementary contract containing seven articles was signed which are as follow:—

"(1) The length of the proposed railway has been reduced. In the original contract it is fixed that the line to be constructed shall be 1,500 English miles, and that the direction and locality of this line are to be fixed later on. As we have signed railway loans with other foreign firms, it is feared that the line may be too long, thus interfering with other lines of construction. We have now revised this article and made it 1,100 English miles long. (2) We have reduced the compensation. According to the original contract, the lenders shall be entitled to 25% of the proceeds of the profits of the railway. It has now been reduced to 20%. (3) Details on the issue of bonds, and the making of advances of the proceeds of the loan have been provided for, because in the original agreement nothing has been referred to regarding the above subjects. (4) Rules have been made for the employment of foreign secretaries in the Three Departments of the railway and other members of the staff, and their contracts and salaries have been definitely fixed in order to avoid future troubles. (5) The management of the railway, such as book-keeping, etc., should follow the provisions made in the laws and mandates of the country, so that there will be uniformity with other Government railways. (7) One year after the survey is completed for the construction, the proceeds of the loan should be handed over or advances made, otherwise the contract will become null and void.

"On the 29th day of the 9th month this supplementary contract was signed and put into force. It must be mentioned that during the time of the late President, an advance of Gold $500,000 was made and deposited in the American Bank for the expenses of survey, and the money is still in the Bank. There is not any other advances."

President's Rescript: "Let the Cabinet take note of this memorial."

## VALUE OF JAPANESE SEA-WEED

In Europe only a small part of Ireland is undertaking the cultivation of sea-weed at present, but the method used there is very crude and primitive. The scientists of Europe have been advising their fishermen to follow the example of Japanese fishermen and produce sea-weed which is more valuable than the average person believes. Sloak cultivated in Tokyo Bay amounts to two million yen a year, and the total product of sloak of the country is three million yen. Laminaria is cultivated in Hokkaido, and its yearly product reaches two million yen, and a half of that amount is exported to China. The export of isinglass is also half a million yen. The total export of all sea-weed and products from sea-weed will amount to ten million yen a year.

It is Dr. Yendo's opinion that among the sea-weed growing on the coast of Japan there is none which is not yet utilized for some purpose or other. Those which are left untouched are such sea-weed as could never be used for food or other purposes. In using sea-weed for fertilizer and glue, Japan leads all other nations, and gloiopeltis furacata is the chief weed used for the manufacture of glue. This glue is widely used by the silk and cotton weavers of all nations. Although the Japanese fishermen understand sea-weed thoroughly and utilize it in many ways, they have not yet learned to utilize it for chemical industries. In this respect, Dr. Yendo states, Japan is far behind other nations.

The coast of Hokkaido is famous for the abundant growth of laminaria, the material for iodine, and naturally the iodine manufacturing industry should develop in Hokkaido. But the iodine manufacturing industry of Hokkaido is still in a state of infancy and its annual product is only thirty thousand yen. All factories established in Hokkaido for making iodine are small, and the method used is crude, and they are wasting from one third to one half of iodine in the weed. The people of Hokkaido have good knowledge of laminaria itself, but they lack the knowledge of the chemical process to take iodine from the weeds, and so a large amount of iodine in the weed is wasted in smoke. Dr. Yendo calculates that every year three million yen is wasted in the smoke of iodine. However, such crude iodine made at Hokkaido is all exported to the United States, and there is a good market for the iodine in even far larger quantities than is made in Hokkaido. Not only for iodine, but for many other chemical purposes, sea-weed could be used, but at present those interested in sea-weed do not have enough knowledge to utilize them.

The use of sea-weed for food and glue, the Japanese learned from the Chinese, but the present way of utilising it was all originated by Japanese fishermen. The reason why the iodine manufacturing industry does not progress in Japan, Dr. Yendo says, is because the people have not tried to improve the present method. In the method of making iodine from sea-weed, we have no example to follow, and the Japanese fishermen and also scientists should study the problem and find methods suitable for the industry.

It was formerly the habit of Japanese scientists and businessmen to follow the system and examples of foreign countries, but in this field, they have not found any example. That is probably the reason why they have not given any thought to the matter. Another matter which is preventing the development of the iodine industry is the enforcement of the Salt Law which prohibits the private use of salt which is a by-product of iodine. At present iodine manufacturers are compelled to throw away valuable by-products on account of the Salt Monopoly Law.

There is a good field for development for any industry utilising sea-weed, and it is the advice of Dr. Yendo to the scientists of Japan to make investigations into the possible fields of utilizing sea-weed which is so abundant in every part of the country. By the proper methods, the income from sea-weed could be easily made to produce a tremendous amount. All told, the sea-weed is only yielding ten million yen a year. The two million export of sea-weed and its product could be doubled by a little improvement by the manufacturers. The crude iodine which is exported to the United States and imported to Japan as refined iodine could be easily produced as refined iodine if the Japanese scientists gave a little thought to the subject.

Dr. Yendo concludes with the prediction that out of sea-weed Japan can obtain a large amount of income, and there is no other country to compete with Japan in this field. Not only other countries have not sufficient sea-weed, but historically, they are not acquainted with it.

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## W. J. CALHOUN

William James Calhoun, ex-envoy extraordinary and minister plenipotentiary of the United States to China, passed away at his home in Chicago on September 19. His death is a real loss to the country. He was a true American, a loyal and sympathetic friend, and a high type of the old fashioned American gentleman. All who had the good fortune to know him, loved him. He requires no eulogy. His works will live after him. His splendid record will serve to stimulate others and set an example of pure, undiluted Americanism for coming generations to live up to. On two occasions his wise counsel saved the nation from war. At Havana in 1897 when American lives and interests were jeopardized by the rabid Spanish *voluntarios*, and the situation got beyond General Fitz Hugh Lee, President McKinley sent Calhoun as his personal representative to investigate and report on the situation. His report formed the basis of the Government's policy and decided its action up to the time of the destruction of the Maine, and the declaration of hostilities. Later he was sent by President Roosevelt on a similar mission to Venezuela at a time when it looked as though the nation would have to defend the Monroe Doctrine, and once more his valuable report and sane advice formed the basis of the Government's policy in straightening out a delicate international tangle and averting war. President Taft sent him to China to advise the administration on the grave international questions created by the moves of other Powers which appeared to conflict with the policy of the Open Door and China's independence. In his quiet, thorough way, Mr. Calhoun soon mastered the intricacies of the great world problems in the Far East, and by his advice smoothed over difficult international situations with credit to America, and again his reports and counsel made the policy of the Government. The country needs more Americans of his type. In the years to come, when serious and delicate international issues arise requiring the highest statesmanship, diplomacy and judicial qualities for their solution, our thoughts will turn back to one who subordinated personal and political considerations to the higher obligations and duties imposed by a pure love of country and undiluted Americanism. We will then remember William James Calhoun, and his work in Cuba, in Venezuela, and in China.

## WILL CHINA'S INDEPENDENCE BE MAINTAINED?

Although certain elements of Chinese society are prone to misinterpret the proffer of unpalatable advice as an indication of lack of sympathy for China, the present crisis demands that those who wish the country and the people well should speak frankly and without reserve. Laceration of the feelings of the hypersensitive element referred to must be risked if it be desired to bring home to the Chinese people the imminent danger that exists that they may lose their independence.

Among the more advanced countries the principle of nationalism has gained acceptance. That is to say it is recognized that races should, wherever possible, be permitted to exercise self-government and work out unhampered their national destiny. Both for selfish and altruistic reasons some of the great Powers wish to see the weaker nations remain independent and not become politically merged with stronger neighbours. Again and again it has been asserted that the present war is being fought to vindicate the principle of nationalism, and the extraordinary spectacle has recently been presented of Austria-Hungary, in which the principle could not be admitted as applied to the Dual Monarchy itself without the disappearance of Austria-Hungary

as an entity, associating herself with the policy of re-establishing the Polish nation. With the sincerity of these professions of belief in the righteousness and desirability of general application of the principle of nationalism we are not at present concerned; all we desire to do is to direct attention to the fact that the belligerent nations all claim to be defenders of the principle. It may be affirmed that the moral sense of the world now revolts from the mediæval policy of subjugating a weaker state by military force and condemning its people to political enslavement.

China, therefore, would on the surface seem to have her independence assured. Five Powers have engaged themselves to respect her independence and territorial integrity. There is, however, a moral obligation on the part of China to demonstrate that she is fit to remain independent. However altruistic the Powers may be and however strong may be their belief in the principle of nationalism, they require from states to which they afford guarantees of independence proof that they are thereby assisting and not hindering their development. The fate of Korea showed that engagements to respect the independence of a weak state are not considered to be binding when that state shows that it is hopeless to expect it to reform and to prove itself worthy to retain its independence. The Korean people brought loss of independence upon themselves because they showed themselves unfit to enjoy national rights. The Kingdom of Siam, on the other hand, has retained its independence because it reformed its administration and showed genuine anxiety to develop the spirit and the institutions which make a nation worthy to retain sovereign rights.

Has China shown herself worthy to retain her independence? The question can best be answered by reviewing what she has done, or left undone since the anti-Manchu revolution. Her financial condition has grown steadily worse. Indebtedness to foreign nations has increased, while the revenue, except from departments under foreign supervision, has shown no improvement. This applies to methods of collection as well as results. Likin stations have been created which have acted as direct checks to trade, and the promise given by China in 1902 to abolish the likin system has been dishonoured. Corruption, according to reports from Chinese sources, permeates the whole administrative system. The currency of the country remains in as great a state of chaos as in 1902, when China promised that it would be reformed. The army and navy are incapable of national defence and are simply useless drains upon the country's resources. The national banks have repudiated their liabilities. Relationship between the central and provincial governments, upon the clear definition of which depends financial and political stability, remains undetermined, and the central government exercises no real control outside the capital. Instead of reform of jurisdiction bringing nearer the day when extra-territoriality can be abolished, there has been a considerable extension of the sphere in which extra-territoriality prevails. Foreign advisers who could afford signal assistance were their knowledge and experience requisitioned are seldom consulted, and when their advice is sought it is pigeon-holed. Relations with foreign Powers, more especially those from whom China has most to hope—and to fear—, have not improved, and the expedient of procrastination has continued to be China's favoured diplomatic weapon.

The establishment of the Republic was acclaimed in the belief that the young, foreign-educated Chinese would import virility and modernism into the government. There is no visible sign that they have done this. On the contrary the Parliament has been a bitter disappointment, and Young China in executive positions has proved an abject failure. For a man to fill the post of Premier and that of Minister of Foreign Affairs the ranks of the young foreign-educated Chinese were searched in vain, and it is now suggested that Mr. Hsu Shih-chang, a conservative of the old school, should become Premier, while Dr. Wu Ting-fang, another veteran, has accepted the post of Minister of Foreign Affairs. At this crisis in China's affairs when sane and intelligent leadership alone can save her from the fate of the inefficient individual or nation, no competent leaders are visible. The policy of drift is the only policy that receives universal endorsement from China's public men. What is known as public spirit seems to be entirely lacking among the Chinese politicians of to-day. Well may the Chinese read and meditate upon what Mr. Lecky says in "The Political Value of History," referring to the prosperity of nations, and the causes thereof as indicated by history:

**"Its foundation is laid in pure domestic life, in commercial integrity, in a high standard of moral worth and of public spirit, in simple habits, in courage, uprightness, and a certain soundness and moderation of judgment which springs quite as much from character as from intellect. If you would form a wise judgment of the future of a nation, observe carefully whether these qualities are increasing or decaying. Observe especially what qualities count for most in public life. Is character becoming of greater or less importance? Are the men who obtain the highest posts in the nation, men of whom in private life and irrespective of party competent judges speak with genuine respect? Are they of sincere convictions, consistent lives, indisputable integrity?.......It is by observing this moral current that you can best cast the horoscope of a nation."**

If this be true; if by observing this moral current the horoscope of a nation can be cast, what does the future hold for China? With sorrow it must be admitted that the horoscope would be unfavourable. Unless there be a moral transformation among China's public men, and a realization that patriotism does not consist in beating the big drum and living on the country, but living for it, the days of China's independence are numbered. China is being given her chance. It is still within her power to make herself worthy to remain a nation, but the patience of the world is not infinite. When the organized Powers have time to investigate what use China has been making of the opportunity voluntarily afforded her to show herself worthy to retain her independence, they will, unless at the eleventh hour public spirit is developed in the country, in all probability decide that a China led along the path of progress is better than a China who refuses to tread that path of her own free will.

F. L. P.

## RUSSIA SEES RESOURCES SLIPPING AWAY

The "*Novoe Vremya*" fears that Russia will find herself robbed of her great natural resources at the end of the war and warns the nation that the commerce of the empire is fast falling into the hands of the aggressive Japanese. In a long article the paper says:

"The war has brought millions and even billions of roubles in the pockets of our manufacturers and speculators. A great part of this wealth came from our allies, but the flood of gold which went only to a limited number of our people turns out to be anything but a blessing. The capitalists of our allies, who furnished our loans, are grabbing our 'dormant wealth' and we discover that we have mortgaged and sold our economic future. Already our gold, silver and platinum mines in the Ural and the Altai mountains are in the hands of English, French and American companies. We have given away untold wealth for nothing, because the financiers of our allies refused to lend us the money needed for the conduct of the war, unless we granted them the concessions they demanded.

"Siberia is flooded with Japanese products of all kinds. Our eastern ally has practically monopolized the textile trade throughout our Asiatic possessions and is fast also monopolizing other trades. Almost all of the shoes sold in Siberia to-day are made by Japanese manufacturers in China. Japanese commercial travelers have even penetrated the Caucasus and European Russia, and they are followed by the Americans. Our manufacturers in the southern provinces already are pressed hard by American competition."

At that the Russian Government is openly welcoming foreign capital, for even though the foreigner does get the lion's share of the profit from developing natural resources, the tax-collector gets most of the remainder. Without money to open the mines, till the fields and cut the forests the tax would

be on latent rather than active wealth and in the case of the mines and forests, not even a tithe of what the developed property will pay. When billions are needed as in the case of Russia's resources, the few million roubles worth of resources that are passing into the hands of foreigners will serve to create object lessons from which the owners of the soil and its latent wealth can scarcely fail to profit. Granting that Russia has half the potential wealth now credited to her, there will be no dearth of opportunities for the native even if the pessimistic statement of the *Novoe Vremya* is taken at its full face value.

## THE RUSSIAN EMBARGO OF VLADIVOSTOK

Commercial circles throughout the Far East, especially in China and Japan, have been profoundly stirred during the last few weeks at news of an impending embargo by the Russian Government of the port of Vladivostok. Some ripples of this impending disaster have reached to the United States, but the main effect will be felt in the Orient unless something happens to nullify the ukase of the Czar's government. Following so closely upon the heels of the decree forbidding the importation of luxuries, which was promulgated to go into effect in December, the new order amounts to a prohibition of all imports except those solely for the use of the Russian Government which are almost entirely munitions and supplies for war.

The reasons for this drastic step are not far to seek. Vladivostok has been practically the only Russian port access to which has not been menaced by enemy warships. While this back door to Russia may not have been, as some assert, the salvation of the Czar's armies, yet it has played a most important part in keeping the armed millions in the field supplied with cartridges and shells, and perhaps the munitions thus transported across Siberia may have saved the day for the Russian armies on many a hard fought field.

But now the port is congested with cargo—mountains of munitions and provisions, stores of all descriptions and even aeroplanes and armoured motor cars are lying in the streets of Vladivostok waiting an opportunity to be shipped to the front. One entire district of the city is given over to the storage of war munitions and those who have access say that the boxes of machine guns, rifles and even field artillery grows greater instead of smaller. Not that the Russian authorities are not trying to move the mountains of goods that are growing up around them. Not a day passes that ten to fifteen trains of 40 Russian cars do not pull out on their way across Siberia. Each of the cars holds 1,000 pouds or 36,000 pounds so that ten trains of usual length would remove more than 7,000 short tons a day. Yet this large tonnage fails to make any marked reduction of the huge heaps of materials within the confines of Vladivostok.

At the start of the war and before any of the nations engaged had measured the vastness of every operation connected with it, Russia was short of railway goods cars. Immediately this need was perceived large orders were placed in the United States and while estimates vary, some well informed men state that more than 30,000 American cars each twice as large as the Russian unit have been constructed and sent whirling away westward—and, as one businessman put it, never to return. And that leads to the crux and deep seated cause of this enormous congestion of supplies so necessary to Russia's success in the war.

Russians and foreigners who were conversant with the causes which contributed to Russia's defeat at the hands of Japan in 1905 are unanimous that had Russia been as well prepared to meet the onslaught as the books of the War and Navy Departments indicated the conflict in its early stages at least might have turned in Russia's favor. The charge of graft in high places was freely made and in many cases substantiated. It was supposed that the one lesson had been sufficient and that ample measures had been taken to guard against such perversions of public funds in future. But those conversant with conditions at Vladivostok say otherwise.

Not only the merchant, but the traveler returning from Russia's eastern gate, bear witness to the impossibility of doing straight business in that city. Open boasts are made in the cafes as to the ability of this or that official to move private goods over the railway provided a sufficient sum is paid. Two thousand roubles a car seems to be about the price for which munitions shipments will be delayed and merchant goods sent forward in their place. At least, the car will be started for that price, but whether it ever reaches its destination is another matter, for the itching palm is not confined to Vladivostok. Innumerable tales are told of shipments that went forth only to find an obscure grave or at least a long detention on some far away siding where the car had been shunted simply because there was no money in handling it further, that is, no money for the railway officials along the line.

Some Russian merchants say they have made it a practice to send a representative along with their goods to travel in the car with them and report at once any delay in the journey. One of these escorts recently returned to Vladivostok with quite an interesting story of how he had been aroused at a way station whose siding was almost filled with cars, by the pounding of a wheel tester's hammer on the door. He was told that the car was defective—had a flat wheel—and that it was to be cut out of the train. He asked if it could not be repaired enough to go on, and was assured that such necessary repairs were costly and that he must stand this cost or be sidetracked. He stood it. Also a few hundred miles further along, he stood it again, but fortunately was able to arrive at his destination even though his pocket book was as truly flat as the wheel had seemed in the imagination of the railwaymen. Others, not so fortunate, have returned to report that sand had been put into the journal boxes of the car and developed hot-boxes before many miles had followed his refusal or inability to pay for the "repairs."

Perhaps this situation is overdrawn and enlarged upon by the men who are doing business in Vladivostok, but the certainty remains that out of hundreds of cars that leave for the West, only a few come back. Whether they are all strung out on the sidings from "lack of repairs," or whether greater urgency arises at the end of the westward journey is a question that the merchants of Vladivostok are unable to answer, but the rapid growth of the area piled high with their goods is the result they assert of car shortage due to mismanagement or worse on the part of railway officials. These merchants are for the most part Russians, men of patriotic hopes for their country, and their feelings of despair over the failure to get proper forwarding facilities is deepened by the knowledge that every item in that huge accumulation of cargo is vitally necessary for either the success or well being of their brothers in arms at the front.

Meantime life in Vladivostok runs merrily on. The lack of hotels worthy the name is compensated by the *cafes chantants* whose tables are crowded from darkness until daylight, and what use is a place to sleep where no one wants to sleep. These cafes fit in well with the scheme of things as it runs in Vladivostok, for prices there have almost reached the records set by boom mining camps, with cigars at two roubles each, cognac--with the label removed—at 40 roubles a bottle, while champagne flows like water at 50 roubles a quart. The roubles flow almost as fast as the wine, for a small dinner, say to eight people, will cost from 400 to 600 roubles, and the waiter's check is never itemized. They are easy spenders in Vladivostok, and take little thought for the morrow. Meantime, the merchants of China and Japan who have millions tied up in forward contracts for goods ordered or being manufactured for the Vladivostok market, are taking stock of their resources and endeavoring to discount the probable effect of the coming embargo upon their business. They have prepared as best they could for the stoppage of shipments of luxuries, but when necessities are also to be denied entrance unless they are direct orders for the Russian Government, the merchants see only a dark outlook. As for the nightmoths of the Vladivostok cafes, the gentlemen whose smallest change is a 500 rouble note, they may find little *pâte de foie gras* in the golden goose killed by the embargo which their own high finance is believed to have brought about.

## NEW BOND ISSUE OF THE PHILIPPINES

Four million dollars gold in Philippine bonds were bought by the National City Company from the War Department, payment being made on October 10, at 100 7/8 with interest to start from December 1, which is equivalent to a bid of 101.32. That these bonds brought such a satisfactory price is due to the 4 per cent interest that they carry, the term being for ten to thirty years, optional. These bonds are for the express purpose of purchasing the control of the Manila Railroad which has a practical monopoly of rail transportation on the Island of Luzon and which will now be operated by the Philippine Government.

The bonds attracted considerable attention in New York financial circles, not because of the size of the issue, but because of the rarity of such borrowings by the Government and as they are exempt from all taxes and will be acceptable to the government for deposit as collateral against both Government and Postal Savings deposits, it was expected that they would bring at least par. The price at which they were awarded to the National City Company, therefore, caused little surprise. It was stated in New York that the bonds would be used to take up the stock of the Manila Railroad whose bonded indebtedness previously has been guaranteed by the United S.ates Government, so far as the Manila Railroad South Lines bonds, due in 1937 and bearing 4 per cent interest, are concerned.

At the time when this purchase of the railroad by the Philippine Government was first agitated, a storm of protest arose from those who argued that it was unjust to saddle the infant Philippine Republic, which then seemed to be assured, with the conduct of a railroad which had failed to meet its interest charges even when operated by skilled railwaymen. But those who were interested in the purchase of the road were able to secure, through congressional action as a part of the Jones Bill, permission for the Insular Government to increase its bonded indebtedness in sufficient amount to enable the stock of the road to be taken over.

Whether the experiment of Government ownership of these railway lines will succeed or not remains to be seen. Those who have studied conditions in the Philippines say that eventually the lines, especially the southern ones, will yield big returns since they open up large areas of virgin country whose soil is the peer of that in any other tropical country. This opinion is borne out by the actual increase in freight traffic that has come to the nearer of the Southern lines to Manila, for the line had scarcely been opened than the entire interior transportation routes of the copra (dried coconut) industry shifted to the railroad whose route runs through groves of these palms for some two score miles, with hardly a break in the rampart of brown trunks and green fronds. Now that the lines have been pushed through to the Pacific Ocean and a new port has been created at Hondagua, communication between the East coast of Luzon and Manila has been shortened by several hundred mile and much of the traffic once borne by occasional steamers will have regular daily outlet to the chief export market of the Islands.

From the standpoint of location and latent opportunities, the railroad is in a strong position and those whose interests are largely bound up in the progress of the Islands wait only to learn the personnel of the new management before congratulating the Filipino people on their foresight in acquiring these railway lines which, if properly administered, should be a constantly increasing source of revenue to the Government. To buy them now, before this future prosperity has enhanced their value, is deemed a wise move and one that in days to come will redound great credit upon those whose action in forcing this purchase has subjected them to considerable criticism. The railroad will be the largest entity to be operated by the Philippine Government, but is not so radical a step as it might seem, if the operation of the Bureau of Public Works is considered in the light of a government owned construction company.

## CHINA'S ELECTRICAL DEVELOPMENT

China as a field for the sale of electric apparatus and supplies has come into prominence in the last three months and so great has been the demand of American Manufacturers upon the Department of Commerce for information that an investigation has been ordered and a special agent has now been appointed to go thoroughly over the field with a view to casting a little light on this previously rather neglected outlet for electrical goods. The formation of two large groups to take up the sale of this class of manufactures lends weight to the assertion that the United States makers plan to enter the field in force and seriously endeavor to promote the sale of their products in an intensive way by going out after the business instead of, as in the past, being content taking what has come to them as the result of published calls for tenders.

Co-incident with this announcement has come one from Japan that electrical manufacturers there were planning to invade the China market and that not only private financial assistance was now forthcoming, but that there was also a probability that Government aid in the form of a subsidy also would be given them. No nation knows the Chinese field better than Japan, for her special investigators have been traveling up and down the country for years getting information, and it is said that the data thus gathered shows such enormous possibilities for profit that the government subsidy will be used only as ammunition for the opening guns of the campaign, since the business, one started will be able to take care of itself.

So far as the American end is concerned, announcement was made in September that two substantial American firms were in the field for this business. One of these is the Gaston Williams and Wigmore Electrical Engineering Corporation, a subsidiary to the import and export firm. It is working in conjunction with the Westinghouse interests for which it holds the sole agencies for China. The other is described as a combination of American banking, industrial and construction interests designed to undertake the electrical development of the treaty ports and principal cities of the interior. Construction of electric power and lighting plants and of railway systems are the main items in the program of this combine which will work, it was announced, in conjunction with Andersen, Meyer and Company, Ltd., who are agents for the General Electric Company.

The agent selected by the Department of Commerce is R. A. Lundquist, a consulting engineer of Minneapolis. His field will cover not only China but Malaysia, Australasia and South Africa. The following announcement of his appointment recently was sent out from Washington:

> Working on the basis that the war in Europe has greatly handicapped their principal competitors. American manufacturers are making a serious effort to take advantage of the situation and get permanent possession of these markets. A great deal of preliminary study still is needed, and Special Agent Lundquist's part in the campaign will be to ascertain the types, qualities and costs of electrical apparatus with which American goods come into competition, as well as to look into the general opportunities for the sale of such goods. Before leaving on the trip the special agent will spend some weeks in the principal business and manufacturing centers, conferring with manufacturers, exporters and business houses on the scope of the investigation.
>
> Mr. Lundquist graduated from the University of Minnesota in 1905 with the degree of electrical engineer, following which he put in six years with prominent electrical houses. Since 1911 he has been in business for himself in Minneapolis, specializing in hydro-electric and transmission-line work. He is the author of "Transmission Line Construction--Methods and Costs," and has contributed numerous articles to the technical press. He is chairman of the Minnesota section of the American Institute of Electrical Engineers.

But the world is full of pessimists and of them China has its share so that there is no lack of those who read of these proposed developments only to say that America again has shown more hindsight than foresight and instead of starting this movement ten years ago when the field was open and competition less keen, she has waited until now when the Japanese have completed their preliminary work and know to a certainty exactly what the China market wants in electrical lines and exactly how much it is likely to absorb. They have lists of cities covering the eighteen provinces and against each city's name is given the

opportunities: this one needs electric light, these two need a light railway while some other four or five can be supplied with both light and power from a central plant located in their vicinity. Japan has been struggling for years to make herself efficient in the manufacture of electrical goods and the latest refinements of lighting and power machinery now are produced in the Japanese works almost as soon as they are announced in other countries.

That the Japanese are operating under foreign patents and in some cases with foreign capital will not deter them in the slightest from keeping the foreign manufacturer whose assistance they have enjoyed from entering the market in competition with them. In price at least there can be little successful competition with Japan in many electrical lines. Coupled to her cheap labor, Japan has immense stores of copper and her manufacturers are able to cut under the foreigner in every item into which either of these two items enters largely. In fact, dealers who are familiar with the market say that the Japanese can and do shade the price on everything connected with electrical undertakings with the sole exception of half-watt lamps in which they are from 10 to 100 per cent higher than the foreign equivalent. In supplies whose base is copper, such as wire and cable, there is no possibility of successful competition in the open market, in fact recent sales of other than Japanese cable have been due either to a prejudice against Japanese goods or that no bids were called for.

Perhaps the pessimists are overly depressed as to the opportunity for Mr. Lundquist to do effective work in behalf of the American electrical manufacturers, but it is held as an axiom in the China trade that it will take the new comer in the field at least as long to overcome the lead of his competitor as it took the latter to get that lead. This is when competition is between those facing equal conditions of manufacture, but the case is quite otherwise when Japan is concerned for there the conditions are quite unequal. So that the pioneer work of the newcomers into the field is likely to be long and arduous, says the pessimist. There are those however who take quite another view and raise other factors in the problem. They point to the comparative newness of Japan's electrical plants and the seeming inability of Japanese in other lines to deliver goods according to specifications. Many instances are cited in which Japanese wares, although cheaper in actual first cost than those of their competitors are in the end worthless and almost a total loss to the purchaser. Keeping this in mind, say the optimists, it will be seen that any initial success on the part of the Japanese in flooding China with electric plants and goods of her own manufacture, even those that are produced under foreign supervision, will be but temporary and that in many cases the first sales may act as a bar to future ones, as they certainly will if the machinery is not suited for, or does not do the work.

There may be some truth in the statements of those taking both of these extreme views, but a middle ground doubtless will be found, so that the outcome will be a division of the field with each taking a fair share of the contracts. American machinery is highly esteemed in China and in the larger items, the bids received by the Shanghai Municipality have shown that American manufacturers can meet foreign competition. Japan has not yet reached a point where her makers of electrical machinery can compete, but those who have seen the rapidity of her advance in efficient manufacturing, say it is only a question of time before she will be in the field with everything from the smallest lamp to the largest generator.

So far as the field is concerned, Mr. Lundquist has ample opportunity for investigation, and while it would have been better had the investigation been made a decade ago, the field is still here and a late start is better than none at all. The companies now in the China field are active on their own behalf and the work of a special investigator especially if he is able to point out the way for large future developments, not confining his report to a resumé of what is already known, should be of great benefit in extending the sale of power, light and electric traction apparatus. One point in his favor is that he is a practical electrician and a businessman as well, instead of having to pick up the rudiments of his subject in the field he is investigating, as has been the case with several of the investigators sent out in the last few years. To be sure, Mr. Lundquist also is an author, but his books are along practical rather than theoretical lines, so that no one should hold them up against him.

## SOME TARIFF TINTINABULATIONS

Several American editors whose pens are supposed to direct the opinion of more or less important industrial populations, have fallen into a curious error over China's exports of tin to the United States. Some of the editors are from great rolling mill districts where tin such as China exports is not unknown, so that their diatribes would indicate that they were most unobservant or that they suppose the only form of tin in existence is that which comes on the outside of "canned goods." Like small boys beating on the bottoms of the family milk pan, the editors are trying to make great clamor without any more present reason than the aforesaid boy. They bang away at the tariff with all possible editorial dissonances and imagine they are making a noise such as might proceed from the tin, not knowing that the tin which China sends to the United States does not tintinabulate when struck, but is only a little more sonorous than a pig of lead. Here is a sample of one editor's fulminations in which he mixes up the tariff and the Chinese exclusion act in the following fashion:

"The American tin industry was built up with much difficulty even with the aid of a protective duty of $1.20 per hundred. The Democratic administration wanted more tin imported and less made in America, so the duty was reduced to about 47 cents per hundred pounds. Formerly, we bought our tin in Wales. We are still buying much of it there, and making some ourselves, but, unless the Democratic tariff policy shall be reversed at the polls in November, we shall eventually buy our tin in China, to which country we shall send our money for the employment of Chinese labor which we won't permit to be admitted to this country."

Another assumes that because China has all the factors for the manufacture of tin plate that it is now actively competing with the American laborer whose wage scale is being undermined by the low tariff on Chinese tin. His peroration is along the following lines:

"China has every article needed in the production of tin plate; the ore as material for making the sheets, the tin for coating them, the coal for fuel, and the cheapest labor on the face of the earth to perform all the operations necessary to production. America has the ore and coal, but must import the tin, and its workmen are not willing, even for the sake of bolstering up a false Democratic Tariff doctrine to reduce themselves to the Chinese standard of wages and living.

"President Wilson, and perhaps other Democrats as well, would doubtless oppose a proposition to admit Chinese labor into this country, but they have not opposed the admission of the products of Chinese labor. In so far as the American workman is concerned there is no practical difference. Instead of having an imaginary peril in the land of the coolie, we now have the Real Yellow Peril in the land of the American workman, thanks to the beneficent operation of that Birth of New Freedom which approximates so nearly to being a Birth of Free Trade."

What are the facts? Surely an editor in Connellsville, Pa., who cannot travel many miles without passing a tin plate factory, must have access to some authority that would set him right. He would discover that while China is the second or third of metallic tin exporters, she is also one of the fairly large buyers of tin plate, and that were it not for China's tin, some of the workmen in the editor's own bailiwick might have to cancel their subscriptions through lack of work. In 1915, China exported more than nine million taels worth of tin in slabs, while she brought in some three millions in tin plate, half of which came from Canada and practically all the remainder from Great Britain and Hongkong. So long as the United States is dependent upon foreign countries for the tin with which to coat the tin plates the plate manufacturer should be content with the 15 per cent ad valorem duty on the finished product and be thankful that tin is on the free list even if it does come from China and pay wages to some few hundred Chinese smeltermen. The Republican editor who advocates higher duty on tin plate had better consider that the "full dinner pail" is made of tin and woe betide him who would lessen the fullness thereof.

# AMERICAN EXPORTERS' APPEAL

*To the Editor of The Far Eastern Review.*

*Sir—I beg to submit the following copy of correspondence with Secretary of State Lansing with reference to the new Chino-Japanese situation, urging that vigorous steps be taken to safeguard the American interests involved.*

*The American Manufacturers' Export Association, in whose behalf the secretary of state is addressed, is composed of over 500 leading manufacturing exporters of the United States, whose combined investment of capital exceeds $8,500,000,000.*

*E. W. DUKE,*
*Acting Secretary.*

*New York, Sept. 21.*

**Text of the Letter**

Hon. Robert Lansing, Secretary of State, Washington, D. C.:

Sir—I have the honor to recall to your attention certain correspondence of last May between this association and the Department of State relating to matters adversely affecting American commercial interests in China.

Writing on May 15, 1916, the chairman of the committee on foreign relations of this association pointed out that it had been learned by the members of this association that present indications pointed to the fact that Japan, taking advantage of the occupation of other world powers with their own affairs, was about to take strong measures in carrying out her designs with respect to China in a manner which seriously threatened the interests of American trade and promised to nullify the "open door" policy to which Japan, in common with other powers, was committed.

The Department of State writing under date of May 17, informed this association that according to graphic advices it was informed that both the American ambassador and the British ambassador in Japan were satisfied that Japan would not press the demands enumerated in "group 5" without a conference with Great Britain.

These were the demands which this association had in mind when it stated that in its opinion they were aimed at the complete control of Chinese sovereignty.

The reports appearing in the press in the last few days, including the publication of part of the diplomatic correspondence, seemingly confirm the fears of this association, expressed in the above communications, that Japan was about to initiate new strong measures with respect to her designs upon China, these taking the form of demands for apologies, indemnities and rights in south Manchuria and eastern Mongolia, by way of reparation for an alleged attack of Chinese troops at Chang Chiatun, and especially a demand for an extension of Japan's extraterritorial rights so as to permit the stationing of Japanese policemen in towns where there are large Japanese settlements.

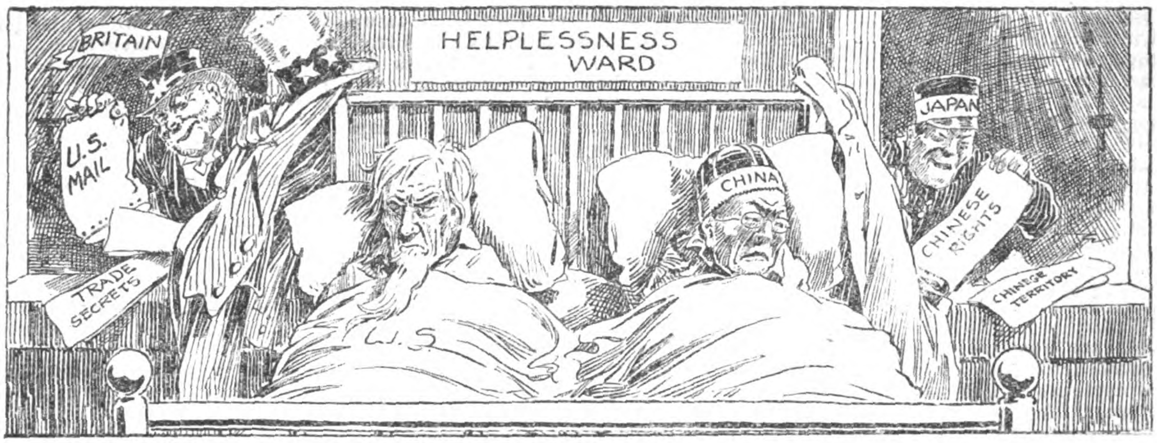
The demands, while not fully disclosed by the newspaper reports, are sufficiently appreciated by this association to warrant its belief that they may have as their object the extension to other parts of China of especial interest for Japan, and result in the exclusion of American prestige, and the handicap to the extension of legitimate American commercial interests in the former country.

The United States has always stood foremost as the ready protector of Chinese sovereignty. In its wisdom, this government in March, 1913, upon the ground of the impairment of Chinese sovereignty, withdrew its support from American bankers then negotiating, in conjunction with other powers, a loan to China. The present situation, threatening the right of China to independent action, justifies in our opinion, measures at least equally as effective as those referred to above.

The history of the Japanese activities in Manchuria is the history of the almost complete loss of American trade, not a little of which was formerly enjoyed by the members of this association. Should the present demands be granted by China, what little business is now done by Americans with the Chinese will be cut off or reduced still further.

The government of the United States, acting through its Department of Commerce, has inspired the American people with visions of the possibilities of the Chinese market for the products of American workmen and American factories. The increasing attention given to the advantages of trade with the Far East has been noted by our legislators as well as by our business men. The very vital interests of the members of the American Manufacturer's Export Association, in common with the broader interests of the country, are at stake in the present crisis. Therefore, this association respectfully urges upon the government of the United States that it take such action in the premises as seems proper to meet the conditions arising from the fresh demands of Japan upon China. Very respectfully,

ALBA B. JOHNSON,
President American Manufacturers' Export Association.




*(Chicago News)*

"MISERY ACQUAINTS A MAN WITH STRANGE BEDFELLOWS"

# AMERICAN PRESS COMMENTS ON THE OPEN DOOR

**Springfield Republican**:—Japan's Attitude toward China gives ground for anxiety, but it must not be forgotten that this is a world problem, in which other nations are quite as keenly interested as the United States.

**Charleston (S. C.) News and Courier**:—Europe is locked in its great struggle. America has been sleeping all this time but is now waking up and is preparing to build a navy which Japan could not match. Once this navy is built there will be a very practical reason why Japan must mind her p's and q's. Obviously the present is the "psychological moment."

**Atlanta Constitution**:—It has been suggested that Japan seeks to set up in the Far East a Monroe doctrine of her own. There can be no material objection to this so long as present established rights in the Orient are not interfered with. It may be taken for granted that we shall not only protest against the trampling upon these rights, but insist upon their complete and literal preservation.

**Washington Post**:—Formerly it was of great concern to the United States that the open door should be maintained. Lately the only open door to China seems to have been monopolized by Japan. If China persists in offending her neighbor the only remedy left will be to raise the Japanese flag over the Chinese Empire.

**Detroit Free Press**:—The deeper the Nipponese become involved in China the less interest they will have in affairs on this side of the Atlantic, the less they will covet Hawaii, the less they will care about the naval base on the Mexican coast or about concessions in the Republic of Panama or along the South American west shore. The more they are interested in Mongolia, too, the less they will think about the Philippine Islands.

**Troy Record**:—The drastic demands made upon China by the Japanese government can have but one meaning. Japan is determined to secure control of Inner Mongolia and South Manchuria. What action the United States will take in the matter is uncertain.

**Albany Journal**:—Anxiety is caused in Washington by the demand for recognition of 'special interests.' This it is feared may cut directly across the American policy of the integrity of China. Japan has adapted itself to the demand for the open door, but it desires that the door shall swing toward Japan.

**Atchison (Kan.) Globe**:—When this war is over, other powers, which have interests in the Far East and aren't afraid of Japan, may take a hand in the dispute and loosen the strangle hold the Japanese are trying to fasten on their large and helpless neighbor. Even the protests of the United States might have some influence in the shining orient, but just at present the outstanding fact is that China is helpless against the encroachments of her grasping neighbor.

**Chicago Journal**:—Nippon is trying to fill her purse and sharpen her sword at China's expense. Japan's knowledge of commerce and finance is a lesson of yesterday. Her understanding and use of the military art is centuries old and ingrained in her population. Her commercial advantages in China might be annoying to others and profitable to herself, and yet be neutralized by western enterprise and Chinese cleverness. But let Nippon once drill and officer even a fraction of China's millions of potential soldiers and Tokyo will be able to speak in tones that even the strongest white power must hear.

**Philadelphia Press**:—For the second time in the recent history of diplomatic affairs between China and Japan it happens that the actual demands of the Japanese are greatly in excess of those published for foreign consumption.

These demands are drastic enough to remind one of Austria's demands on Serbia that precipitated the present war. And remembering the fact that Japanese troops were on Chinese soil when the trouble started, the conclusion is inevitable that these demands are less justified.

**New York City Trade Record**:—Renewed demands on the Chinese government bear out the opinion expressed the world over many months ago that Japan contemplates acquiring full sovereignty in China.

**Philadelphia Inquirer**:—These arrogant and insolent claims were not insisted upon at the time, but it was very well understood that they would be renewed at the first favorable opportunity and their renewal as regards the extensive region known as Inner Mongolia is what we are now witnessing. Japan and Russia have it fixed up between them that they are to be the paramount powers in all the Far East and there are no indications that in the achievement of this purpose they are to encounter any effective opposition.

**Buffalo (N. Y.) News**:—China, the ancient home of advanced civilization, is being slowly but surely entangled by Japan.

If ever a country needed a friend, it is China, at this time.

China has neither army, navy nor government worthy of the name. She has vast resources, but no capital to promote them. She is on the verge of bankruptcy and ruin.

She is doomed for want of a friend. And the din of the European conflict drowns her feeble cry for help. To quote Mr. Wilson: "God help her—we can't."

**Urbana (Ohio) Citizen**:—That open door for which the late John Hay fought so determinedly must remain open. While every surface assurance appears to have been given by Japan that this principle is to be adhered to, there is neither reason nor expediency in going to sleep over it. There is nothing crude about Japanese statecraft.

**Milwaukee (Wisconsin) Eve**: — The Japanese Minister of Foreign Affairs tells an Associated Press correspondent that the new treaty with Russia affects in no way American interests; that the integrity of China and the open door are not in danger. The disclaimer is interesting. We do not imagine it will blind the eyes of the Washington administration. Japan, despite her disclaimer, is well advanced on her course toward establishing a "Monroe Doctrine for the Orient." The outlook is not at all reassuring for those American interests which have been aiming at an extension of our trade with the Far East.

**Schenectady (N.Y.) Gazette**:—The people of the United States and those of other interested nations may be excused if they do not take this assurance entirely at its face value. Deeds, not words, will reassure them as to the plans of Japan in regard to China. And the deeds thus far have not been altogether reassuring.

**New London (Conn.) Day**:—As a matter of fact Japan has already closed the open door to a great deal of Chinese territory, has already destroyed the integrity of that unfortunate country. And she will go on doing so—lying about her intentions and breaking pledges as she makes them—until she has Nipponized China altogether and taken with much ruinous effect, the place of the Manchus who exploited the Chinese nation for hundreds of years.

Nobody is going to stop her, the United States least of all. The sooner we give over pretending to be concerned about the open door in China or in keeping China a country at all, the better for our reputation for honesty. So far as China's well being—or our own plain interests in that part of the world, for that matter—is concerned, we haven't the sand or the enterprise to do anything, now or until it is too late.

**Oakland Tribune**:—American business interests may confidently conclude that there will be no longer a commercial open-door in China unless the national administration bestirs itself and does something for the preservation of equal opportunity in the Chinese field.

**Atchison (Kan.) Globe**:—And it may or may not be America's place to interfere in the controversy, that being something for the diplomats to determine, but it certainly is America's business to see that this nation never finds itself so helpless against the aggression of a nation which might seek to exploit us.

**St. Joseph (Mo.) Gazette**:—There is more of menace to the United States in the present attitude of Japan toward China than has been contained in any past relations of those two countries with this government. There is every reason to suppose that Japan has been endeavoring to deceive America as to the terms it would seek to make with China. Certainly no suggestion of the real severity of those conditions has been offered Washington by the Japanese government. Now that the truth is known, it is a question of great moment whether the Japanese-Chinese treaty can be adopted without America becoming turbulently involved in the matter.

**Lansing (Mich.) State Journal**:—China may some day, however, become vastly more important in a commercial sense. And against that time of industrial development and accumulation of wealth in the Celestial Empire, it is well for us to insist firmly on the "open door" policy inaugurated by American diplomacy.

**Boston Herald**:—With the preservation of the "open door" in China we have more concern than any other nation. It must be the keystone of any policy which aims at the development of our trans-Pacific trade. Yet a few more strokes such as Japan has been making during the last two years would close it effectually.

**Oakland Enquirer**:—Japan is riveting the bracelets upon China, rivet by rivet. Disguise these demands as much as may be, the plain import of this procedure is conquest, without bloodshed, but conquest just the same. If they be conceded, the Japanese assurance to us that the territorial integrity of China would be respected would be broken; the open door policy for which we have contended, would be violated, and United States interests in the Far East be more deeply involved than by any event since Japan's famous ultimatum to China, of May, 1915.

**Nashville (Tenn.) Banner**:—The case of China, like that of Persia, is intimately connected with the great war and the political combinations rising out of it, and needs to be treated with the utmost skill and care. The United States cannot settle it alone, but it may be able, as in the past to use its good offices in China's behalf while the armed leagues are battling for the mastery of the world.

**Baltimore American**:—The disclaimer of ulterior purpose the Mikado's government of ulterior purpose will be accepted by the United States, which has only a broad interest in the situation at best.

The door of China is open to us probably in the sense implied in the declaration of Hay, but in no other sense.

We are free to compete with Japan as well as with England and Russia for Chinese trade, but by no stretch of the imagination is there an open door in the sense that we have anything like an equal opportunity in the contest for this trade. Further than that it is unlikely that diplomacy can help us much.

**Charleston Eve. Post**:—The truth is that the "open door" in China, of which so much has been made in this country and upon which the fame of the late Secretary of State John Hay has chiefly rested, has been almost from the beginning of its formulation as a policy of the Far East, and certainly since the treaty of Portsmouth, more of a legend than a working principle, as actual experience has abundantly shown.

**Bay City (Mich.) Tribune**:—For the time being the United States will accept the information at one hundred cents on the dollar, but nevertheless will keep its eye open on further movements of the Japanese in Chinese territory.

**Philadelphia Inquirer**:—Europe just now has troubles of its own, and what has Japan to fear from the kind of administration that is watching and wobbling and rattling around down at Washington? So China is in process of absorption and with it will go the Chinese market and the little that Japanese chicanery has left of United States trade. But if we had a man in the White House instead of a mouse things would never have come to their present pass.

**Nashville (Tenn.) Banner**:—The Japanese are a very wideawake people and don't miss any opportunities to advance their national interest. Nor are they at all scrupulous about methods adopted to that end.

When the present war, that seeks to settle the balance of power in Europe, has ended, it is plain that other questions will have risen threatening trouble in the future between countries now in alliance.

**Leavenworth (Kan.) Post**:—And against that time of industrial development and accumulation of wealth in the Celestial Empire, it is well for us to insist firmly on the "open door" policy inaugurated by American diplomacy.

**Camden (N. J.) Courier**:—The fact is Japan has been emboldened by the bungling diplomacy with Mexico to hold the United States government in much lighter esteem than was formerly the case, just as is the case so far as known with other nations. The United States government is sadly in need of a new and efficient administration.

**Marietta (Ohio) Leader**:—This is the time for some strong declarations about our rights in the Far East.

The dark war cloud hanging over Europe must not obscure our Asiatic vision. It is a time when brainy men are needed to settle these big questions, and if the administration fails in this matter, incalculable damage will have been done the business interests of America.

**Chicago (Ill.) Eve. Post**:—Japan is quick to reassure the world, and especially America, that she has no ulterior design against the "open door" in China; but it is difficult to allay suspicion when we see the figure of the little yellow man standing with one hand on the latch of the "open door" and the other on his rifle. He is at least seeking to establish himself in a position that will make easy the banging of the door when occasion arises.

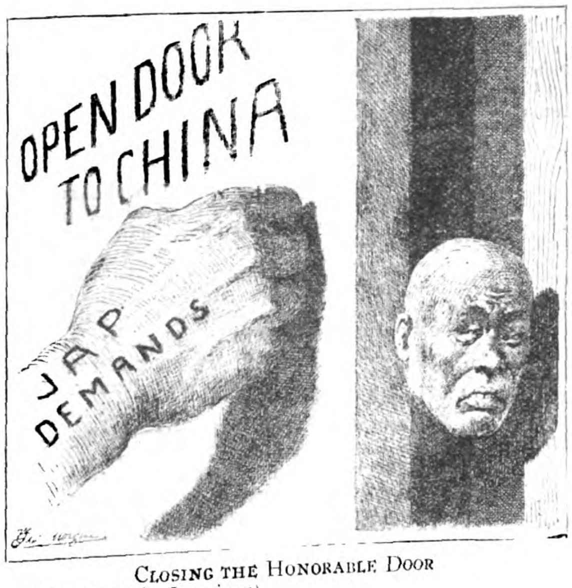
**Ansonia (Conn.) Sentinel**:—Unless we do protest, and forcibly, there will soon be a closed instead of an open door in China. The blame for this lost opportunity can be safely laid at the door of the president, who is too proud to defend an American doctrine that holds boundless possibilities for the future. Japan can do her worst in China. We have not a kick left in our state department and, if we had, we would not dare to use it where it would do the most good.

**Santa Rosa (Cal.) Republican**:—Our governmental system does not permit us to get rid of an incompetent president as easily as we could wish, but we can get rid of him, and as soon as we can we will, and we notify the nations of the earth that our change of presidents means a change in our foreign policy, and that the open door in China is one of the things that we demand.

The election of Hughes means an American nation run for the benefit of Americans, and not as it has been for the past four years for the benefit of foreigners.

**New York Journal**:—That under such circumstances, China's neighbors should watch the course of her affairs with some solicitude is natural enough, and until the United States is prepared to take an active hand in defending China against the foes of her own household no less than in averting the consequences of default of her national obligations, the less we have to say the better about "drastic legislation" for the protection of our trade in the Orient.

**Philadelphia Telegram**:—To the charge that she now seeks to violate the open door, Japan replies that she aims at no unusual advantage, inasmuch as many sections of China were long since parcelled out to various other Powers for exclusive exploitation. By this kind of reasoning the open door becomes a permissive instead of a limiting doctrine, meaning merely that what one foreign interest has done all others are at liberty to do. This, of course, puts a premium on rivalry



CLOSING THE HONORABLE DOOR
*(Philadelphia Inquirer)*

*(Asheville, N. C., Citizen)*

THE BIG SQUEEZE IN THE ORIENT
*(Tacoma Leader)*

and quarrels between the Powers for their share of spoils, limited only by the size and wealth of the helpless victim.

America's duty may shortly be to decide how deep into this unpleasant competition her interests and prestige require her to go.

**Pittsburg Leader**:—We have escaped the conflagration in Europe and have stayed our hands on the Mexican border. We are blunderingly trying to escape consequences of unjust dealings with each other at home. It would be an ironical shock if, after shutting our eyes to the international family relation, the oneness of the human race, whether skins be white, black, or brown, if we should find ourselves forced into bloodshed in the east, where Japan and China are at present the only principals.

Whether England would stand by inactive because of Japan's alliance in the European war is doubtful. Whether England would look at her interests in China as of so much less than her interests in Europe as to permit Japan to loot British control in China, may be more than doubtful.

**Pittsburg Dispatch**:—As for the United States, we are likely to hear more or less about the open door but we have not been so prone to insist upon it of late that Japan need figure of the little yellow man standing with one hand on the latch of the " Open Door " and the other on his rifle. He is at least seeking to establish himself in a position that will make easy the banging of the door when occasion arises.

**Passaic (N. J.) Herald**:—The present task is not only the one nearest at home; it is the imperative one. From an abstract viewpoint, Japan's aggressions in China are unethical; but from a practical viewpoint, Japan is moved by necessity rather than by greed; she must have some place for her people to live, grow, mutiply and become wealthy. Territorial extension with the Nipponese has somewhat the aspect of a fight for life.

**Philadelphia Inquirer**:—That is just the kind of incident that the predatory Powers have habitually utilized in the pursuit of their acquisitive designs and it was quite certain that it would furnish the occasion for some more or less drastic compensatory claims.

It need hardly be pointed out that this concession is incompatible with the maintenance of its jurisdictional rights by the Chinese Government, but that government is in no position to offer any effective resistance to Japanese arrogance and it will have to make the best settlement it can. The United they are belied only in our consciences, not in our deeds.

**Los Angeles Examiner**:—Support for our policies in the Pacific, if we have any policies and venture to proclaim and support them, may come from powers now seemingly disposed to let Japan and Russia work their will in China, possibly from other powers helpless to interpose any present objection thereto. For that we should have to wait, and too long. The Lord helps those who help themselves.

**Brooklyn Eagle**:—China seems helpless. Use of force in her behalf by the United States is not to be figured on. A mere protest from Washington will be laughed at in Tokio. Japan, despite her disclaimer, is well advanced on her course toward establishing a " Monroe Doctrine for the Orient." The outlook is not at all reassuring for those American interests which have been aiming at an extension of our trade with the Far East.

**N. Y. Mail**:—The situation in its latest aspects concerns us closely. The administration at Washington is creating a problem of increasing seriousness for its successors. Thomas F. Millard, in his notable book, "Our Eastern Question," points out the fact that a Japan intrenched in China would be more difficult to deal with ten years from now than

A Suspicious Noise from the Far East
(*Sherman in Pittsburg Sun*)

—From the Portland Telegram

SCHOOL DAYS.

Giving Him a Little Jiujitsu Stunt
(*Duluth Tribune*)

take any eleventh hour representation very seriously. And if she decides that the door shall remain closed, or nearly so, what can be done about it?

**Canton (O.) Repository**:—(Philadelphia Bulletin.) Japan has already affronted the opinion of Europe as well as that of the United States. If war was not already raging, her attitude in China would have brought it about. The Chinese situation is now shaping up to appear much as the Balkan situation appeared before the outbreak of the war when all Europe took up arms rather than permit a single nation the possession of a vital area.

**Denver, Rocky Mountain News**:—What can China do? Nothing but cry for help. That cry has reached America. It brought Secretary Lansing back from his vacation to Washington. We may reason with Japan, but is Japan likely to listen to a persuasion that has behind it no evidence of forceful spirit?

It is manifest that between demands and concessions Japan plans to gain the upper hand in the important territory delimited.

Japan is quick to reassure the world, and especially America, that she has no ulterior designs against " open door " in China; but it is difficult to allay suspicion when we see the States is interested in preserving China's territorial integrity, but that the present administration will take any effective action in the premises is inconceivable.

**Philadelphia Press**:—The only champion of helpless China left among the great Powers of the earth is the United States with its avowed policy of the Open Door. The interpretation of that policy can be rigid or elastic as the Administration chooses. It can shut its eyes to the domination of China by its pugnacious little neighbor, or it can scrupulously ascertain how far that domination leaves intact the Open Door. And in either case it can indulge in philosophical speculation on the fruits of unpreparedness in China.

**Boston Journal**:—All of which is in line with Japanese policy and no very drastic departure from Japanese habits of the past. Japan's boldness does, however, signify a new contempt for American power in the East.

Recent American history is one instance after another of "hands off." There is no reason to suppose, to-day, that the United States would officially and forcefully resent a free-for-all grab in China. Our speeches of brotherly love for Japan may be false, but she is now.

In this vast game with destiny Time is Japan's ally. Will America suffer the game to go on to its logical conclusion?

**Erie Herald**:—There can be no criticism of the state department's promptness in conveying to Japan its intimation that the American government would be " greatly disturbed " should the reports of Japan's intentions to obtain a further hold in China prove true.

Japan's speedy denial of any design to disturb the status quo in the republic must, of course, be accepted for the present. The state department, evidently, is alert and keeping in close touch with affairs in the orient, ready to protect American interests there as elsewhere should the occasion arise.

**Seattle Times**:—Diplomatic representatives of the Asiatic nation Japan are said to express their belief that our rights in China are not involved in the present Chino-Japanese controversy and hold, therefore, that their foreign office is under no more obligation to discuss the negotiations with Wilson than the United States would be to discuss the Mexican situation with Count Okuma.

In fact, it is possible that Tokyo is endeavoring to convey to this country a gentle hint that if Japan consents to keep its inquiring finger out of the Mexican pie, the United States should reciprocate by keeping its inquisitive thumb out of the Chinese pudding.

**Los Angeles Times**:—Japan's latest demands on China again threaten American interests in the Far East. But heaven be praised! we have a Lansing on the job. He will inquire into it—he has already said so. And, of course, his inquiry will be as effective as his notes to Germany, Great Britain and Mexico. Where would America be without her Wilson, her Lansing, her Col. Houses and Johnny Linds. How wonderful a weapon of defense is a Democratic inquiry.

**Olympia (Wash.) Recorder**:—Japan is great on making secret demands in addition to those given out for public consumption in its dealings with other nations. For unwonted arrogance they were considered to be about the limit.

Japan will bear watching, for that ambitious little nation apparently has designs on the Oriental world.

**Harrisburg (Pa.) Telegraph**:—Woodrow Wilson is responsible for a good many things which are regarded as of serious disadvantage to this country, but nothing that he has done, perhaps, has been more serious in its results than his failure to keep open the door of China to the nations of the world.

**Wheeling (W. Va.) News**:—That the state department is inclined to suspect the truthfulness of Japan as to the effect her demands on China will have upon the "open door" in the Far East, is shown by the instructions to our diplomatic representatives there to ascertain the exact facts of the matter. The United States has no wish to interfere in purely Far-Eastern affairs, but we have certain trade rights in China that we cannot relinquish without giving up our national self-respect. Should Japan be disposed to be disagreeable, we are quite accomplished along that same line.

**Pittsburg Sun**:—It is to be regretted, from China's viewpoint, that it has no nation at hand which for pure love of humanity and fair play will step in and tell the grasping islanders that it is time to withdraw from the continent and permit their neighbor to join unhampered in the concert of nations.

**Minneapolis (Minn.) Tribune**:—Americans who have given any thought to history in the Orient, must inevitably place against Japan's assurance of fair play for China the record of her steady encroachments in Manchuria and at Kiaochow, and her relentless absorption of Korea.

The open-door policy in China, established largely through the efforts of John Hay, evidently is scheduled to stand a new test after the European war. If the end of the present belligerency in Europe is to be followed by trade wars, secret alliances between favored nations and campaigns of reprisals, the open door policy will be maintained, if maintained at all, only because the community of interests of the nations lie in that direction. If the United States, however, comes into conflict, after the war, with an economic alliance of any set of the European nations, it may easily develop that we may find a determination on their part to abandon the open door policy. Our trade relations in the Orient may need the protection of the highest caliber ofstatesmanship in the next few years.

**Syracuse (N. Y.) Journal**:—Japan is nothing if not polite. Although it has demanded from China important privileges that wise men in Washington and elsewhere believe not only menace the "open door" policy which this government secured and maintained, but in spirit as well as in practice violate the Root-Takahira Treaty relative to such a policy, the Japanese government suavely informs this government that it is contemplating nothing that would impair the rights of China or tend to defeat the purposes of the great policy in question.

How nice it is for two great nations to conduct their relations so harmoniously that one can in broad daylight begin a big job of highway robbery and the other feel reassured over an explanation that what is taken will not make any difference in the sum total of possessions of the victim—that is, nice for Japan.

**Vicksburg (Miss.) Herald**:—It is not sure that China or America will be losers in fact by the "turn of relations" of two yellow people. But however this may be, there is no grievance here for our State Department to take too much to heart; not at least until the preparedness policy program voted by congress, is effected.

**Richmond Journal**:—Japan has given assurance to the state department that no violation of the open door policy is contemplated, but the recognition of "special rights" has a decidedly ominous outlook. The political abasement of the Chinese government, as demanded, would prove a deep humiliation to China, and is likely to be bitterly protested. Apparently, the entire affair is preliminary to making of the whole vast region involved a dependency of Japan, since article 3 of the "Demands" places Japanese soldiers and civilians beyond the control of Chinese troops, virtually annulling China's sovereignty there. In other ways Japan seems to be planning for ultimate control of that territory.

**Washington Post**:—Whenever China resents any indignities heaped upon her by Japan, the latter invariably draws up a formal complaint, seeking indemnities, apologies and political concessions somewhere in China. Formerly it was of great concern to the United States that the open door should be maintained. Lately the only open door to China seems to have been monopolized by Japan. If China persists in offending her neighbor, the only remedy left will be to raise the Japanese flag over the Chinese Empire.

**Minneapolis Evening Tribune**:—Clearly the exporting manufacturers of the United States do not take at par the recent official declaration by Japan to our Department of State that that country is not seeking to close the doors of China to American trade, thus overthrowing the policy, originated by John Hay and subscribed to by the great powers, that there should be equal opportunity for all in the Celestial Empire.

Five hundred members of the American Manufacturers' Export Association, in a letter addressed to Robert Lansing, Secretary of State, complain that Japan already has pushed the doors until they are almost closed and they pray for action that shall bring back the lost advantages.

The administration in Washington stands accused of playing into the hands of Japanese commercial interests and of helping to throttle American trade in China by withdrawing its support in 1913 from the bankers of this country who wished to join with other powers in negotiating a loan to China. The government's reason was that Chinese sovereignty thus would be impaired.

Now, according to the exporters, Japan has undermined Chinese sovereignty and will have gone further in that process, to the detriment of American trade, if China accedes to the demands made upon her by the Nipponese.

**Pittsburg Sun**:—Japan's attitude toward China gives ground for anxiety, but it must not be forgotten that this is a world problem in which other nations are quite as keenly interested as the United States. For the time being European influence is neutralized by the war, which makes it the more important for

THE TRAINED ANIMAL ACT
*(Indianapolis News)*

ANOTHER ULTIMATUM
*(Pittsburg Dispatch)*

HIS MEAT
*(Portland Oregonian)*

this country to do what it can in a friendly way in behalf of China, but it is necessary to recognize that the war has led to a tightening of the great alliances and to secret bargains of all kinds which make the work of diplomacy hard.

The United States cannot settle it alone, but it may be able, as in the past, to use its good offices in China's behalf while the armed leagues are battling for the mastery of the world.

**Salt Lake (Utah) Tribune**:—The Japanese are not deceived as to the attitude of this country, and while the Tokio statesmen are attempting to attain their ends by underhand work they know full well that the United States will not allow them to shut off the American trade in the orient, no matter what view may be taken by the European nations.

**Olean (N. Y.) Herald**:—Nippon is trying to fill her purse and sharpen her sword at China's expense.

Japan's knowledge of commerce and finance is a lesson of yesterday. Her understanding and use of the military art is centuries old and ingrained in her population. Her commercial advantages in China might be annoying to others and profitable to herself, and yet be neutralized by western enterprise and Chinese cleverness. But let Nippon once drill and officer even a fraction of China's millions of potential soldiers and Tokyo will be able to speak in tones that even the strongest white power must hear.

**Fresno (Cal.) Republican**:—The Japanese government has very courteously assured the United States government that it is not doing or planning anything at all invasive of the sovereignty or integrity of China. Of course not. It is merely insisting on Japanese officers in the Chinese army, Japanese advisers in the Chinese government, Japanese police on Chinese streets, Japanese ownership of Chinese railroads, and preferential Japanese access to Chinese industrial development. These things do not invade the sovereignty of China, and Japan is quite correct in saying so. They are intended merely to undermine the sovereignty of China so that it will break down of its own weight.

**Binghamton (N. Y.) Herald**:—Through all of Japan's hypocritical dealings with China there runs one determined purpose—to grab all she can. Every grab is followed by a statement that nothing that is done is done against the interests of the United States. Yet every grab lessens territory into which American products are permitted to go freely.

**N. Y. Evening Sun**:—Voters should have the Japanese situation in mind. They should not be blind to the default of the Wilson Administration's diplomacy at the time of last year's Japanese attack on China. They should realize the need of an Executive always ready to handle the Japanese question wisely and firmly.

**Brooklyn (N. Y.) Eagle**:—The matter is more than one of moment to China. It is of consequence to this country, which is interested in equality of opportunity. There is danger that the door will not only be closed, but locked.

**Detroit (Mich.) Press**:—There are two principal points in the Chinese situation as it affects the relations between the United States and Japan. Are American interests in China to be respected by the government in Tokyo, or in other words, is the open door policy to stand unimpaired? Are Chinese territorial integrity and Chinese independence to remain intact?

But the government in Washington does possess a right to make inquiries of the government in Tokyo as to the latter's plans, and though there might be some irony in invoking an understanding entered into with Japan for the checking of third parties the American government also has unusual ground for using "all pacific means" to preserve the independence of China from the Nipponese.

Whether our position as co-guardian with Japan over China will do China any good may be doubted in view of the sad debacle suffered recently by moral suasion as a factor in determining world affairs.

Moreover, the Root-Takahira understanding has been practically nullified by its failure to act in any degree as a deterrent against repeated invasions of China by both England and Russia.

**New York Sun**:—The United States has no territorial "easements" and no naval or commercial base in that country. She has a strong interest in the Open Door—nothing more. Her friends, Great Britain, Russia and Japan, promise that the door shall not be closed in her face. That is the situation.

**Ithaca (N.Y.) Journal**:—From this field the American manufacturer should not be shut off and assurances from Russia and Japan that the open door will be maintained relieve a suspicion that Japan and Russia were forming a commercial alliance prejudicial to other nations, including the United States. The traditions of the United States are against special privileges even though the United States might profit greatly by favoritism, but the spirit of a fair field and no favors is dominant.

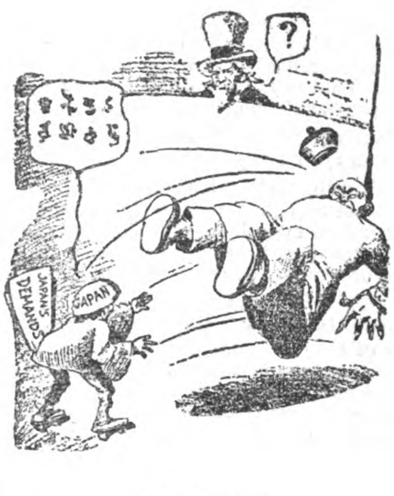
**Wilmington (Del.) News**:—In fact this government is told that Japan's latest demands on China are of no concern to the United States. And on this point the Wilson administration, professing to be disturbed, is likely to agree with Japan.

**Troy (N.Y.) Eve. Record**:—What action the United States will take in the matter is uncertain. Our interests in China are largely commercial, although there is a certain amount of sentiment entertained here in regard to the Chinese republic. Japan, however, probably will proclaim a "Monroe Doctrine" in regard to the Far East, which would render drastic action precarious unless the United States were willing to enforce Chinese integrity. The situation is threatening to China and apparently a step in Japan's plan to gain decisive control of that section of the world.

**Oil City (Pa.) Derrick**:—Japan has compelled China to sign two treaties, infringed the sovereignty of China, and made "scraps of paper" out of the "open door" declaration. That the issue exists is not denied by anyone who had devoted any time to the question and the United States is foolish if it is misled by the specious pleas advanced to conceal its real meaning.

**Watertown (N. Y.) Standard**:—John Hay, the eminent Republican secretary of state, secured an "open door" in China for all nations. The dispatch from Washington quoted above indicates that Japan is seeking to gain control of Manchuria and of Inner Mongolia. The Chinese are rightly apprehensive that this attempt may succeed while the European nations are engaged in their terrible warfare. At such a time the United States government is the only one of the great nations left free to put a guardian arm in front of China. Will the Wilson administration abandon John Hay's magnificent policy of

HOP LEE
(*Baltimore American*)




"JIU JITSU"
(*Atlanta Journal*)

IMPRESSIVE, BUT IT'S BEEN DONE SO OFTEN BEFORE
(*Milwaukee Leader*)

"the open door" and permit the Japanese government to gain control of large portions of China? Will American trade be permitted by Japan as freely in China after she gains control as at present? It is much to be doubted. Will the Wilson administration swallow the "soothing syrup" referred to and go to sleep upon the matter? The United States is now in favorable position to carry on commerce with China. That condition must not be imperiled.

**Pittsburg (Pa.) Leader**:—But that Japan means to dominate the east, China in particular, no one is too blind to see. The outcome is not quite so obvious but the situation is grave enough to cause extraordinary apprehension at Washington, where so much more is known than ever trickles out to the public.

**Butte (Mont.) Post**:—Japan's assurances that the status quo in the Far East is not affected by its recent treaty with Russia cannot be taken too seriously. Diplomatically speaking, Japan has been known to make assurances that only were intended to allay suspicion for the time being. Its course with Korea was one of the cases in point. If China now views with anxiety its pledge to maintain the open door and to respect the integrity of that country in matters of territory, it cannot be blamed for it.

**Chicago (Ill.) Herald**:—Wrapped up in the issue is the new Russo-Japanese treaty. Just what that promises in detail is not yet publicly known. If it forecasts the creation of a practical protectorate in China, then the alliance with Great Britain will inevitably go to the scrap heap. Such an eventuality would necessitate a fresh realignment of the powers so far as the Orient is concerned. It would imply probably a closer understanding between the United States and England.

For the next few years, however, Japan can hardly afford to challenge its ally in China. The British fleet still functions and the Mikado's is a sea-surrounded empire. The Japanese army cannot cross the water while England blocks the way. But changes are impending. In them the United States must play a part. During the years to come China will furnish the test. It is the danger spot of the world.

**Waterloo (Ia.) Courier**:—Not only America, but all the great powers of Europe, including Japan's ally, Great Britain, are pledged to the open door policy. Japan would not dare defy them all.

**Atchison (Kan.) Globe**:—Japan hastens to assure the United States that she has no designs against the integrity of China, and that the open door to that country will remain open. This is the soft answer meant to turn aside American wrath, and calm this country which, like the others of the world, has interests in China which may be safeguarded only by giving the several powers something like an even break in Chinese affairs. But the European war is not going to last always, and when it ends other powers, even better prepared than Japan, and stronger, will devote more attention to their interests in the Far East. Their interests like ours lie in maintaining the integrity of China and the open door to that country. If the soft answer prevails with them, it must be a statement of fact rather than a fair promise.

**Bangor (Me.) News**:—China may some day, however, become vastly more important in a commercial sense. And against that time of industrial development and accumulation of wealth in the Celestial Empire, it is well for us to insist firmly on the "open door" policy inaugurated by American diplomacy.

**Norfolk Virginian Pilot**:—These arrogant and insolent claims were not insisted upon at the time, but it was very well understood that they would be renewed at the first favorable opportunity and their renewal as regards the extensive region known as Inner Mongolia is what we are now witnessing. Japan and Russia have it fixed up between them that they are to be the paramount powers in all the Far East and there are no indications that in the achievement of this purpose they are to encounter any effective opposition.

THE JAPANESE DEMANDS
(*St. Joseph Press*)

**Louisville Courier Journal**:—Give Japan the mines, the railroad, the commerce, military and political advisorship in China, and in her own good time she will acquire China, or a considerable part of it, barring the probability of interference by Europe after the present war. That is Japan's doctrine. The name of Monroe hardly can be read into it.

**Hastings (Neb.) Tribune**:—It will pay to keep an eye on Japan.

**Bellingham (Wash.) Herald**:—There seems no doubt that the "open door" policy is being encroached upon by the Tokio government in the gradual realization of its designs to gain absolute control of the destiny of China. That is the source of apprehension at Washington.

**Brooklyn (N. Y.) Eagle**:—Perhaps the best way of testing Japan's honesty in her protestations that the open door must remain, is to go ahead and get American contracts with the Chinese Government. Any antagonism by Japan to the signing of such contracts would show the cloven hoof at once. But if the contracts are signed, Washington will see that they are not interfered with by Japan or any other Power. This country is now so strong financially that she can call Japan's bluff to the amount of hundreds of millions, offering to China what is needed. And this is the only country on earth that is able to furnish money to the extent that money is required by China just now. That is an incident of the strength neutrality has given to this Nation in the money markets of the world.

**Anderson (S.C.) Intelligencer**:—While the great European war is being waged and the world's attention is absorbed by this struggle, Japan is quietly extending her sphere of influence in China and gradually working against the "open door" policy agreed to years ago by the nations. Japan is always adroit and diplomatic in pushing her sphere of influence. With the world's attention absorbed by more spectacular events the Mikado is in a position to tighten his grip on China, and the world may wake up to the seriousness of the situation when it is too late. If Japan is allowed to realize her ambitions in China, it will take a war to dislodge her.

**Brooklyn (N. Y.) Eagle**:—But Japanese political domination is likely to make mere dreams of our hopes of capturing the great market offered by the Republic of China, which is a very serious reflection.

**N. Y. C. Herald**:—One of the demands now made public—providing for Japanese "policing" of Inner Mongolia—is sufficient to show that the policy applied in the conversion of Korea into Chosen is still working at the Guwaimusho.

**Anderson (Ind.) Bulletin**:—It would be no great task for her, under present conditions, to take over China entirely, and if she should openly and boldly declare her intention of doing so, who could say her nay? The United States is the only power that is disengaged just now, and even if we were so disposed, how could we prevent it? Frankly, it would be a job which we would not willingly undertake. We need not be surprised at anything that happens in the Japanese-Chinese zone. The opportunity and the temptation are great. The surprising thing is that more has not happened.

**Ansonia (Conn.) Sentinel**:—If the open door remains the open door in China we have nothing to say. If it is closed now or in the future we shall have something to say which it will be well for Japan to heed.

**Salt Lake (Utah) Tribune**:—Tokio has informed Washington that the Russo-Japanese compact does not affect the status quo in China. In view of the Japanese demands on China, which are designed to change the status quo radically, the Tokio assurance is in the nature of a diplomatic joke.

**Scranton (Pa.) Republican**:—There is only one power out of the fighting in position to speak an effective word for China in the present crisis and that is the United States. Report has it that China has sent an appeal to the Washington government.

It is extremely unlikely that the lame and halting foreign policy of the present administration will evolve anything that will prove helpful to China.

**Boston (Mass.) Herald**:—Japan may be expected to offer the specious plea that she is defending the open door. But she is not. Her fight is not for freedom of legitimate commerce, but for immunity to an illicit traffic in arms that the Chinese government must endeavor for its own security to suppress. For "ways that are dark" the Chinaman is not alone "peculiar." The supposed peculiarity is evidently big enough for two when light is thrown upon the ways of Japan with China.

An honest and friendly word of caution would go from Washington to Tokio if the United States had a competent government. And a word of encouragement would go to

(*Galveston News*) THE JAP DENIES THE ALLEGATION

Peking. But President Wilson will merely glance at Minister Reinsch's dispatches and hand them to Mr. Lansing to file. The country has only a President's clerk at the state department. Nothing will be done. No word will be spoken. O for one hour of Elihu Root!

**Philadelphia (Pa.) Inquirer**:—Russia and Japan agree in protesting that they entertain no unavowable designs on the independent sovereignty of China or on its territorial integrity, and we are told that their assurances are entirely satisfactory to the Department of State and that it is not intending to take any further actions in the premises. If that report is correct the Department of State must be easily pleased and its credulity must be equal to that of the proverbial marines, who are popularly credited with a readiness to believe any story they may hear, no matter how improbable. To plain people with only common sense for their guide the case is clearly one where actions speak more loudly than words, and the divergence between what Russia and Japan have done and are doing in the present connection is too striking to escape the notice of any ordinarily intelligent and attentive observer.

It is contrary to the interests of the United States and to the policy which this country has heretofore pursued that China should be allowed to pass under Japanese control, but the present incompetent administration threw China over very early in its career when it repudiated American participation in the five power loan and Japan is proceeding upon the theory that so long as Mr. Wilson remains in power the execution of its designs on China will encounter no resistance here. But at least the State Department need not make us look foolish by professing satisfaction with the situation and the outlook.

**Washington Post**:—Senator Lewis, of Illinois, who by reason of his study of Oriental conditions on the ground and his diligent application to the subject is highly qualified to speak in behalf of American interests, reminded the Senate yesterday that the events unfolding in the Orient call for careful investigation and forehanded action by the United States. His remarks were directed in part to the Department of State, and doubtless they will not fall upon deaf ears, coming as they do from a friend of the administration. Senator Lewis, however, has emphasized a situation that disturbs the public mind, and some reassurance from the department as to the steps taken by the United States to protect American interests would be welcome.

**Saginaw (Mich.) News**:—Nevertheless, the demands made upon China by Japan for apologies, indemnities and rights in southern Manchuria and eastern Mongolia are under consideration by authorities on international law particularly with regard to the "rights" end of the demands. In the meantime, the assurances received from Japan and Russia, with full explanation and authoritative statement of the former's demands are accepted at face value by Washington and the situation which was looked upon as quite serious has calmed materially. The natural fear had arisen that with the rest of the world too busy to pay attention to what was going on in the east, Japan was doing its best to close that "open door" which it cost so much to pry ajar.

**Salt Lake (Utah) Tribune**:—There is a good laugh in the persistence with which the Japanese continue to invite Americans to assist China financially. While taking possession of China with a boldness that startles the world, Japan suggests from time to time that American wealth be used to finance the Chinese government and Chinese development.

**Kansas City (Mo.) Star**:—It is too bad about China, of course. But as Kipling says:

> It is always a temptation for a strong and agile nation
> To call upon a neighbor and to say,
> "We have invaded you last night and are quite prepared to fight
> Unless you pay us well to go away."

Nations that do not want callers of that sort must also be prepared to fight, and China is not. So probably her caller will stay awhile.

**Kansas City (Mo.) Journal**:—It is to be supposed, in view of the fact that the United States will of course lose most of its extensive trade with China unless it fails to interfere, strong representations at least will be made. In these this government undoubtedly will have the strong moral support of the European powers, even including England, which is formally allied with the Mikado.

It is unlikely, however, anything less than a show of force would avail to prevent the carrying out of this premeditated theft of a great empire. It is equally unlikely the United States will make such a show. The moment has been carefully chosen. While the world looks on, powerless or unwilling to help, China will fall a victim to her own disinclination to learn the use of modern arms. This is the incontrovertible answer to the "peace at any price" advocates. If preparedness brings war, the oldest great nation in the world is now in a position to testify that a lack of it brings sorrow and disintegration.

**Pittsburg (Pa.) Sun**:—If it be necessary to close the door of commerce to the western world in order to bring about that condition Japan will not hesitate as soon as she feels that she possesses the strength. For our own interests it is well to watch Japan and checkmate her stealthy moves.

**St. Joseph (Mo.) Gazette**:—China is said to be turning to her old enemy, Japan, for loans with which to finance absolutely necessary undertakings in the new Asiatic republic. It must be humiliating to the Chinese, even though they be not a particularly proud people, to find themselves compelled to apply for money to the one government in the world more eager than any other to dominate them.

Japan gladly provides the funds, of course, although herself under back-breaking debts. Japan dreams of the conquest of China, and is not more averse to succeeding in the design through financial channels than by force of arms. Made dependent upon Japan for the replenishment of her treasury, it will be natural that China turns to the Mikado for alliances of other sorts, until the island empire shall have made the Celestials its vassals in the modern method of assimilation of nations.

The phase of the situation of vast interest to the Caucasian world is the effect upon it of the final amalgamation of the two yellow races. United in all things—unless it be innate sympathies—Japan and China a half-century hence will be able to present to the other nations of the earth a solid front which may well stagger those other peoples by its power to carry all before it.

**Los Angeles (Cal.) Tribune**:—It is natural that Washington should view with deep concern the resolved execution of purposes that make mockery of the policy of the open door, and that eventually would bar us from profitable participation in the great trade the new China otherwise would offer. Not all the tragedies are staged in Europe. It is not on the field of battle alone the fates of nations are being determined. The silken cords of Japanese diplomacy, reinforced by overwhelming military power capable of instant use, are strangling China's independence.

**Chicago (Ill.) Eve. Post**:—It is evident, however, that we cannot close up the office and go home relying indefinitely upon the latest assurances from the Far East. We must stand on our feet and continue to play our own game with increasing vigor and watchfulness. This means—statesmanship of the first. Are we or are we not to have it during the next four years?

**Butler (Pa.) Eagle**:—The Statement received from the Japanese Foreign Office in response to our State Department's inquiries regarding the new demands made upon China by the government at Tokio is politely evasive and adds nothing to the information received from non-diplomatic sources. We are asked to content ourselves with the bare declaration that "there was nothing in the demands infringing the sovereignty of China and nothing impairing the Root-Takahira agreement."

So Japan's interpretation of Japan's demands will probably be accepted as conclusive by our State Department after empty protestations of pained surprise and serious alarm. And Japan will go on exploiting China whenever a pretext offers until the war is over and some combination of European nations call a halt.

**Bakersfield (Cal.) Echo**:—Japan is going to take another big slice of Chinese territory with or without China's consent, and will aggrandize herself at the expense of closing the "open door" which the United States has helped to maintain in China since the Boxer troubles.

**Everett (Wash.) Daily Herald**:—And the outcome is foregone. Japan will be polite and plausible, will protest to the world the purity of its intentions, but, if need be, will send enough soldiers into China to compel the Chinese to do as Japan wishes to be done. And the dominance of Japan over the Chinese empire will become still stronger.

Officials at Washington, it is said, are anxious about the situation, but there's no occasion for worry. Japan will get what it wants and we will not interfere, though we may protest if American rights are involved. And Japan doubtless will view our protests in the light thrown upon them by a number of recent events.

**Macon (Ga.) News**:—Use of force in her behalf by the United States is not to be figured on. A mere protest from Washington will be laughed at in Tokio. Japan, despite her disclaimer, is well advanced on her course toward establishing a "Monroe doctrine for the Orient."

The outlook is not at all reassuring for those American interests which have been aiming at an extension of our trade with the Far East.

**New London (Ct.) Telegraph**:—Those demands involve the United States in a way because they seem to look forward to Japanese domination of China and have the appearance of the first step in the subjecting of the Chinese to the Japs. The open door, toward which American interests have had their eyes turned, seems to be slowly closing.

It is another problem put up to a Wilson administration, an administration that the country has learned to distrust as vacillating, temporizing and self-centered. On its handling may depend the vast volume of eastern trade and the valuable opportunity of an even break for the United States in the coming mighty development of the vast empire of China.

There is none to interfere between Japan and Chinese despoliation except the United States, and the fear is that Japanese diplomacy will outguess and outgeneral and outbluff those who have in present charge the foreign relations of this country. There is nothing in the conduct of our recent foreign affairs to make for confidence. Have we run out of Blaines and John Hays and Roosevelts entirely?

**Augusta (Ga.) Chronicle**:—Japan has another excuse to press her opportunity in the East and she is taking advantage of it. That, at least, is the way the whole affair will be interpreted in America.

**St. Paul (Minn.) Poineer Press**:—But Japan's assurances are by no means satisfying. She stands in the position of one suspected of theft. If Japan is unscrupulous enough to violate her agreements with the United States she

must be unscrupulous enough to deny that she has done so. It is for another party to decide whether or not she has been guilty of intrigue and double dealing.

**Webster (S.D.) World**:—When the Germans went into Belgium they let the world know what they were doing and the government had no apologies to offer. Japan tries to sneak her way into China and lay the blame for the ruin of that country on the poor Chinese themselves. What China needs is a strong protector for about twenty years until she can get into shape to take a fall out of Japan.

**San Antonio (Tex.) Express**:—With a Monroe Doctrine all her own Japan proposes to take China under her wing, but is good enough to say that Uncle Sam's commercial and trade interests with the Celestial Empire shall not suffer in the least by reason thereof. Japan will keep the door open except where it is her interest to keep it closed.

**Columbus (O.) Dispatch**:—There is no reason to suspect the good faith of Japan and Russia in assuring the United States government that their new treaty does not repeal previous conventions, and that they have not entertained for a moment any intention to depart from the policy of the "open door."

American interests in China have been safeguarded, and will be, and the Washington government is satisfied. The matter will not be pressed farther. The jingoes have suffered another disappointment in the effective diplomatic methods of the administration.

**Columbia (S.C.) State**:—These arrogant and insolent claims were not insisted upon at the time, but it was very well understood that they would be renewed at the first favorable opportunity and their renewal as regards the extensive region known as Inner Mongolia is what we are now witnessing. Japan and Russia have it fixed up between them that they are to be the paramount powers in all the Far East and there are no indications that in the achievement of this purpose they are to encounter any effective opposition.

**Philadelphia (Pa.) Press**:—Of all the great Powers only the United States is free: and she—as Japan well knows—if not too weak nor yet too proud to fight would be exceedingly reluctant to go to war on the question of preserving the Open Door in China.

So Japan's interpretation of Japan's demands will probably be accepted as conclusive by our State Department after empty protestations of pained surprise and serious alarm. And Japan will go on exploiting China whenever a pretext offers until the war is over and some combination of European nations call a halt.

**Tampa (Fla.) Daily Times**:—The unreasonable demands being made by Japan on China, compliance with which practically means abandonment of Chinese sovereignty in inner Mongolia and southern Manchuria, seriously threatens America's policy of the open door maintainance of China's integrity, according to the opinion of Washington authorities, who have their eyes turned toward the Orient.

Americans have shown unmistakably that they are not looking for trouble, but they do demand preparedness for trouble when it is thrust upon them.

**Logansport (Ind.) Tribune**:—Slowly but none the less surely the Japanese are closing the open door in China.

We may protest and bluster unaided; we too are powerless to thwart the plan for the ultimate subjugation of China. China herself is powerless. Her financial condition is desperate. Her troops are not equipped to resist successfully. There is naught for her to do but protest and make the best bargain she can.

Japan has chosen a very opportune time to put into effect her "Monroe doctrine" for China.

**Long Island City (N. Y.) Star**:—Until trustworthy evidence appears to the contrary, it is foolish to charge either Japan or Russia with bad faith. Japan seems to have faithfully respected, so far, her agreement made with us in 1907, and for the Japanese-hating jingoes in this country to insist that she has contrary intentions can serve no good purpose.

**Troy (N. Y.) Record**:—The overt acts and apparent purposes of the Mikado's government, in contradistinction to the assurances of both official Japan and Russia, puzzle the onlooker who views the affairs of the Far East from a distance. Undoubtedly the United States must accept the statements made to its ambassadors, but it will continue to look askance at every aggressive act of Japan that threatens to project Japanese domination to the Chinese republic or directly or indirectly interferes with the integrity of that country and the open-door policy.

**Nashville (Tenn.) Banner**:—A war with Japan would be a very unpleasant and unprofitable affair, but the Chinese trade is important Our Panama Canal would be greatly reduced in usefulness if the commerce with China should be curtailed.

The prospect is unpleasant, but the United States should make firm insistance on the maintenance of its commercial rights.

**Fork (Pa.) Dispatch**:—The Tokio government betrays confidence bordering on insolence. Evidently this is the result of the new treaty between Japan and Russia which provides that the two nations will act together if any special interests of one party in China, recognized by the other party, shall be menaced.

If Japan can put her hand on China's throat and compel the surrender of police power in Mongolia, then the monopolization by Japanese manufacturers of China's markets will be inevitable and the "open door" a myth.

American interests seem to be more deeply involved that in any event in the Far East since Japan's famous ultimatum to China of May, 1915.

**Baldwinsville (N. Y.) Journal**:—American interests seem to be more deeply involved than in any event in the Far East since Japan's ultimatum to China of May, 1915. This it is feared may cut directly across the American policy of the integrity of China. It has the possibilities of making the whole vast region a mere dependency of Japan. The Japanese government is ambitious, and it sees the possibilities for trade and political power in the territory now controlled by China, near the shores of its own land. Japan has adapted itself to the demand for the open door, but it desires that the door shall swing toward Japan.—Albany Journal.

**Washington Times**:—The assurances from both Tokio and Petrograd are in such unequivocal terms that they are declared to be entirely satisfactory to this Government; which indeed, in such language as is employed, they must be unless a direct question of their good faith were to be raised.

**Newark (N.J.) News**:—The problem of how best to enter the "open door" more generally than is now being done by the United States cannot be solved by an investigation in China alone. The inquiry should also be extended to Japan, and it could profitably be made to include a study of Japanese ambitions for the establishment of an Asiatic Monroe Doctrine and the effect it would have upon the Philippines.

**Roanoke (Va.) News**:—America is asking Japan for equal and fair treatment in Asia, but is giving to Japan an emphatic illustration of the extreme limits to which race prejudice sometimes can go.

**Lincoln (Neb.) Herald**:—Recent Japanese movements in China, the Chicago Herald notes have caused a natural anxiety at Washington, always concerned with maintaining the principle of the "open door" but not always exactly sure of how it is to be maintained in case of an aggressive effort to shut it.

The Herald goes on to say: "To quiet this anxiety comes the assurance of Japan respecting the integrity of China. However, that doesn't wholly reassure. What is needed is some stronger assurance than we seem able to secure respecting the integrity of Japan. Once certain upon the latter point, the United States could dismiss all present care.

"In spite of these diplomatic assurances, no one need doubt that Japan is pursuing her own interests in China and will go the limit to do it in the absence of very strong counteracting influences. She is perfectly willing to preserve the phrase 'the open door' in its entirety up to the last moment. What she is quietly concerned with is the substances of things."

**Fort Myers (Fla.) Press**:—Japan is steadily becoming more aggressive as she becomes more progressive, and Russia, due to some past treaty unpleasantness, might be classed as a real ally of Japan in wishing to exclude the United States from commercial intercourse with China, if it were possible. It is of course gratifying that there is to be no interference, however strong the desire may be.

**Hutchinson (Kan.) News**:—We have "written assurances" that the open door in China is to remain open. The "piece of paper" that gives these assurances comes from Tokio, and the Japanese government is behind it. Japan has been honest with Washington and there is no reason that we should be afraid that she is not telling us the truth now.

**Waynesboro (Pa.) Herald**:—The progressive extension of Japanese control over Chinese affairs has naturally caused concern at Washington. The "open door" policy, making for equality of opportunity, is at stake. The assurances from Tokio that the recently concluded Russo-Japanese treaty will not affect the status quo in the Far East are not reassuring. The Treaty professes to safeguard the "integrity of China" as against outside Powers who may harbor predatory designs, but it does not guarantee to China any protection from the designs of her guarantors.

**Macon (Ga.) Telegraph**:—A Japanized China raises a menace to the white races of the world beyond computation. As long as the English had their close and controlling alliance with the Japanese there was little fear from the yellow peril because the yellow peril periled just as far as Downing street thought well for it to go. Which is small and off by itself. But that alliance, while existing in name, is pretty much a thing of the past and Japan will need looking to after this fracas. A process in which, by the way, this large and somewhat Chinafied republic of ours has a direct and unevadable part. We have the Philippines and we are pledged to the Chinese "open door" which the Japs are now so industrially nailing up.

**Guthrie (Okla.) Leader**:—Japan is making hay with China while there is any sunshine to do it in. By one step after another she is gaining control of Chinese territory and making China dependent upon her almost for political existence.

The time is probably not far distant when British, French, German and all other possessions and spheres of influence in China and Anam will disappear, and Asia for the Asiatics will become an actual fact. But before that time arrives there is likely to be a lot of trouble, out of which this nation would do well to keep. We have plenty to do at home.

**Boston (Mass.) Transcript**:—The Japanese Government may not deliberately intend to close the open door against us. But what is it doing in Manchuria and Mongolia? It is asserting its authority more and more over those regions. It is pushing its settlements further and further into China and assuming more and more extra-territorial jurisdiction over them.

Is the door "open" under such circumstances? Not quite. And it tends to close more and more.

The Japanese will not directly deprive us of any trade privileges in that part of China where they are settling and policing. But little by little there will be no more trade for American houses. And how could the Japanese statesmen have helped it?

# ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

## COMMERCIAL

**Sugar Shortage in Philippines.**—One-half of the sugar crop in the province of Occidental Negros, the largest sugar district in the Philippines, will be a total loss this year owing to the continued rains during the planting season, according to Enrique B. Magalona, a wealthy planter of Saravia. From November last until this May it rained almost without cessation, declares Mr. Magalona, and during that whole period there was only an interim of some two months when the fields were not absolutely flooded.

"If this had happened in any other part of the world," he remarked gloomily, "you would have seen the rest of the country giving benefit performances for the suffering farmers." The rains occurred during the planting season and those months immediately following when the cane needs special care and the planters now realize that at least half of the 4,000,000 piculs crop expected this year is irrevocably lost. The money loss is placed at P10,000,000.

**Sugar Refining in Japan.**—The cane sugar plantation and sugar refining industry at home, which had been depressed by the pressure of foreign sugar, are now rising up under the encouragement of the Department of Agriculture and Commerce.

In pursuance of the successful results obtained in Formosa, steps were taken by the authorities to promote the industry in Okinawa, Oshima, in Kagoshima prefecture and Ogasawara.

According to investigations made by the Department of Agriculture and Commerce, the cane sugar output and plantation area at home are yearly on the increase, the average annual amount in the last three years being 125,000,000 kin, of which 80 per cent is *koku to* (black sugar) and the rest *shir ojita* (white colored). The average plantation area in the last three years is estimated at over 21,700 *cho*.

There are 5 refineries belonging to 3 companies in Japan proper, which consume altogether 850 tons of raw sugar daily. They have a capital of 8,600,000 yen. Raw sugar is supplied from Formosa and Java, while refined products, after satisfying demand at home, are exported to China, where they compete with Hongkong sugar. For the last three years, the amount of raw sugar used was 224,000,000 kin (Kin=1½ pounds) of foreign produce and 62,000,000 kin of Formosan produce, while the output of refined sugar was 256,000,000 kin.

As regards import trade, on account of the activity of the refining industry at home and also the unfavorable yield of the Formosan raw sugar the average annual imports for the last three years amount to 368,000,000 kin, valuing 25,000,000 yen, which mostly consist of raw sugar. Thus the imports from Germany and Hongkong have totally ceased, whereas the imports of raw sugar from Java now reach 90 per cent. One more feature is that the crops in Formosa greatly vary according to years and the imports of sugar into Japan range accordingly from 130,000,000 kin to 540,000,000 kin.

The exports of refined sugar from Japan, regardless of the condition of crops in Formosa, are yearly on the increase, the average annual export for 3 years preceding 1914 being 130,000,000 kin, or 12,000,000 yen value. The export amount in 1915 was 117,000,000 kin valuing 12,000,000 yen. The principal destination of the goods is China, where Japanese products are finding their way into the market of Hongkong sugar.

**Beet Sugar Outlook in Manchuria.**—Mr. Tetsu Maki, managing director of the Ensuiko Sugar Mill Company, has just returned from a tour of Manchuria, where he inspected the condition of the beet sugar industry. His impression is that the entire region of Manchuria seems to be fit for growing beet, but he entertains greater hope in the region north of Mukden. Beet growing in Manchuria, according to Mr. Maki, has several advantages over cane growing in Formosa. First, there is greater area of land easily procurable; second, the labor is abundant and cheaper; and third, the great market for sugar is nearer than in the case of Formosa. Of these, the first advantage is of an inestimable value because the sugar-milling industry is quasi-agriculture. Especially, it is to be noted with interest that sugar-mill men can easily acquire the use or the ownership of any large tract of land in Manchuria.

But there is one disadvantage, the lack of irrigation. It is therefore necessary, that artesian wells be dug on a large scale in order to undertake beet growing. At present, the wells in Manchuria are only 30 feet deep, and the temperature of the water is so low that it does not do for irrigation purposes. No investigation has yet been made as to what depth water of a moderate temperature could be obtained. As to the question of what effect the beet sugar industry in Manchuria has upon the sugar industry there Mr. Maki believes that it cannot fail to be a strong competitor, but thinks it will not have a bad effect on Formosa. On the contrary, it will give an opportunity to the Formosan mill men to effect various improvements in their working, which would otherwise be left undone.

**Taiwan Sugar Co. Prosperous**—The Taiwan Sugar Manufacturing Company has submitted the following statements of operations for 1915 to its shareholders.

The net profit for the year has amounted to 6,020,673 yen as the result of the sustained boom in the sugar market, the highest figures ever attained since the foundation of the Company. The disposition of this profit has been decided upon as follows:—

| | Yen |
|---|---|
| Net profit for the year ... ... ... | 6,020,673 |
| Brought over from last account ... | 109,221 |
| Total ... ... ... ... ... ... | 6,129,895 |
| Redemption of fixed capital ... ... | 800,000 |
| Legal reserve ... .. ... ... ... | 265,000 |
| Secondary reserve ... ... ... ... | 400,000 |
| Dividend equalization fund ... ... | 600,000 |
| Bonuses for officers and social expenses ... ... ... ... ... ... | 230,000 |
| Ordinary dividends at 12 per cent per annum ... ... ... ... ... ... | 2,208,000 |
| Special dividends at 3 per cent ... | 552,000 |
| Extraordinary special dividends at 1 per cent. per annum ... ... ... | 184,000 |
| Pension fund ... ... ... ... ... | 20,000 |
| Balance carried forward to next account ... ... ... ... ... ... | 820,985 |

The net rate of dividends for the year thus amounts to 16 per cent. per annum, which figure is a record since 1908 when 14 per cent. dividends were declared. The amount of the balance to be carried forward is also a record figure, according to the Board it was augmented to guard against the emergencies in the next business term, which will be only six months instead of twelve months as at present.

**Japan's Silk Trade.**—Japan's marvelous growth in the raw silk trade was recently celebrated at the Yokohama Silk Conditioning House which observed the twentieth anniversary of its establishment. Twenty years ago the country's silk exports amounted to 17,000,000 yen. To-day that amount has grown to 200,000,000 yen. About 5,000 persons—leading silk merchants, both foreign and native, and many other prominent persons were invited to the celebration.

Throughout Japanese history, the silk industry has represented the greatest industrial factor in the country. Tradition says that its origin preceded the establishment of the Empire 2,500 years ago. Mr. Akira Shido, who has been the director of the Yokohama Silk Conditioning House almost since its establishment, said that the anniversary celebration of the growth of Japan's greatest industry had a double meaning. Besides showing increase in Japan's prosperity it illustrated the importance of maintaining most cordial relations with foreign countries, especially the United States, which is Japan's largest customer. Japan annually sells to foreign countries raw silk worth about 200,000,000 yen, 80 per cent of which goes to America. America annually buys from foreign countries, such as Japan, France, Italy and China, about 30,000,000 pounds of raw silk worth 300,000,000 yen. Seventy per cent of this is imported from Japan.

The raw silk trade is generally most brisk from July to October. In spite of the fact that the trade is not as good the first part of the year raw silk worth over 100,000,000 yen was sent to America up until the end of June this year. It looks as if a new record would be made this year.

Commissioned by the Government, Mr Shido has made several trips to America in the interest of the silk trade. He is in close touch with American weavers. About 250 persons are now working in the Yokohama Silk Conditioning House, including 130 women.

**Japan's Exports Decrease.**—The foreign trade of Japan during the second ten days of June was valued at 25,726,000 yen of exports and 19,740,000 yen of imports, with a balance of 5,986,000 yen in favor of exports. Compared with the previous ten days, exports have decreased by 13 per cent. and imports by 35 per cent. Compared with the corresponding period of last year the exports have increased 6,793,000 yen and imports 2,429,000 yen. The figures since the beginning of this year are 439,656,000 yen for exports, and 360,078,000 yen imports, with a balance of 79,578,000 yen in favor of exports.

**Fear Shortage of Wild Silk.**—An insect has infested a large number of scrub oak groves in South Manchuria where wild silkworms intended for the laying of silkworm eggs were being raised in Spring. These pests devoured all the tender leaves of the scrub oaks. The second crop is now being reared for filature purposes but the trees have not

yet recovered from the ravages of the insect, and all that is available at most places is new leaves coming out much behind time. In South Manchuria, the ordinary returns are placed at 7,000,000,000 grains worth about S. Y9 000,000. The indications now are that the yield will be 50 per cent below normal and that wild silk, pongee, or tussah silk will take an exceptional flight this year.

**Raw Silk Market Still Rising.**—The Yokohama raw silk market, which was active at the end of July, has continued to gain strength with the quotations rising gradually. On August 3 the European firms were busy, and about 50,000 *kin*, (kin=1⅓ pounds) including many varieties, changed hands at 1,550 yen for the extra No. 1 and 1,230 yen for the medium fines, or 10 yen higher than previous quotations. The quotations were the highest on record since April 11.

The causes for the activity are that the purchases were mostly spot delivery or early delivery bargains and there was not enough stock to fill all the standing contracts. The strong buyers since last month can be said to have represented the European demand and it is the peculiar feature of European buyers to be inclined to spot or early delivery.

Toward the end of August there was some American demand in the market, but this also inclined to spot or early delivery. This coupled with the scarcity of stock in hand has maintained the price.

**Japan's Rice Crop Short.**—Official figures of the Department of Agriculture and Commerce state that the first estimate for the rice crop of this year is 55,611,771 koku, (koku=5 bushels) which means a decrease of 0.56 per cent against the real crop of rice last year, and a decrease of 6.7 per cent against an average year of the past ten years.

**Favourable Rice Crop in Chosen.**—According to the investigation of the Government-General of Chosen (Korea) the total area of rice-fields in Chosen this year is about 2,392,000 acres of wet farms and about 34,000 acres of dry farms, showing an increase of about 52,000 acres in all in comparison with last year. A better harvest is being looked forward to than last year, which yielded 11,000,000 *koku*. (koku=5 bushels).

A contract for the sale of 58,000 *koku* of cleaned rice for discharging in lighters at Vladivostok within four months at Y16.50 per *koku* has been concluded between the Russian Department of Agriculture and Commerce and the rice-dealers at Chemulpo, Chosen. The Russian Government has issued for the purpose 5% Exchequer Bills falling due in one year. 10,000 *koku* of the contracted amount will be supplied by the Oriental Colonization Co. and the remainder will be made up with stocks at Chemulpo.

**Japan to Enter Black Tea Market.**—While Japan's production of green tea has made rapid progress in recent years, the annual production now having reached to 40,000,000 *kin*, (kin=1⅓ pounds) and being exported to the United States and other countries in great quantities, the production of black tea is still insignificant. The production of black tea was commenced only a few years ago, and the amount this year is expected to be not more than 30,000 *kin*. Most of this is from the experimental factory belonging to the Central Tea Merchants' Union, and few individual producers have been making this variety. That the production of black tea is only 30,000 *kin* a year now is not to be wondered at if it is remembered that although the production was experimentally commenced some four or five years ago, it was only a year or two ago that it was discovered that the production of black tea is not impossible. It is said that the black tea made here now compares favorably with the Ceylon black tea in quality, and the demand for it in Russia and other countries is found to be strong. Seeing this, there has been prevalent an opinion among the Japanese tea makers that they should produce as much black tea as possible to meet the growing demand for export. This opinion is about to be crystalized by the formation of a joint stock company for producing black tea by leading tea producers and merchants, members of the Central Tea Merchants' Union. The plan of the new plant is to start the making of black tea with a capital of about 200,000 yen, the production to be 350,000 *kin*. With the realization of the above plan, Japan would not only do away with the import of black tea, which amounts to about 180,000 yen a year, but also will be able to export to other countries.

**Philippine Cigar Trade.**—The Philippine cigar trade with the United States is looking up and developing beyond the greatest expectations, according to Revenue Collector Rafferty. Over last year, the increase for six months is ten million cigars. This means not only increased business for the factories but increased revenue for the government. The collector said that when the bureau began its investigation into the question of the failure of the tobacco trade with the United States, it was assured by the managers of the Manila factories that the cause of the trouble was due to the handling of the cigars in the United States. Investigations of the cigar trade in the United States last year and this year demonstrate very clearly that the failure of the cigar trade was not due in any great measure to difficulties encountered in the United States, but rather to the unfair competition of the factories among themselves in that territory and their antiquated methods of distribution. The danger now is, that due to the efforts of the government's extensive advertising campaign in the United States, the demand for Manilas will exceed the supply, unless the factory managers perfect their organization and do the other things necessary to prepare to meet the reasonable demand of the trade.

**Japanese Tobacco for France.**—Last year a consignment of Yonezawa leaf tobacco was exported to London. This season also, the same brand, to the amount of 12,500 kwamme will be consigned to Marseilles through the Ezoye Shoten, Tokyo, the cargo being shipped from Yokohama. The tobacco is of low quality and presumably for military purposes, observes the Chugai Shogyo.

**Seek Tobacco Monopoly.**—Some time ago a British company offered the Peking Government $5,000,000 a year in consideration of the tobacco monopoly concession in the whole of China, according to newspaper reports, but the negotiations fell through. There is now a rumour to the effect that negotiations for a similar concession in the three Eastern Provinces are going on, says the Manchuria Daily News.

**Japan's Imports of Oil Cake.**—The imports to Yokohama of oil-cake during the first half of 1916 amounted to 3,303,600 piculs, (picul=133⅓ pounds) valued at 8,882,640 yen. The figures, compared with the corresponding period of last year, show a decrease of 227,760 piculs in quantity and of 940,020 yen in value. This decrease is believed to be due to a remarkable rise in the price of silver in China and the diminution in the purchasing power of the agricultural classes in Japan consequent upon the low price of rice ruling during the period under review. The following table shows the imports during term:

| From | Quantity. Piculs. | Value. Yen. |
|---|---|---|
| China ... ... ... ... ... | 357,425 | 942,204 |
| Kwantung Province ... | 2,155,314 | 5,743,029 |
| Other countries... ... ... | 790,861 | 2,197,407 |

**India's Indigo Output.**—Indigo is one of the very few chief products of India which since the war commenced has not come under any restrictions. The high prices ruling have induced an increased acreage in India of 112 per cent., equal to 314,300 acres, but owing to climatic influences the outturn per acre fell from 19 to 14 lbs. and the yield of dye (39,000 cwts.) has only expanded by 58 per cent. In Madras only was the season favourable. In Bihar both the Java and Sumatrana crops suffered either from want of moisture or from floods; much of the upcountry Sumatrana seed also was of poor quality.

Prices in Great Britain in the absence of synthetic indigo have ruled very high throughout the year and for good red violet has remained steady in the neighbourhood of 14s. per lb. In July, 1913, the price was 2s. 11d. per lb. Exports have risen by 33 per cent. in quantity and are the highest since 1912-13 and in value by 27 per cent., and it is necessary to go back to 1901-02 for such a high aggregate value. In the home country imports of synthetic indigo in two years have fallen from 23,889 to 6,542 cwts.

The natural product in the same period from 4,174 has risen to 25,157 cwts. Yet, in spite of this, only 7,230 cwts. have gone to the United Kingdom from Bengal and a good proportion of this must have been Kurpah or Madras indigo, for from that province we imported 2,641 cwts. With the high prices now obtaining the best qualities are not always economically procurable, and with good Behar rising at times to Rs. 750 per factory maund Kurpah indigo in the neighbourhood of Rs. 345 or native (Oudh) indigo averaging Rs. 400 per maund, is worthy of consideration.

The demand from the United States is magnificent, the best for twelve years. To the cessation of synthetic indigo must be attributed the unusual shipment of 333 cwts. to Russia and 148 cwts. to Italy, while Japan has again become a buyer of the pure product. More seed was received from Java, 377 against 98 cwts. The British Government have purchased a certain quantity of indigo to prevent speculation. Through the action of the enemy 136 cwts. valued at Rs. 1.19 lakhs were lost at sea. Exports of indigo coastwise were 34 cwts. to Burma: a decrease of 84 per cent.

**Bean Mills at Dairen.**—The demands for Bean Cake in Japan, even though the rice market at home may revive more or less, are hardly expected to run up very high as the season of demand is well over. For the summer manures, the storage of 1,800,000 pieces at Dairen, together with 400,000 pieces in stocks at home, are expected to suffice. As already reported, the prices at Dairen and in Japan are far from feasible. But this did not prevent the Nisshin Mill from declaring a ten per cent dividend from net profits of 22.8 per cent for the half year, which was one of record prosperity.

**Manchurian Soya Bean Cake.**—According to the investigations made by the Finance Office, Tokyo, Manchurian Bean Cake imported at Kobe, Yokohama, and other home ports from January to April last, was returned as under:—

| | Kobe Pieces | Yokohama Pieces | Elsewhere Pieces |
|---|---|---|---|
| January ... | 906,062 | 877,474 | 1,101,82[illegible] |
| February ... | 1,017,522 | 1,224,048 | 735,2[illegible] |
| March ... | 857,491 | 855,076 | 1,001,35[illegible] |
| April... ... | 1,375,505 | 1,627,050 | 1,234,3[illegible] |
| Total ... | 4,157,241 | 4,583,648 | 4,142,7[illegible] |

The aggregate imports totalled 12,88[illegible] pieces, an increase of 740,000 pieces over the corresponding period of last year. The figures for the port of Kobe showed a striking increase of more than 1,000,000 pieces.

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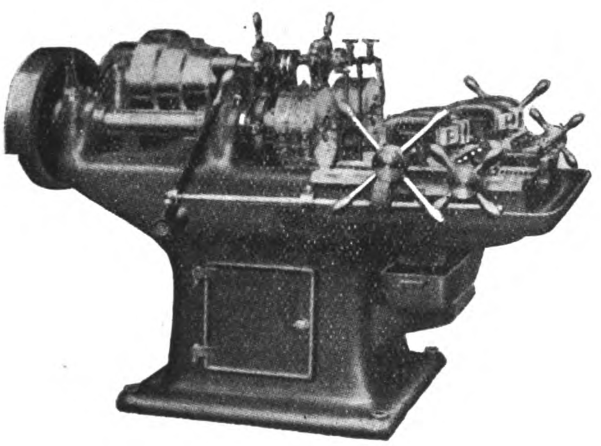

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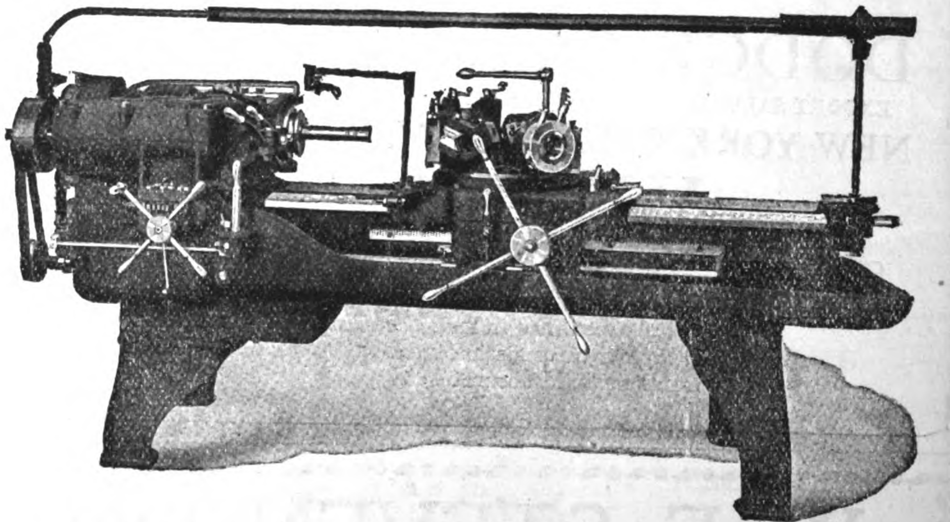

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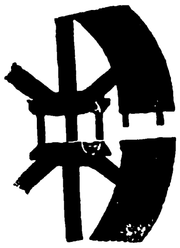

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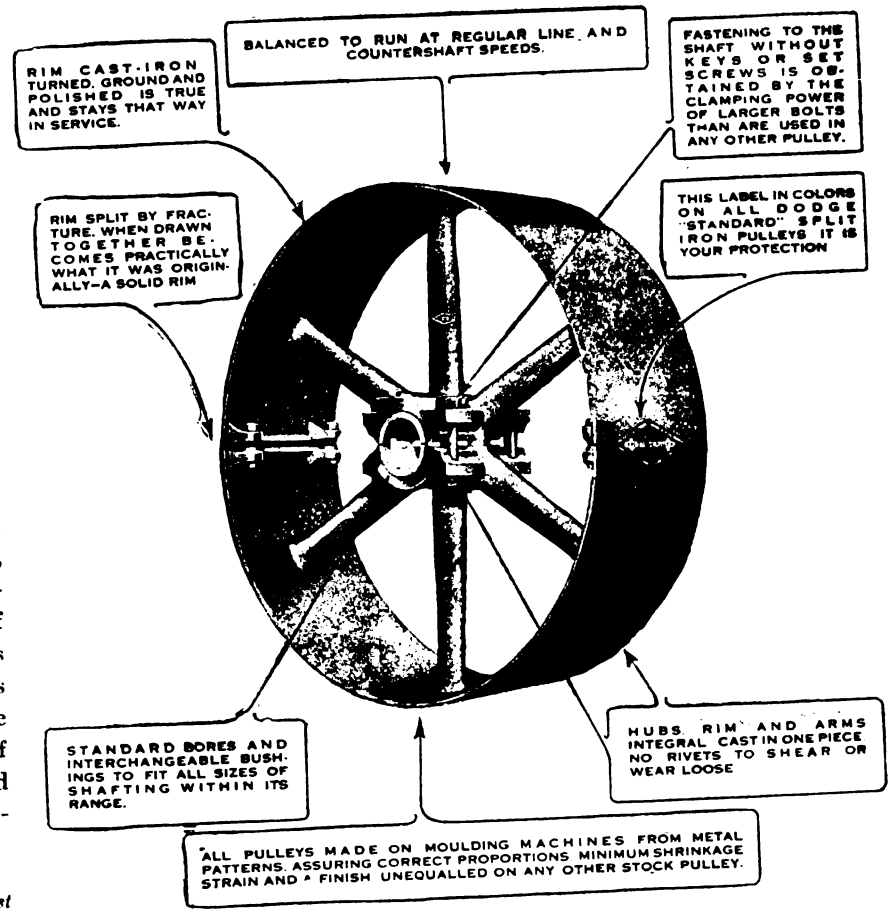


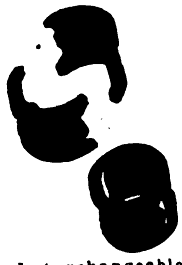

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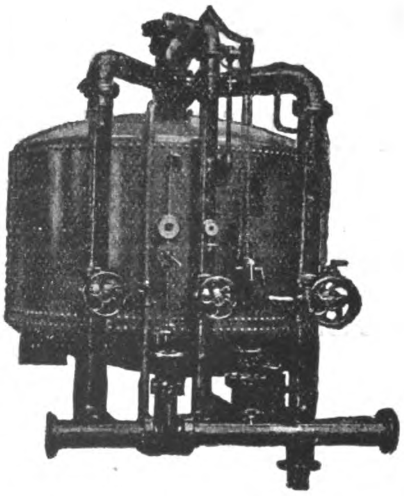

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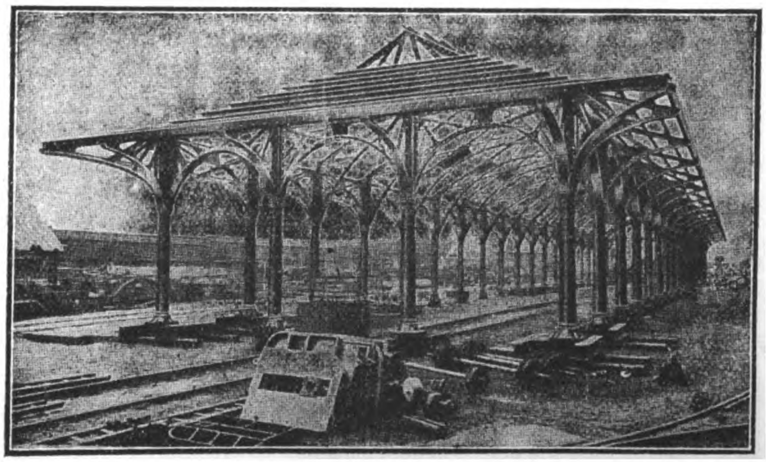

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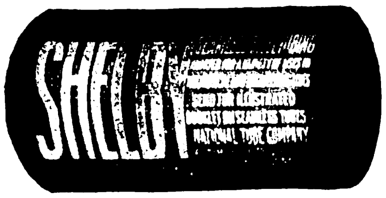


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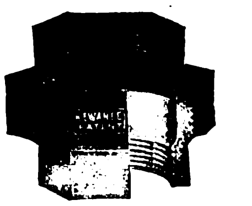

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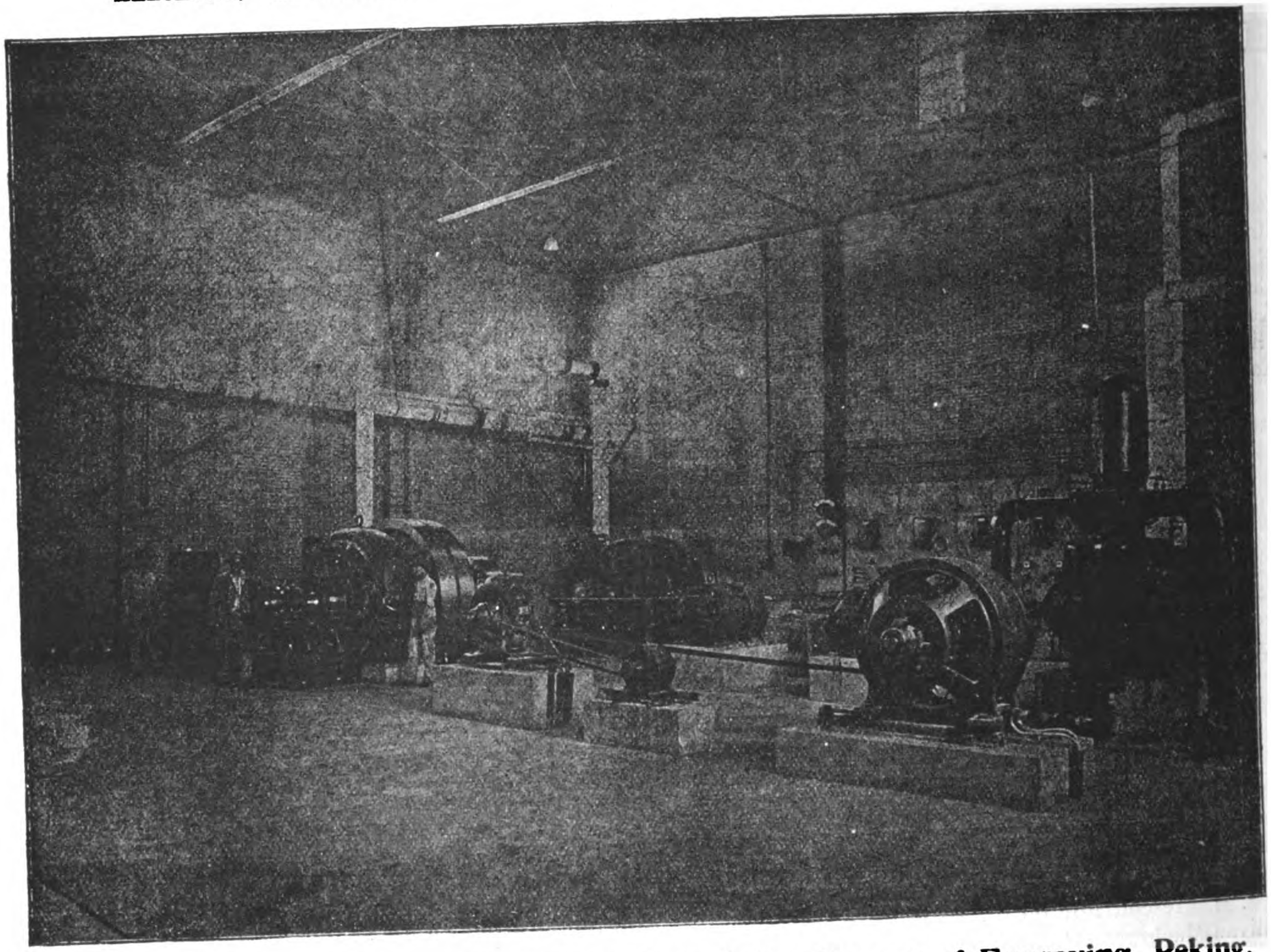

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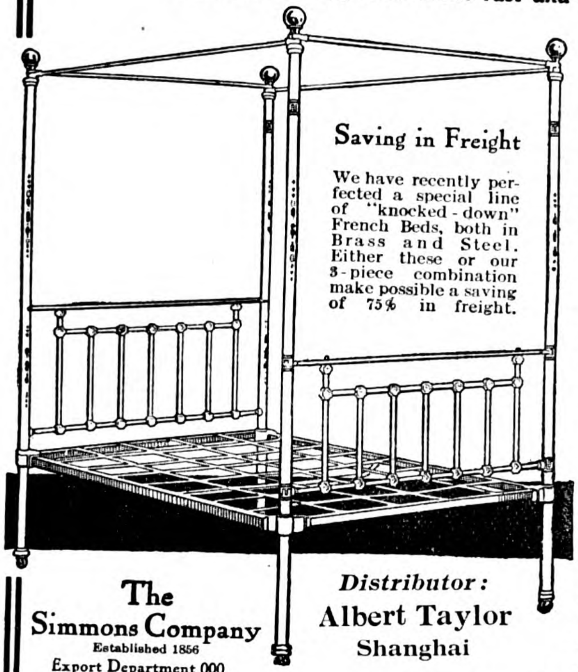

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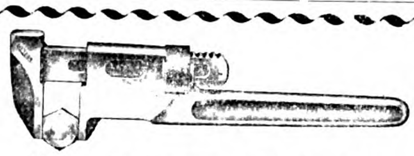

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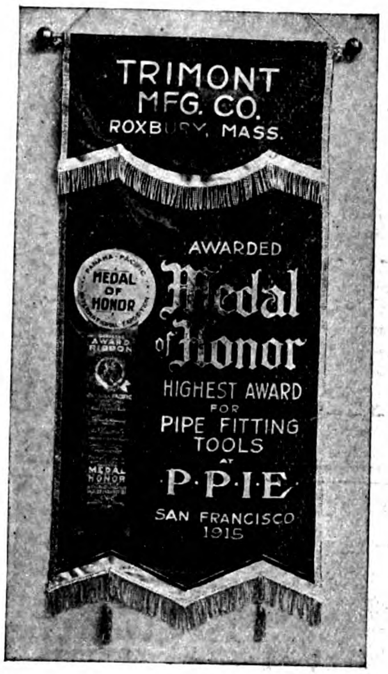

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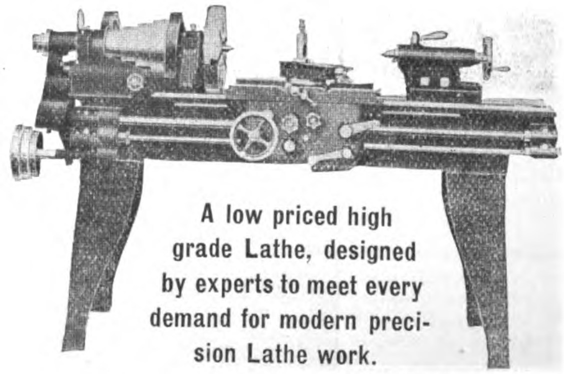


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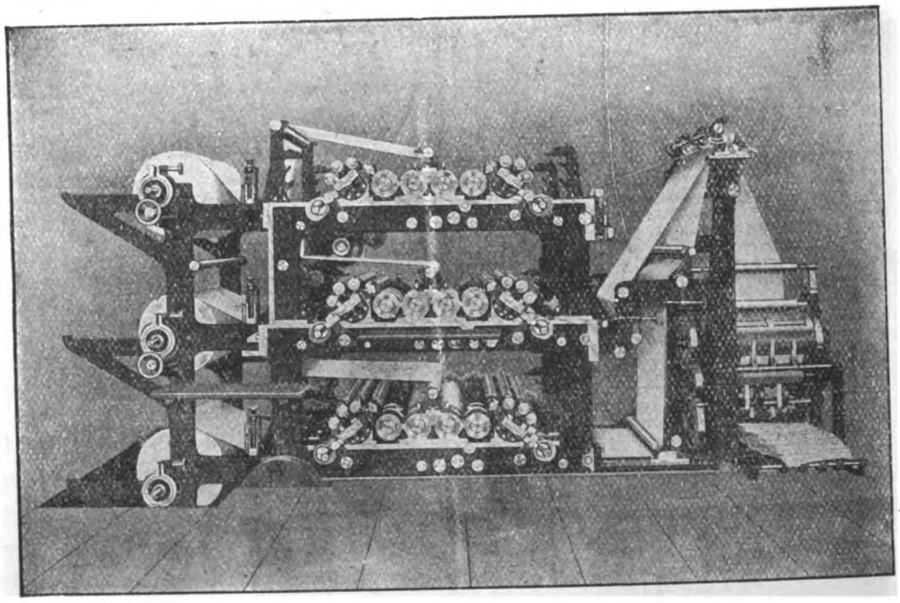

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Telephone No. 7

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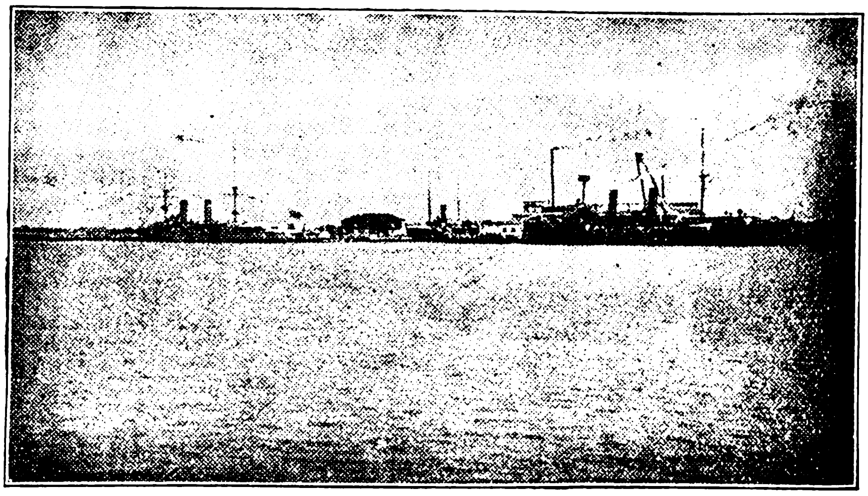

VIEW OF INTERNATIONAL DOCK
showing "M. S. Dollar" in Dock and the Chinese Cruisers "Hai Chi" and "Hai Yung" alongside Dock Co's. Wharf.

## Boilermakers, Dock Proprietors, Shipbuilders, Engineers and Electricians

FIFTEEN REVENUE CRUISERS BUILT FOR THE QUARTERMASTER'S DEPARTMENT U. S. ARMY—MANILA, P. I.

**The Model was exhibited at St. Louis Exposition and awarded the Gold Medal in 1904**

The Sea-going Salvage-vessel "General Weeks" 148 feet long Built for the same Department, in 1910

**Low Pressure Hot Water and Steam Heating Installations**

The Docks are five in number, ranging in length from 355 feet to 532 feet on the Blocks, and breadth of entrance from 53 feet to 77 feet, with a depth of water on the sill of from 16 feet to 24 feet.

The Dock charges are the most moderate in the Far East

The Company's Yards and Docks cover 96 acres. The Water Frontage is about 1½ miles in length. Wharves and Pontoons are arranged where steamers can moor during repairs; and slips for hauling up small vessels are provided. Sheer legs capable of lifting 65 tons are placed at the various Docks.

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Light railway lines are laid throughout workshops and yards.

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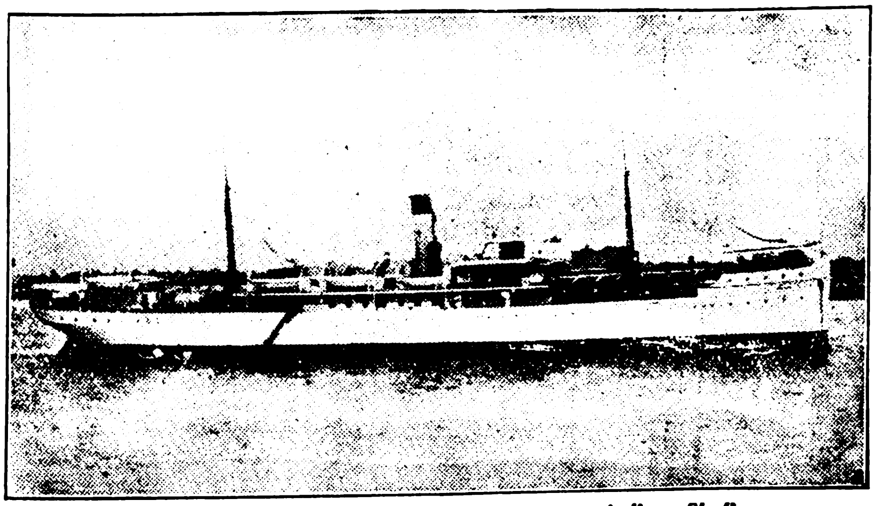

U. S. ARMY TRANSPORT "MERRITT" 300' 0" X 45' 0" X 28' 3"
Built for United States Government in 1912.

**PARTICULARS OF DOCKS**

Able to accommodate any vessel that can reach Shanghai

| Names | Length on Blocks | High Water: Breadth of Entrance | High Water: Depth of water on Sill |
|---|---|---|---|
| Cosmopolitan Dock | 532 feet | 77 feet | 24 feet |
| International Dock | 528 „ | 77 „ | 23 „ |
| New Dock | 450 „ | 74 „ | 21 „ |
| Old Dock | 399 „ | 53 „ | 18 „ |
| Tunkadoo Dock | 350 „ | 67 „ | 18 „ |

**Berths for Building Steamers of any Size**

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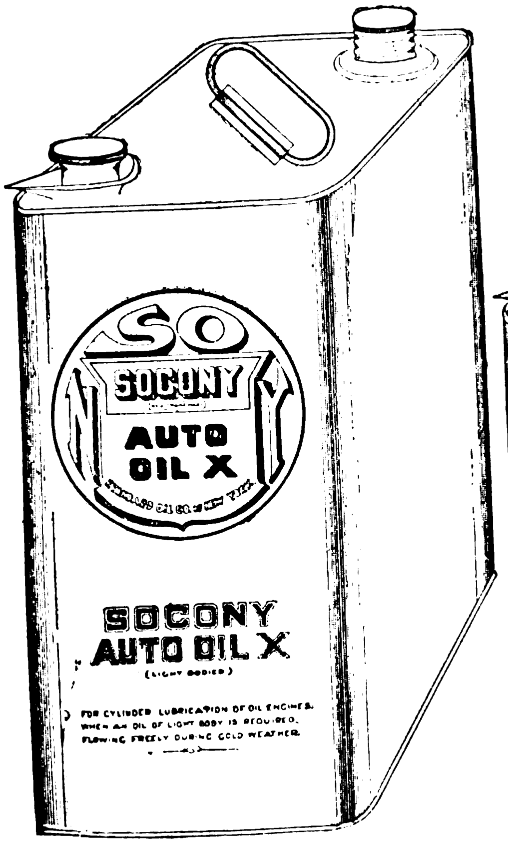
# SOCONY AUTO OILS SAVE WEAR REDUCE FRICTION

**Friction costs more than oil.**
**Horse-Power is Energy.**
**Do not waste it.**




(Light Bodied)
For cylinder lubrication of oil engines when an oil of light body is required flowing freely during cold weather,

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For cylinder lubrication of oil engines. It holds its viscosity under extreme heat and will not gum. Should this oil be found insufficient in body for the tropics we recommend our Socony Auto Oil XXX.

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Socony Oils are scientifically prepared and designed to meet the needs of the Motorist. They afford the degree of lubrication necessary to the maximum performance of the motor.

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**BRANCHES IN ALL PRINCIPAL CITIES IN CHINA.**

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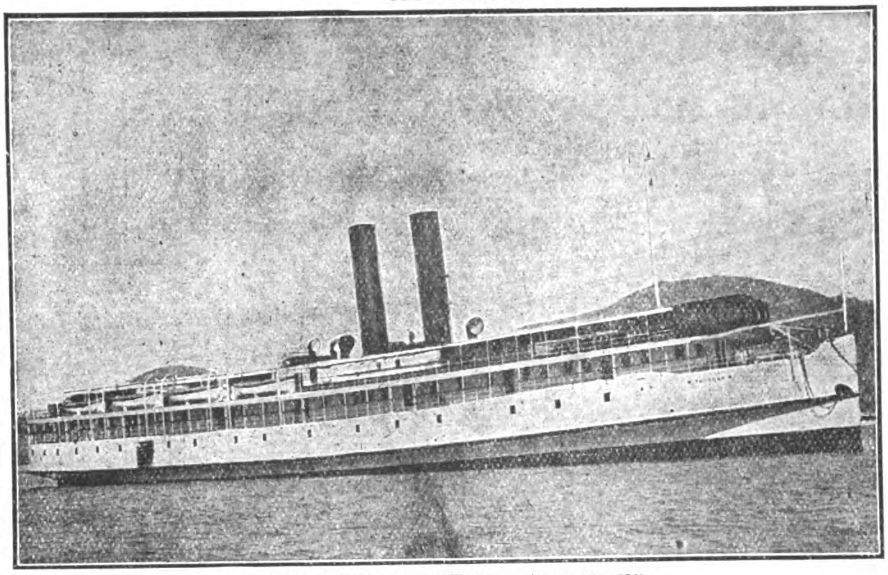

TWIN SCREW RIVER STEAMER "TAI SHAN"

Length 290 ft. Breadth 53 ft. Depth 12 ft., fitted with Compound Surface Condensing Engines for a speed of 14.7 knots.
Built and engined complete by the HONGKONG & WHAMPOA DOCK CO., LTD. for the HONGKONG, CANTON & MACAO STEAMBOAT CO. LTD.

The Dimensions of Docks and Slips are as follows:—

| Name of Dock or Slip | Length on Keel Blocks | Entrance Breadth | Depth Over Sill at Ordinary Spring Tides | Rise of Tide | |
|---|---|---|---|---|---|
| | | | | Springs | Neaps |
| **KOWLOON** | Feet | Feet | Feet | Feet | Feet |
| No. 1 Dock, Kowloon . . . | 700 | 86 ft. top / 70 ft. bottom | 30′ | 7′ 6″ | 3 |
| No. 2 Dock, Kowloon . . . | 371 | 74′ | 18′ 6″ | 7′ 6″ | —— |
| No. 3 Dock, Kowloon . . . | 264 | 49′ 3″ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 1, Kowloon . | 240 | 60′ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 2, Kowloon . | 220 | 60′ | 12′ | 7′ 6″ | —— |
| **TAI-KOK-TSUI** | | | | | |
| Cosmopolitan Dock . . . . | 466 | 85′ 6″ | 20′ | 7′ 6″ | —— |
| **ABERDEEN** | | | | | |
| Hope Dock . . . . . . . . | 430 | 84′ | 23′ | 7′ 6″ | —— |
| Lamont Dock . . . . . . | 333 | 64′ | 16′ | 7′ 6″ | —— |

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**Telephone No. 13 K. Head Office, Kowloon.**

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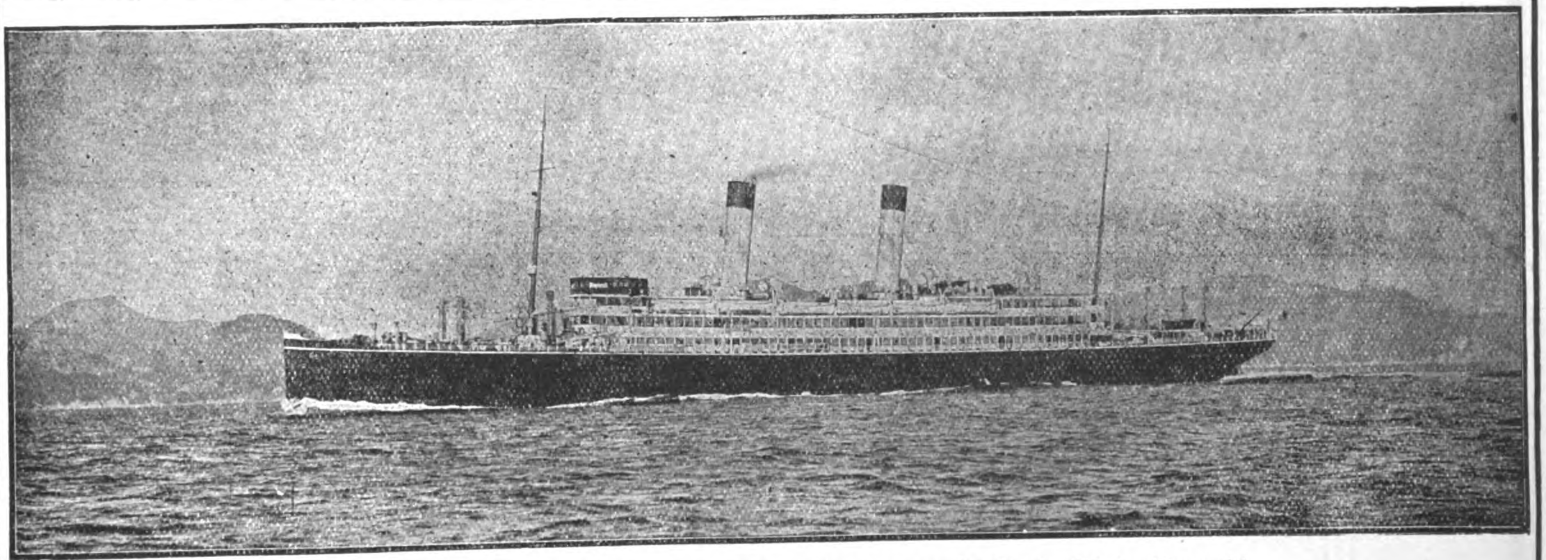

The "Tenyo Maru," built and engined by the Mitsu Bishi Dockyard & Engine Works, Nagasaki.

# MITSUBISHI DOCKYARDS & ENGINE WORKS, NAGASAKI

**DOCK No. 1.**

| | | |
|---|---|---|
| Extreme Length . . . . | 523 | Ft. |
| Length on Blocks . . . . . | 513 | " |
| Width of Entrance on top . . | 88 | " |
| " " " Bottom | 77 | " |
| Water on Blocks at Spring Tide | 2 ½ | " |

**DOCK No. 2.**

| | | |
|---|---|---|
| Extreme Length . . . . . . | 371 | Ft. |
| Length on Blocks. . . . . . | 360 | " |
| Width of Entrance on top . . | 66 | " |
| " " " " Bottom. | 53 | " |
| Water on Blocks at Spring Tide | 22 | " |

**DOCK No. 3.**

| | | |
|---|---|---|
| Extreme Length . . . . . | 722 | Ft. |
| Length on Blocks . . . . . | 714 | " |
| Width of Entrance, top . . . | 99½ | " |
| " " " Bottom. . | 88½ | " |
| Water on Blocks at Spring Tide | 34½ | " |

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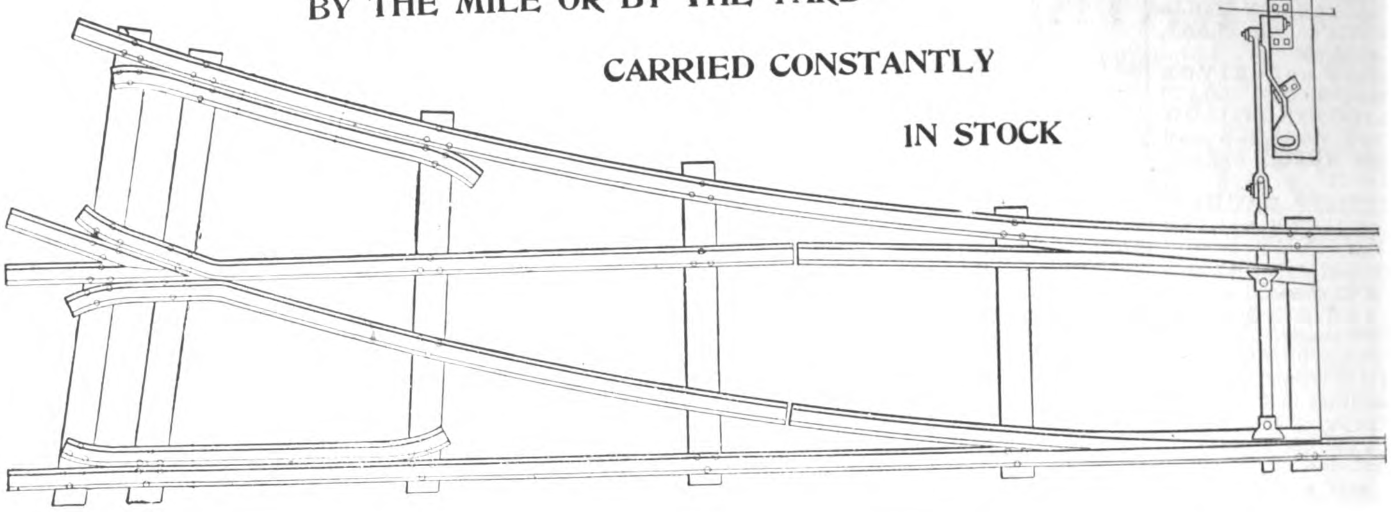

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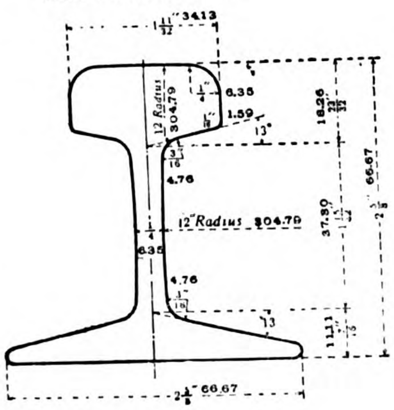


20 lbs. per yard.
9.92 kg. per meter.
31.43 gross tons per mile of single track.
19.84 tonnes per kilometer of single track.

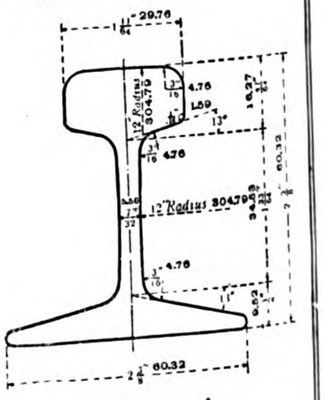
168 ft. of single track per gross ton.
50.4 meters of single track per tonne.

**United States Steel Products Company**

**Union Building, 4 The Bund,**

**Shanghai.**

RAIL SECTION 1640



16 lbs. per yard.
7.94 kg. per meter.
25.14 gross tons of single track per mile.
15.88 tonnes per kilometer of single track.
210 ft. of single track per gross ton.
62.97 meters of single track per tonne.

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## PATENT WATER-TUBE STEAM BOILERS

**11,800,000 H. P. Land-type 3,800,000 H. P. Marine-type insta'led or on order**

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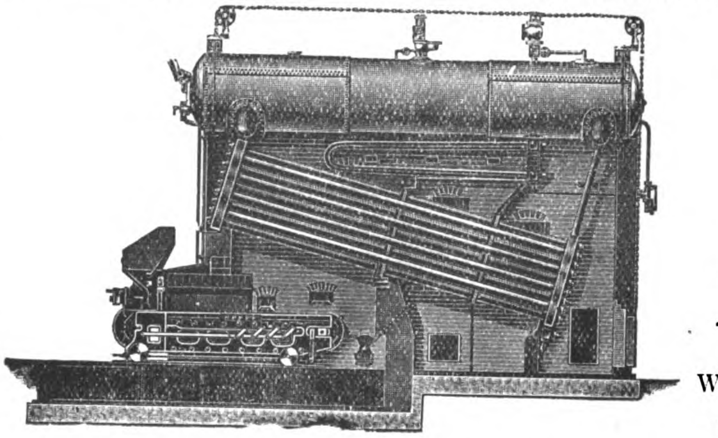

**BABCOCK & WILCOX LAND BOILER, fitted with Patent Superheater and Chain GrateStoker**

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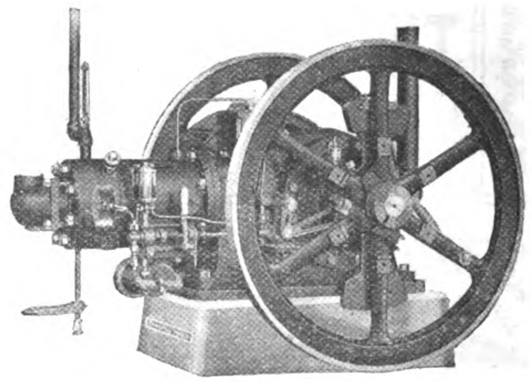

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*5 JINKEE ROAD*
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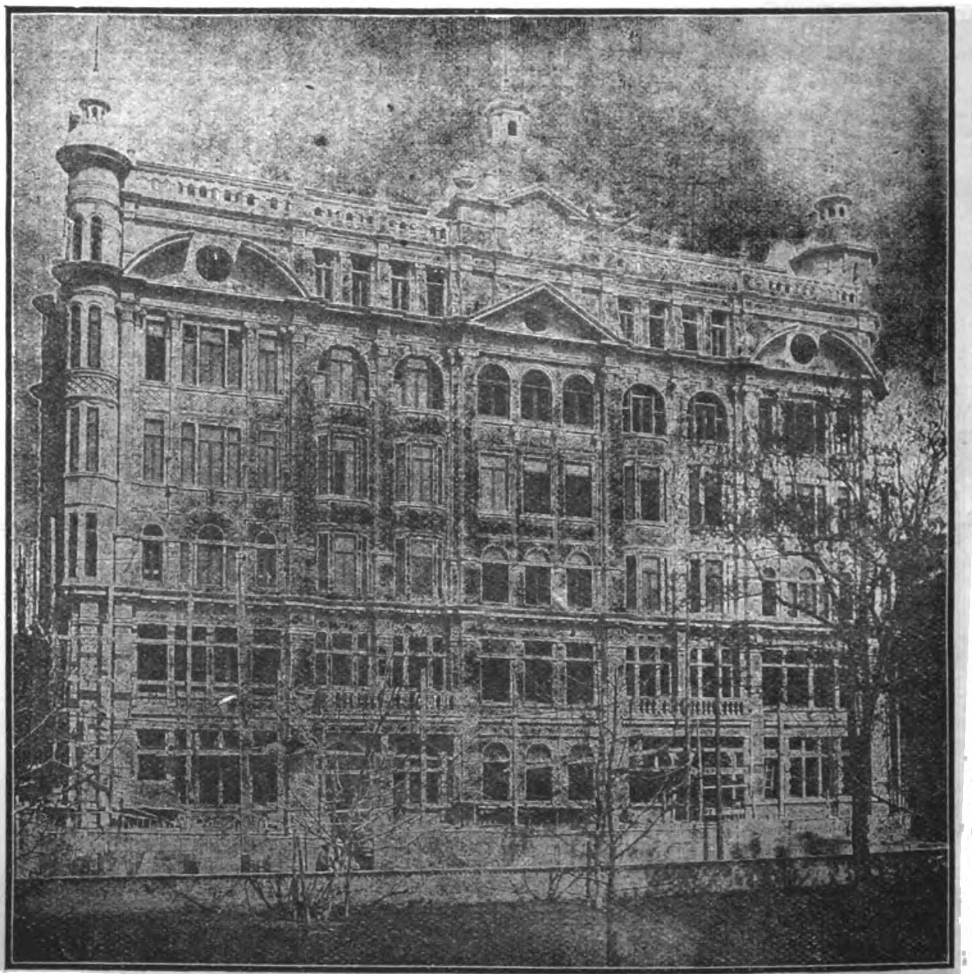

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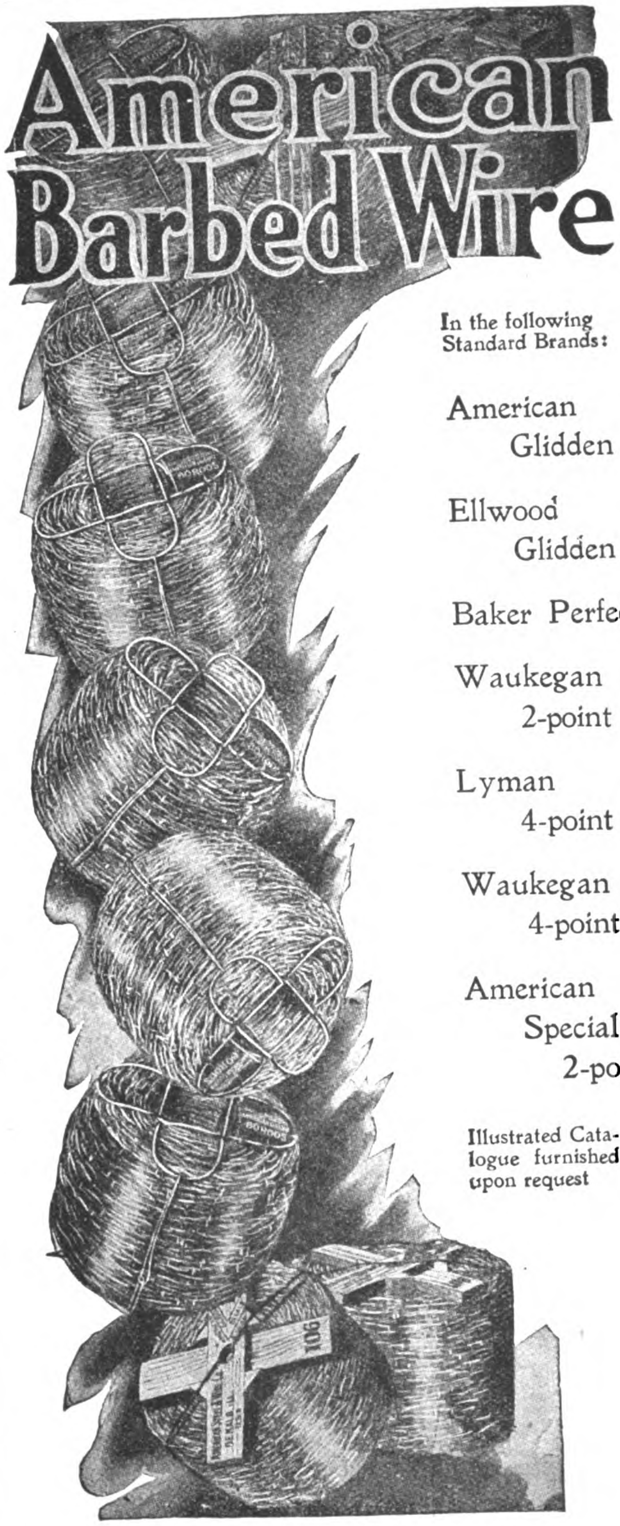


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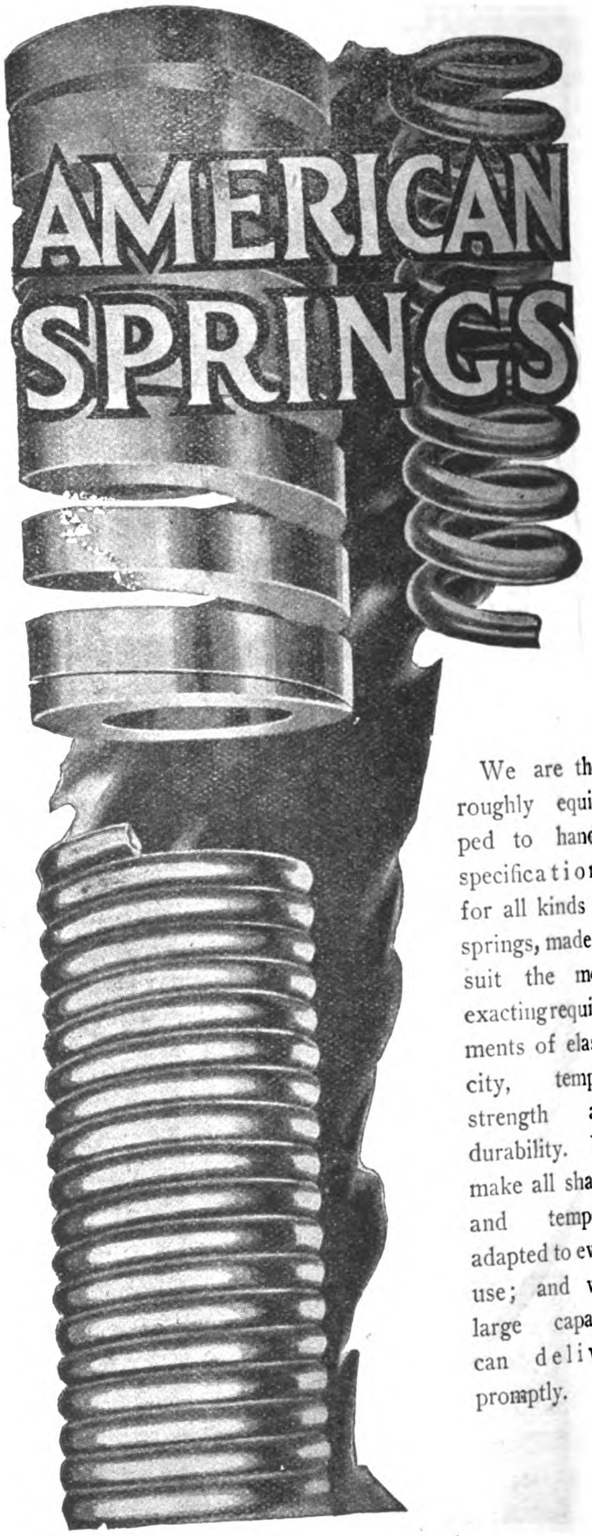


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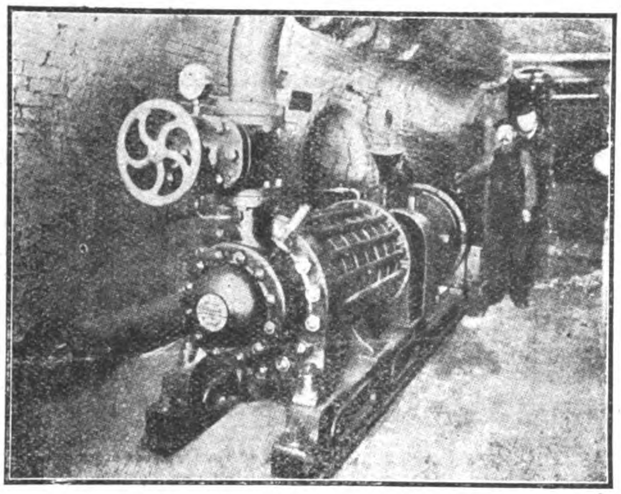

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NUMEROUS pumping plants, installed by us, have been running for years without having been opened out or requiring any expenditure for repairs.

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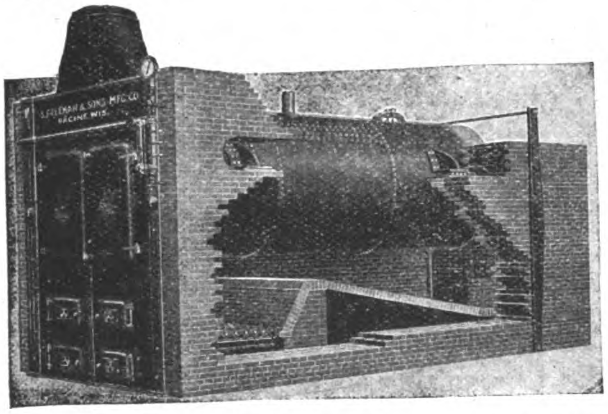

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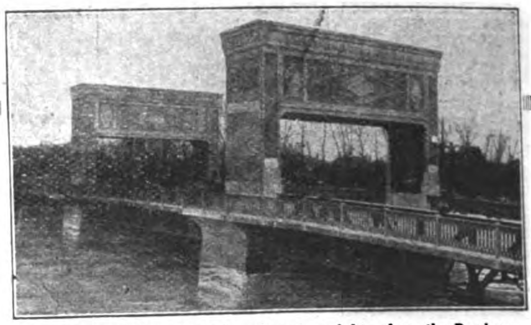

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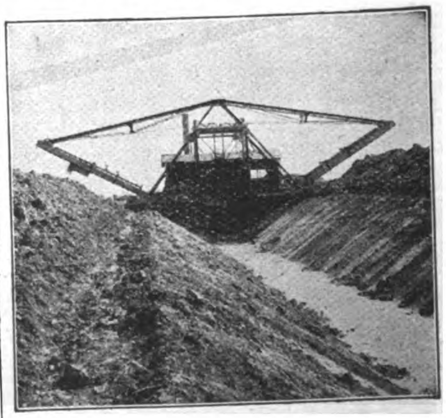
*The AUSTIN Drainage Excavator*

digs, in one operation, a clean ditch, conforming to plan—true to line, grade and cross-section, with sloping banks, clean berms, and spoil embankments finished exactly as desired.

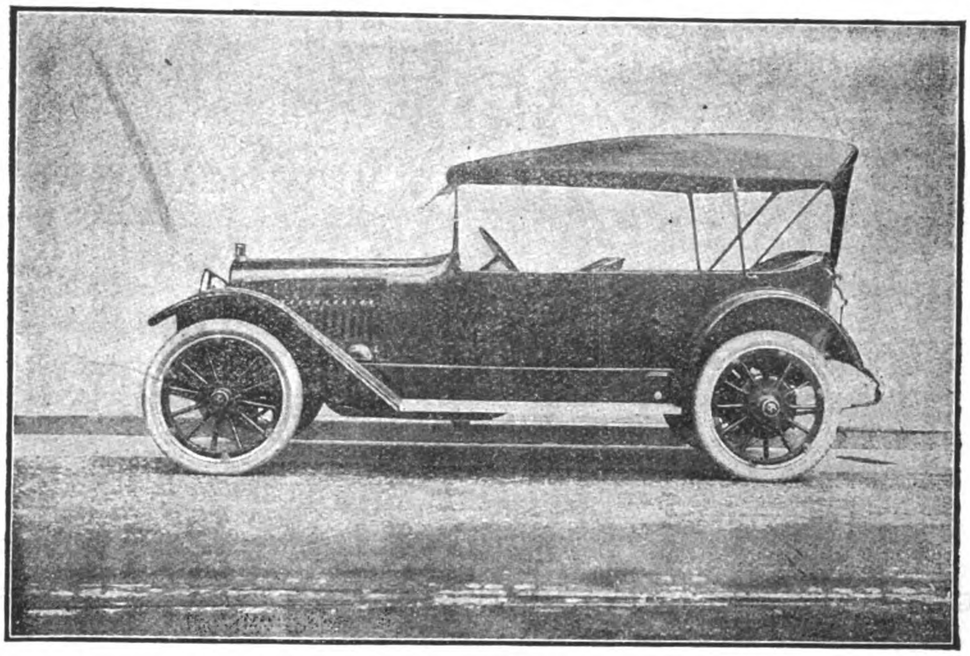


There are Austin Trenchers and Excavators in many sizes and styles for the construction of **Open Ditches**—for drainage or irrigation—and of **Canalization Systems**—for sewer, water and gas pipe mains.

*Write for Complete Catalogue "L.F."*
When writing describe proposed work, giving dimensions of ditches and character of soil.

**F. C. AUSTIN Drainage Excavator Company,**
Railway Exchanges, Chicago, U.S.A.
Cables: "EXCAVATOR, CHICAGO."
Codes: LIEBERS, A.B.C., Fifth Edition, and Western Union.

# HUPMOBILE



## Hupmobile Reputation Is Our Biggest Asset

¶ We believe the Hupmobile to be the best automobile of its class in the world and what we believe Hupmobile owners all over the world know.

¶ That is Hupmobile reputation.

¶ Ask anyone who knows cars, whether Hupmobile owner or not, and he will tell you two things.

¶ First, that the Hupp Motor Car Corporation has never brought out a poor car.

¶ Second, that any Hupmobile model is a wonderful value for the money.

¶ A study of our specifications, a tour through our factory, an enumeration of the tests we employ to insure quality in material and workmanship, all prove one thing; namely, that we are not blind or boastful when we say that "we believe the Hupmobile to be the best automobile of its class in the world."

### BRIEF HUPMOBILE SPECIFICATIONS

Hupmobile Models: 5-seater, 7-seater, 2-seater, sedan, and 5-seater and 2-seater with detachable winter tops. Motor: Four-cylinder, 95 m/m bore, 140 m/m stroke. (3¾″×5½″). Transmission: Three forward speeds and reverse; multiple disc clutch. Rear Axle floating type, spiral bevel gear, Cam shaft and crank shaft bearings bronze shell, babbitt lined. Long wheel base (119″ on 2 and 5-seater, 134″ on 7-seater), Tyres 880×120 m/m or 34″×4″ on 2 and 5-seater, 920×120 m/m or 35″×4½″ on 7-seater. Electric starting and lighting; ventilating, rain vision screen; one-man hood; quick-acting side curtains; door curtain carriers; deep upholstery; speedometer; robe rail, foot rail and carpet in tonneau; non-skid tyres on rear; five demountable rims; tyre carrier, pump, jack and full set of tools. Magneto ignition, wire wheels, special colors khaki hood and seat covers at small additional cost over list price of car.

## HUPP MOTOR CAR CORPORATION

Detroit, Michigan, U.S.A.

Dealers for all China, except Peking (Chihli Province)

## The Central Garage Co., Ltd.

SHANGHAI

# THE J·G·WHITE COMPANIES

**J. G. WHITE & COMPANY, INCORPORATED**
FINANCIERS

**THE J. G. WHITE ENGINEERING CORPORATION**
ENGINEERS–CONTRACTORS

**THE J. G. WHITE MANAGEMENT CORPORATION**
MANAGERS–OPERATORS

43 EXCHANGE PLACE . . . NEW YORK

CHICAGO LONDON SAN FRANCISCO

TRADE MARK.

# ALLEN'S STEEL

*If you want*

Ball or Tube Mills
Balls (Forged Steel)
Castings (Steel up to 10 Tons)
Cement Making Plant
Coal Handling Plant
Conveyors
Crossings (Rly. and Tmy.)
Crushers (Ore and Stone)
Disintegrators
Dredger Buckets
Dredger Pins and Bushes
Elevators
Files
Gearing (Machine Moulded)
Grinding Machinery
Hydraulic Cylinders
Kilns, Rotary
Manganese Steel
Mining Machinery
Ore Crushing Plant
Points, Rly. and Tmy.
Portland Cement Plant
Pulverizers
Rails, Manganese Steel
Rock Drill Steel
Saws, Circular
Separators, Air, Magnetic
Stamp Shoes and Dies
Steel, Tool, High-Speed, &c.
Stonebreakers
Tramway Trackwork
Twist Drills, High-Speed
Wheels, Loco, Colliery, &c.

*We make them, so write for our Catalogues.*

## EDGAR ALLEN & CO., LIMITED

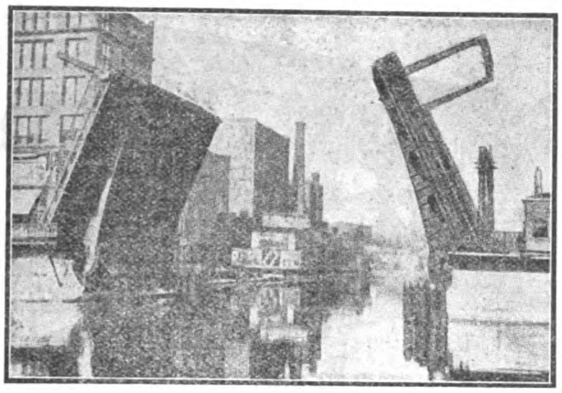
IMPERIAL STEEL WORKS,
**SHEFFIELD.**

*Indents through home merchants receive special attention.*

JAPAN BRANCH. 2 MITSU BISHI BUILDINGS, 1 YAESU-CHO. TOKYO.

# 美國司屈氏吊橋公司廣告

The Strauss Bascule Bridge Co.



本公司專造搖汽筒空樞吊橋及直接升降各橋專爲康莊鐵道以及可航行之海道而立計全地球所造者不下一百五十具最長最大之跳開橋其建築仿法悉本于司屈氏之圖樣卽小而至于居家之過街及裝飾品用之物亦取法于司屈氏

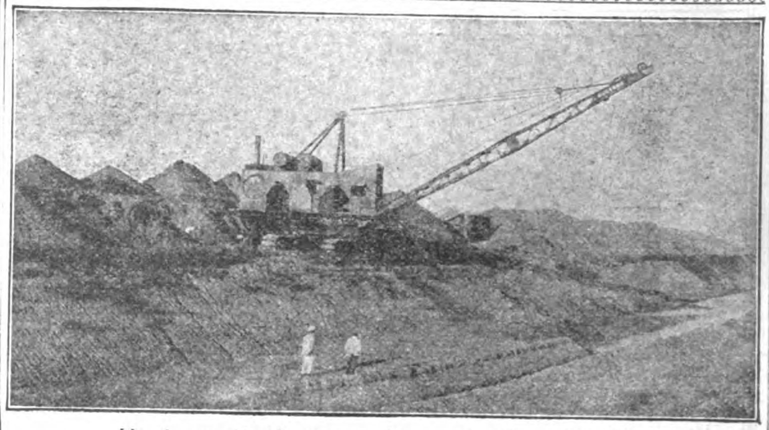
諸君若欲照片樣本可來函索取無不寄奉

本公司總行開設美國雪加可省南米西干通路第一百另四號

本公司擬在遠東聘請代表

# 白賽老氏公司廣告

Bucyrus Dragline Excavator Co.



諸君欲闢水利請用白賽老氏之聯結鏈挖鑿機

此圖爲第十四號白賽老氏聯結鏈挖鑿機有六十呎之機杠及二立方碼之桶挖鑿俄國高加索司之老河者細閱此圖則該機乃裝置於牽拉機上以便運動此機之生火力用油用柴均可

此機爲俄政府所有之物

白賽老氏聯結鏈挖鑿機專備挖掘陰溝疏通河道裝卸礦苗存積物及開金礦裝載石子建造世界各處之鐵道

是項機器用汽用電用油均可使其運動

本公司亦造各種大小之汽鏟電鏟挖泥機及聯結鏈挖鑿機器

總公司開設美活司考信

分公司 英國韋思名得司 暹羅國及馬來聯邦

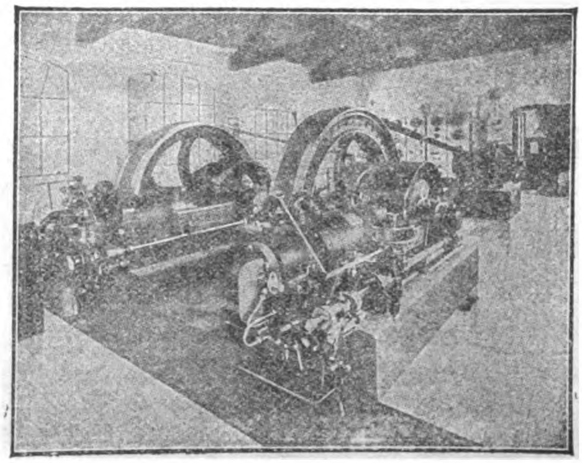
# 費耳庭栢來脫公司廣告

Fielding & Platt, Ltd.

本公司創始於一千八百六十八年

本公司亦造生油汽機半狄色耳平形式之機器其用油與狄色耳同自十一匹輪盤馬力至一百六十四輪盤馬力

此項機器無庸水注入



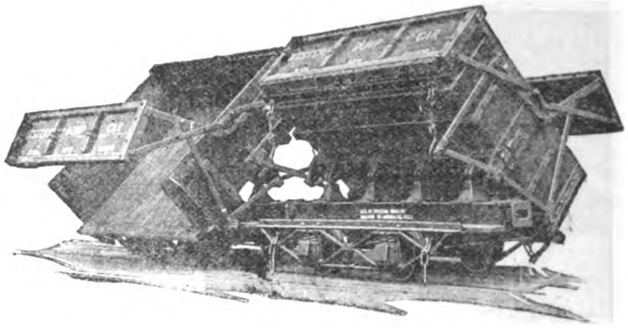
此爲電氣房內裝有費耳庭吸力煤氣汽機及生油汽機兩相並立之圖

製造吸力煤氣汽機及全副機件用白煤或焦煤均可業於此者不下數千人汽機自十一匹輪盤馬力至三百匹輪盤馬力

本公司亦造橋樑底標量制器俱單輪及第三軸枕平衡曲拐

# 西方輪軸剷物機公司廣告

WESTERN WHEELED SCRAPER COMPANY



此圖爲西方五碼卸貨車爲人所重視曾經試驗實有效用

此爲六立方碼之車以驢兩頭拖拉在污泥天工作之圖

機器較省於人工此人所共知也本公司之西方卸貨車可省卸人工不少可爲諸君省費諸君曷勿試用之諸君欲興築土工以及挖鑿等事若欲事半功倍除非用西方卸貨車因價廉而物美故也且該卸貨車可隨工作之大小而製成之自半立方碼至三十方碼○其大號者即以空氣卸貨爲建造鐵道最有價值之機器開鑿巴拿馬運河用此機器有九百輛之多○其小號者則專以卸輕巧之貨物用小汽機拖拉甚爲便宜即用牛馬亦較一工人卸貨快速易辦也上圖爲本公司之一碼半西方車正在卸貨以驢子拖拉一千二百呎

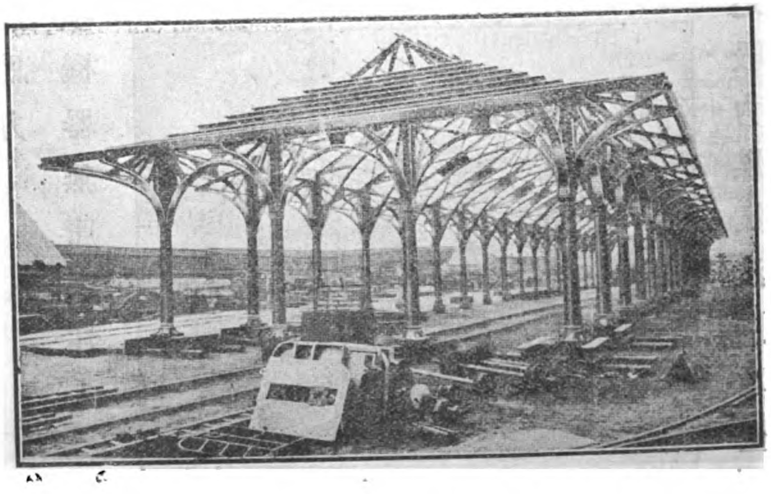
西方卸貨車全球著名亦爲全球所購用諸君若欲知詳細請來信索取圖樣可也

本公司開設美國伊立拿省奥列羅

# 海特雷脫生公司廣告

Head, Wrightson & Co., Ltd.

本公司有大廠三所專造煤礦場及各礦場所用之物及裝煤船貨車起重機風箱冶汽爐船塢門等橋坑總齒輪鋼質貨車屋頂煙筒油池之類



此圖乃香港之車站其屋頂爲本公司所建造本公司爲英國大廠之一每年出鑄件十萬噸出機器一萬七千噸且爲中國印度日本包辦各項工作

# 西北展張鐵片公司廣告

North Western Expanded Metal Co.

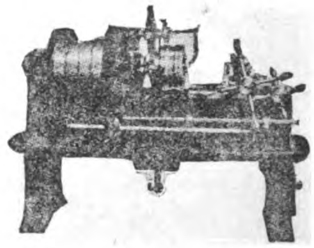
本公司製造哪白兒展張鉄片專爲近世築造之鋼屋內部所用以上之圖爲美國芝高哥城最大最新近之大廈其內部及底盤均爲本公司所製之哪白兒展張鐵片條板所造蓋以之作底盤其價甚廉以之作墻則耐久因哪白兒牌之條板爲惟一之建築品且爲全球所公認推爲內外建築特別品之標準若用於熱帶處

所用以作墻及天花板底則更相宜蓋其性耐久而不曲且不笨重易於運輸且避水患此項展張鉄片條板業經由五洲各大建築家實地試驗防熱避風火暴雨等危險實爲建築家所不可少之物

今敬告建築家若欲建造房屋無論何時何地何物先請察驗哪白兒牌之展張鉄片條板本公司備有說明書請來函索取可也

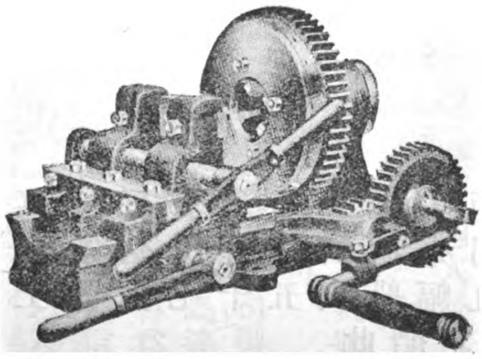
# 英國約書亞西潑有限公司

Joshua Heap & Co., Ltd.



本公司專造製螺絲機器此圖爲二吋單頭自動製螺絲機器爲多頭製螺絲機器之一曾註册立案爲近世最省工力之機器備有柄頭及自動開機連於螺形頭上及自動關機幷配製螺絲各俱無不靈動本公司所出之註册鋼質螺絲模型爲市上所罕有蓋質地堅實螺絲板易於拆卸且全體皆爲良工所製並無發條或輕脆之料作摻雜其間

此圖爲改良通用之製螺絲機器可製螺絲管彎曲短小之件如對徑二吋大小之物或釘捎對徑二吋半等物均可製造近年來銷數已達二千五百架其大者如對徑八吋之物亦可製造此項機器電力與人力均適用若欲知詳細請來函索取目錄爲禱

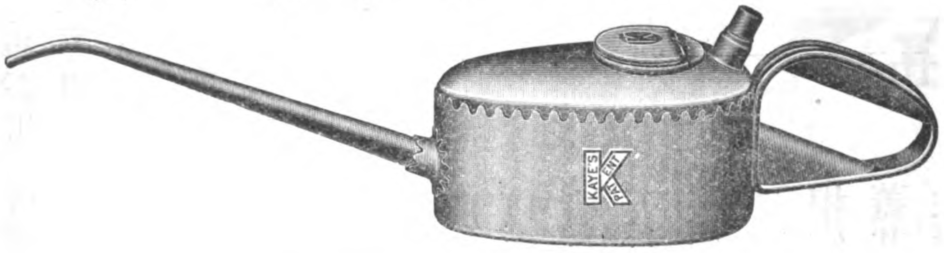


☞ 克耶鎖鍵工廠露佈 ☜

Joseph Kaye & Sons Ltd., Lock Works, Leeds.

本公廠專製車門鎖鍵滑門門門精巧門鐶門鎖及門閂等以應各種用品且製造鋸齒形無縫之純鋼油管承經註册專賣爲英國之出品供應於英國水軍者不下六萬只大西鐵路大北鐵路蘭克省及雅克省間之鐵路倫敦及西南鐵路南斐洲及印度國有之鐵路均用此純鋼油管盛油也倘承不棄請來信定購是幸

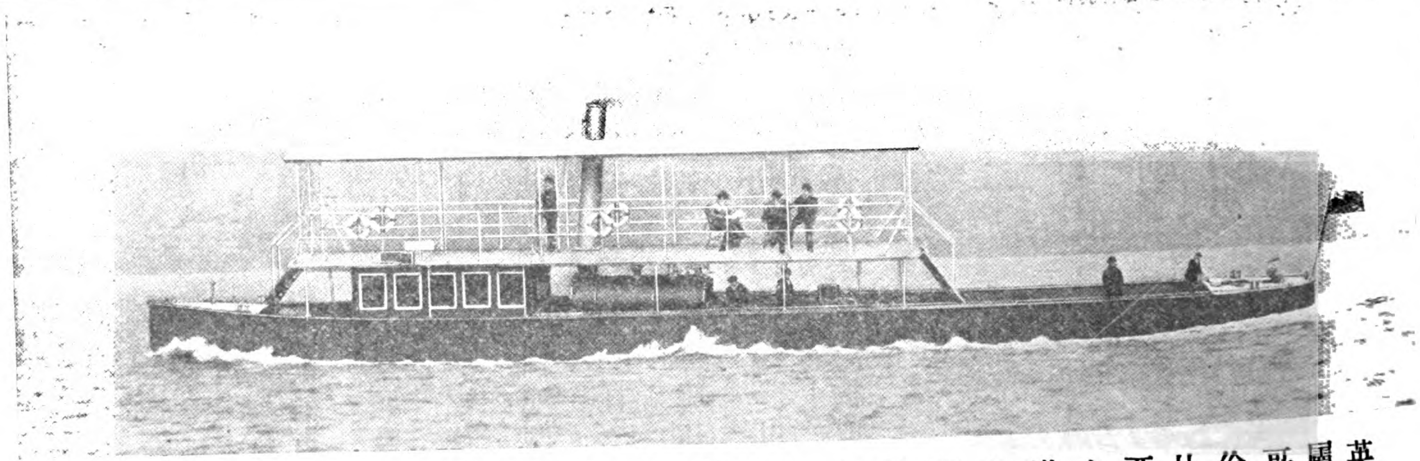
工廠開設於英國离池




耶羅式淺水船爲搿來司高地方之耶羅

有限公司所造即曩昔之倫敦拍潑拉耳

YARROW & CO., LTD., Glasgow.



英屬哥倫比亞之維多亞地方之耶羅有限公司專造船隻修理船隻

以及營造等事爲搿來司高之耶羅有限公司之聯合會社

上圖長七十五呎船幅九呎三叶吃水十二叶速率每小時十英里

此船之全部份均可運往世界各處

耶羅公司建造快式客船商船淺水輪船拖船等不論用船尾輪或船

邊輪或用螺絲連結於烟通者即耶羅注册之鉸扇無不推動合度

# 英國海來司溫鋼公司廣告

Halesowen Steel Co., Ltd.

本公司專造鋼質砌機有HS牌號均爲自動機器脫力脫車床等等所製成若欲定做其尺寸不誤大小隨便現下存貨長自九呎至十呎若圓形或六角形或方形均可製造并製各種輪軸不拘大小長短均可定造若承賜顧定購照式製成無不完美特別本公司每月出貨有二萬之數

本公司開設

英國海來司溫

# 美國反白司公司廣告

Fairbanks-Morse Railway Motor Cars

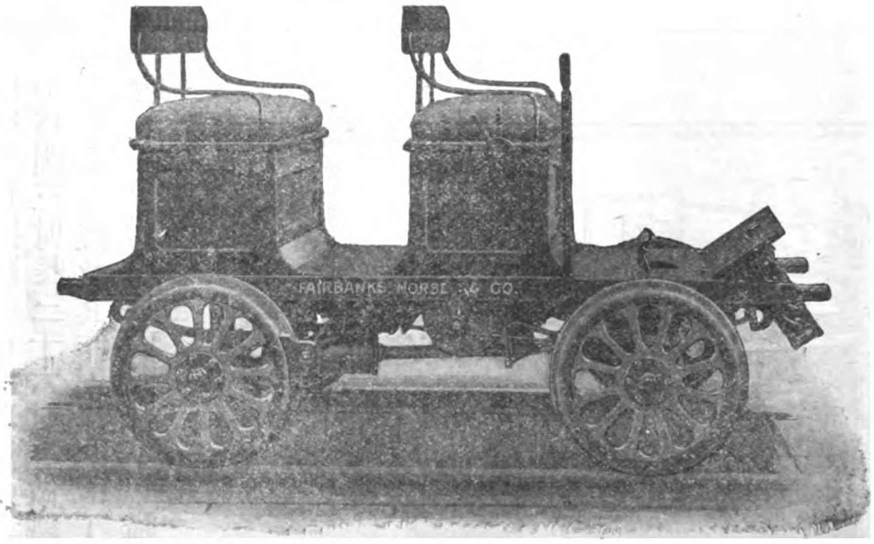
本公司專造鐵路材料煤油馬達車手車推車自行車暨管煤棧轉盤活動橋抽機用煤油或礦蠟油或火酒均可

幷製軌道規水平尺牛欄軌道器俱以及各種材料以上所列各種其製造之原料爲美國及他國幷各植民地之鐵道取之爲標準者也

請來索目錄第九五六RS

本公司開設美國芝加哥

經理處 上海信亨機器洋行　香港天祥洋行　小呂宋太平洋商務洋行　橫浜安德烈哲治洋行　加力革培克列司督洋行




反白司煤油馬達車爲查閱鐵軌之用鐵路人員乘坐最爲合宜蓋此車駕駛甚易車架爲鋼質所製容四人長可隨意三十六吋或過此呎吋亦可

本公司製造煤油馬達車全部專爲查閱鐵軌信號分段以及橋規

# 麥脫拍來脫輪盤抽機公司

Mather & Platt, Ltd. Turbine Pumps.

輪盤抽機爲本公司所發明且已有四十年之經驗故所出之抽機愈製愈精購用者無不樂用且無論高低均適於用此項抽機之動力或由馬達小輪汽輪速率之汽機或皮帶或繩索之力均可抽動

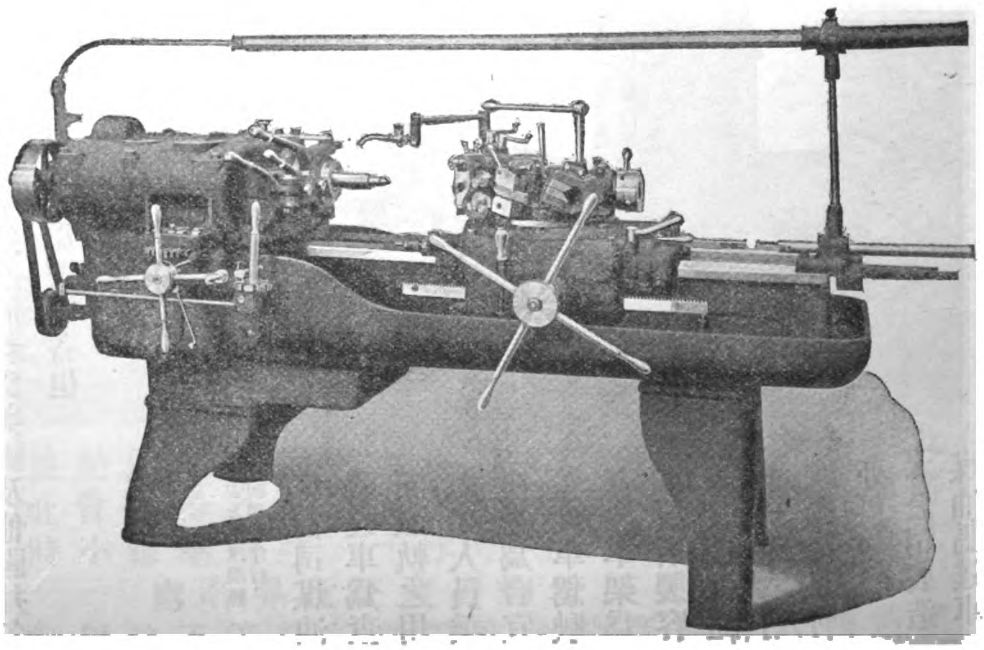
且一經試用則耐久非常不必再行查驗本公司所出之抽機通行於各處極多行試多年從未拆卸開視因本公司所製造之抽機美備洽意也

此項抽機有自動壓勻之力裝製齊備且可增減機內之空穴價格便宜若欲購用而知詳細章程者請來函索取目錄上圖爲六筒之抽機　頭長六百十二尺每分鐘可吸六百五十加侖每分鐘可轉一千四百五十次則所動之力乃藉馬達也

# 聾司蘭姆生機器公司

Jones & Lamson Machine Company.

此圖爲本公司所特之車床若能習學此機完美則得利可操勝劵也此車床爲車塔平面機其大小爲闊三吋長三十六吋專做鐵條柄軸等各種工件故此機及其作用　**能使工人幷機器加增出品**　因用是項機器不必購用價值高貴之



小另件配製工作也

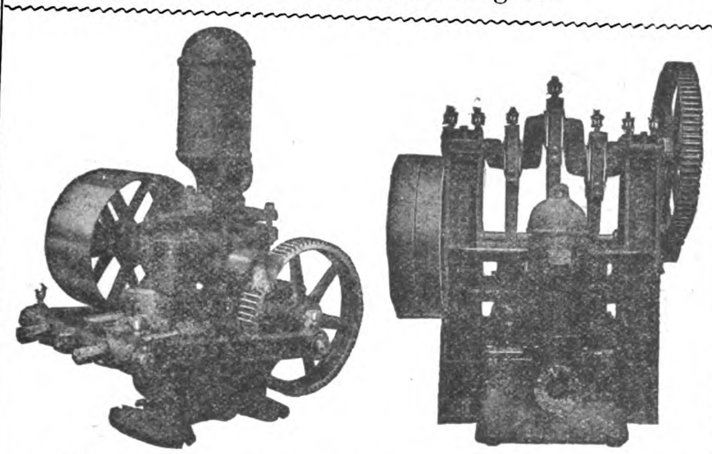
總之製造此種車床之目的　**即費一文錢得一文錢之利於購者有莫大之利益**

欲知詳細章程請來函索取不費郵資

**本公司開設** 美國活忙脫省司不林飛而特　英國倫敦維多利亞街九七號

# 美國顧爾機器廠

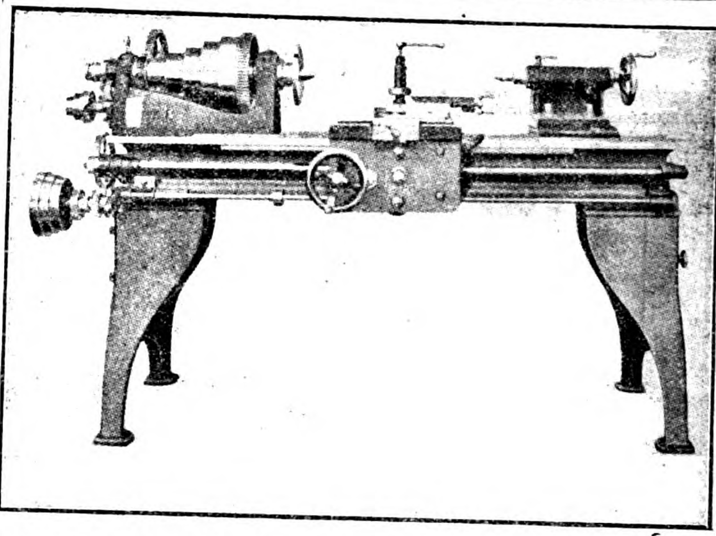
The Goulds Manufacturing Co.



本廠開設已久爲中外各國所馳名專造各種大小抽水幫浦其三角抽水機爲尋常各廠家所最爲合用之機尙有如保險公司所用最爲靈巧便利之轉動抽水機此項機器甚爲輕便備爲消防之用尤爲合宜故凡保險公司俱有備置因其得輕便之利也其餘如自來水廠船廠各機器廠並礦井內外所應用之大小各式抽水機器無不俱全本廠係專造各項抽水幫浦故比他家式樣更多製造尤爲完善凡中外各國之賜顧者悉知本廠機件之精良造具之美備也欲知詳細情形請移玉至本行接洽可也

中國經售處上海圓明園路四號協慎隆昌洋行

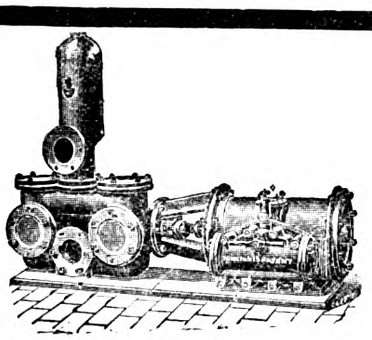
# 用電氣以節耗費



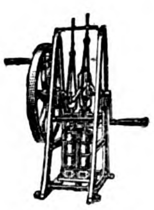
電氣一物利用甚溥用以裝修各項機器非特工作較人力爲速而耗費亦可節省因其出貨多而成事易也凡各機器廠欲裝置電氣馬托或鑽頭磨刀機無論活動與否均可使之流利活潑所需電力或交流或直流及電鎊之多寡均當隨意裝配賜顧諸君幸垂鑒焉

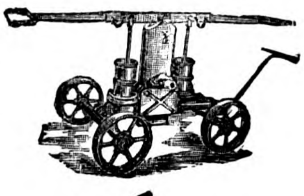
德國蜀赫廠啓

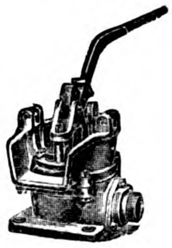
Schuchardt & Schütte

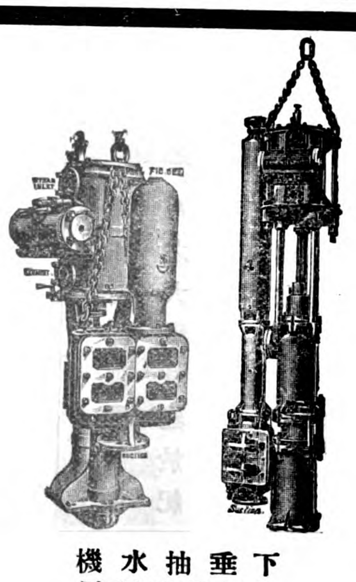


普通汽力抽水機

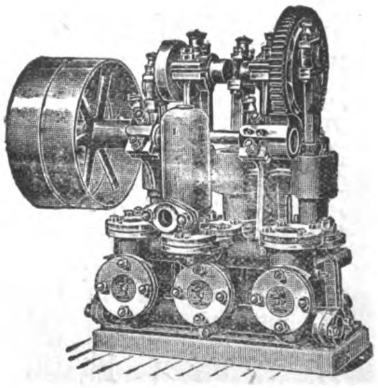


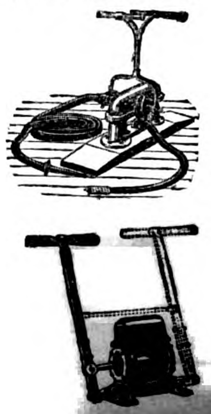






下垂抽水機
煤船煤礦所用





本公司製造各種抽水機專備工商各界採用各式全備不論使用何項動力如人工汽機皮帶風車水電各力之類均能適用如蒙函詢卽將東方目錄寄奉英國華亨頓城伊凡斯公司謹啟

Joseph Evans & Sons

# 美國展轆冶鐵工廠廣告

The American Rolling Mill Co.

新舊兩鐵釘之比較方形熟鐵釘可用三十八年鋼鐵釘可用十一年

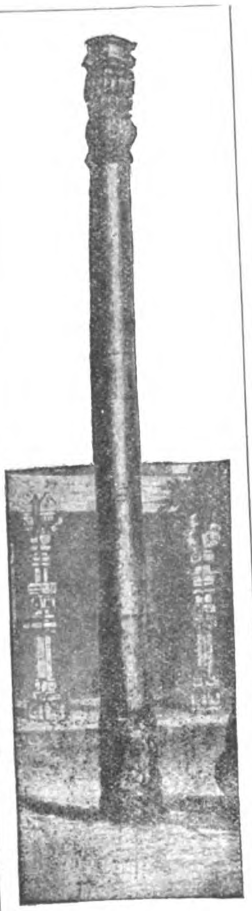
Agents for China
Chinese American Co.
1A Jinkee Road, Shanghai

Agents for Philippine Islands
American Hardware &
Plumbing Co.
Manila, P. I.

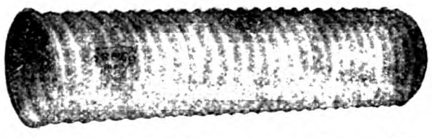
屋頂及屋旁引傳電氣之奧姆可縐紋鐵件

本工廠稟准國家立案爲萬國鐵廠所推許因所鑄之奧姆可鐵潔淨耐用夫鐵之爲物厥用甚大盡人皆知唯提煉不淨銹爛極易蓋異性之金類雜在一處一受空氣之潮濕卽發動電流化合力而銹爛乃起與電瓶同一理也故雜質去淨銹生自緩又製造各鐵條鐵板時若質地不匀及有微孔等弊亦爲生銹之原本公司製煉各種鐵器提煉旣極純淨製造又極精美稍有成分不足體質不淨者均摒棄重行提煉終以試驗及格爲度絕無苟且之弊本公司之宗旨專務精美不競競以出貨之多爲勝也圖中所載之鐵柱現在印度台里省係鑄於二千八百年以前考其所以能歷如許之久者亦不過質地純淨而已本公司卽本此意幷經各專門冶金工師悉心研究得完美之製造方法各界賜顧者請認明三角式商標決不致誤

本廠開設美國哇哈哇省
中國上海經理華美公司仁記路一號
得律風一千九百七十一號



此圖乃印度國特而希之大鐵柱建於紀元前九百年爲純鐵所鑄之柱



奧姆可縐紋鐵溝大道鐵路陰溝最適用貨眞耐用欲知目錄請來信索取可也

Hongkong & Whampoa Dock Co., Ltd.

## 香港黃埔船澳有限公司廣告

本公司承接製造各種機器鐵路火車橋梁河海明暗輪船拖船淺水火船載客運貨大小快捷毛打輪船舉凡一切水陸起重器機爐鑊鎔鑄銅鐵器具電鍍等等工程並常有大單銅鐵螺絲角鐵鋼板鐵板等料躉賣加以本公司置有大石澳六所旱排二座以便大小船艦入澳之用洵鉅製也

諸君光顧凡有船隻裝修無論大小工程莫不應期完備庶不妄費時日又且工精料美價亦相宜如蒙惠顧請問總司理人 R. M. DYER可也

茲將各澳地址尺寸開列於後

| 澳名 | 澳底長 | 澳口闊 | 水深 |
|---|---|---|---|
| 九龍第一號澳 | 七百尺 | 面八十六尺 底七十尺 | 三十尺 |
| 九龍第二號澳 | 三百七十一尺 | 七十四尺 | 十八尺六寸 |
| 九龍第三號澳 | 二百六十四尺 | 四十九尺三寸 | 十四尺 |
| 九龍第一號旱排 | 二百四十尺 | 六十尺 | 十四尺 |
| 九龍第二號旱排 | 二百二十尺 | 六十尺 | 十二尺 |
| 深水埔澳 | 四百六十六尺 | 八十五尺六寸 | 二十尺 |
| 香港仔第一號澳 | 四百三十尺 | 八十四尺 | 二十三尺 |
| 香港仔第二號澳 | 三百三十三尺 | 六十四尺 | 十六尺 |

本公司通電處乃用 MANIFESTO HONGKONG

香港寫字樓電話第二十號

本廠寫字樓電話第十三號K

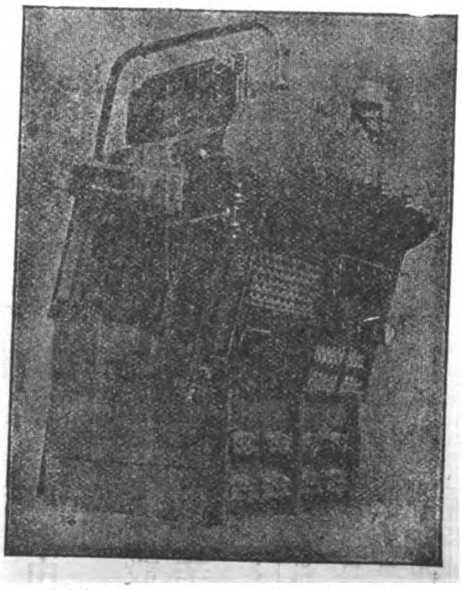
呂宋代理處 FINDLAY & CO., MANILA, P. I.

## 拔柏葛魏闊司有限公司

Babcock & Wilcox, Ltd.

### 製造特別水筒鍋爐

本公司陸地所用之鍋爐與加增熱力機器及最新自行燃煤之帶鍊機器係屬相連用之於電燈紡織麵粉造紙織呢兵工造幣礦務水泥自來水等廠最爲合宜



航海用之汽鍋圖

本公司專造加增熱力機器自行燃煤之帶鍊機器蓄熱機器電力起重機器起卸煤之機器鋼質烟囪及輪船軍艦所用之鍋爐等

公司之中國總辦事處在上海四川路一百零三號

製造廠設在英德法美等國

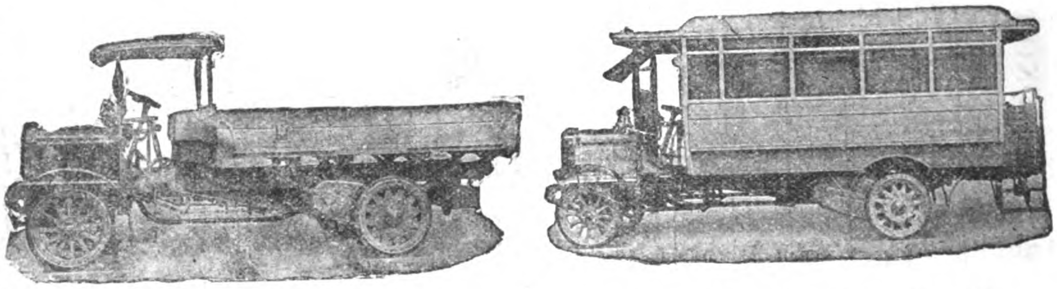
# 英國康模造車公司

Commercial Cars, Ltd., Luton, England

格言曰觀運輸機關之隆替足覘以國家之盛衰本公司專造工藝界及公家所用車輛工料堅實精良無比取價低廉如貨車灑水車救火車客車等均可

康模牌

車輛

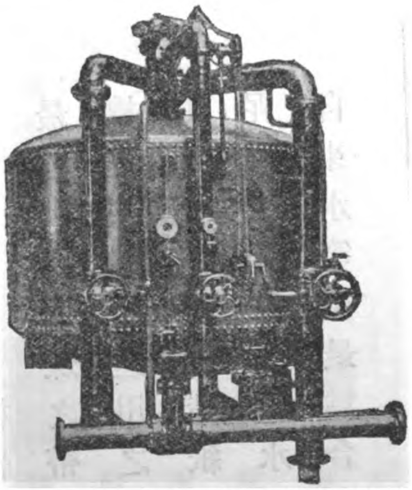


此種車輛裝有汽油機大小分爲十四號載重一噸至七噸載客十位至三十四位機器有二十至一百馬力

按式定造必能合意所裝油機燃燒煤油或汽油在東方應用最爲便適本公司總廠在英國勒頓城內英國康模造車公司謹啟

## 康狄濾水機公司廣告

The Candy Filter Coy. Ltd., Westminster, London.



用康狄濾水機費少而效用大蓋水一經濾過其色卽清光耀奪目康狄濾水機不論大小場所城鎮工廠或興業處所無不合用諸君若欲安置是項濾水機本公司之技師可以爲之打樣不取分文且必適合用度以致　諸君信仰本公司注册之濾水機幷各種方法以及各器俱包使存水處所以及各支流得以清潔勿污

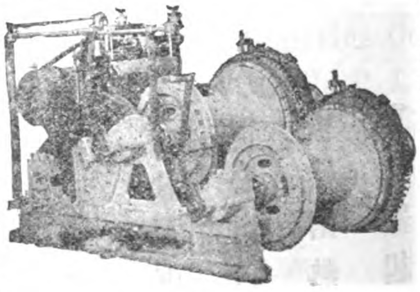
總行開設英京倫敦章思敏思得耳

中國經理上海九江路三號魏廷敦起水機器有限公司

## 立奇華製造公司廣告

Lidgerwood Mfg. Co.

本公司製造扯升機觕司令油或蒸氣或電汽於各處均適用所定造之機器及電升機已不下三萬六千具欲知詳細請來函示知



公司開設於美國紐約省自由街九十六號

歐洲經理處在英國倫敦京城

## 森茂司製造公司廣告

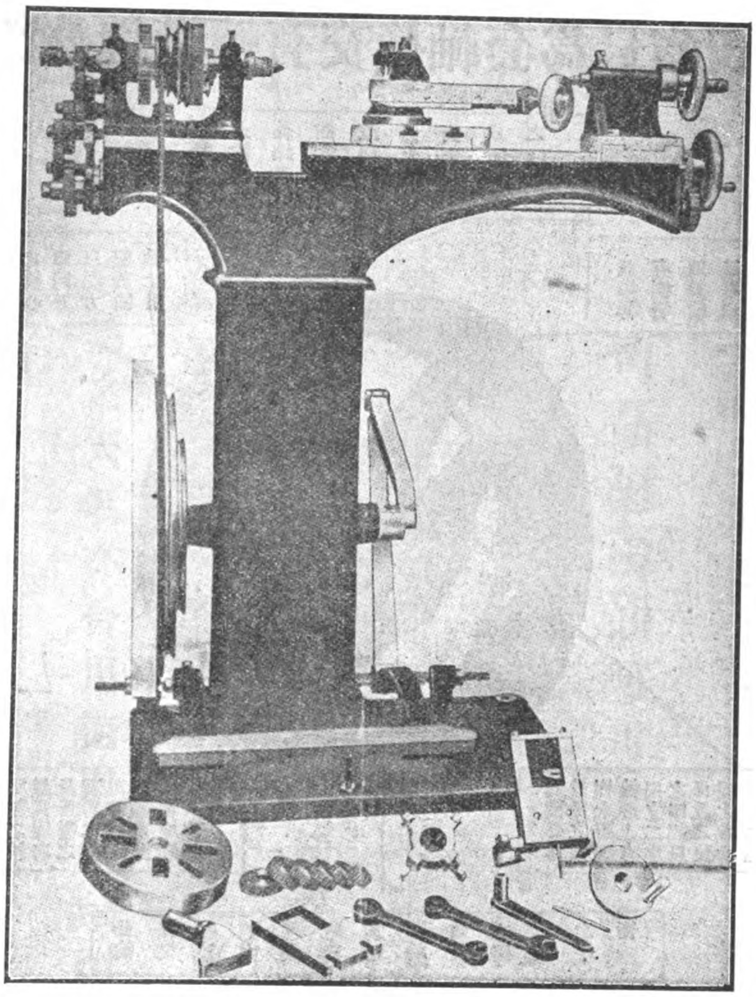
The Simmons Mfg. Simmons Bedsteads.

本公司專造床架爲全球最著名之鐵床廠之冠已有五十年之閱歷且所配料作均精美無匹質地堅實且合於各地之天時水土而款式及模樣爲各國所宜

若欲知詳細式樣請直接來函本公司索取或由經理人間接亦可

開設美國威司根辛省開諾息

# 怡和洋行機器房廣告



本行分設滬濱數十餘載專辦各種機器如下　鐵軌　車輪　車頭　紡織機　磨麪機　搾油機　碾米機　磚瓦　鋸木牀　造紙機　印書機　鎗礮　製革機　電燈　餅乾　火力引擎　煤氣引擎　火油引擎　鍋爐　發電機　開礦吸水機及馬達引擎等並常備現貨如下

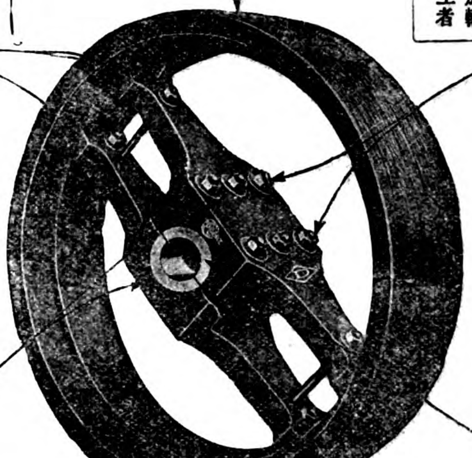
火力引擎　煤氣引擎　立式鍋爐　吸水機　手搖吸水機　大小車床　修機應用各件　淨茶機　紙百　配更　皮帶等其餘一切零件不及詳載倘蒙賜顧無不歡迎定價亦格外克己請至圓明園路本帳房接洽電話一零九六

Jardine, Matheson & Co.

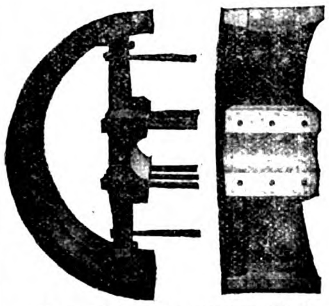
# 道治牌機器公司廣告

## 道治(獨立)木質分縫轆轤有交換軸套為最省費最有力之滑車

(告貿易者)每貿易者備有滑車因本公司之交換軸套不論何種大小之輪軸均可合用蓋交換軸套付與貿易者其長可隨意截短出售此種滑車為道治牌機器類中之一為傳力物之嚆矢故為各處動力者及貿易者所歡迎索取目錄不取郵費




(告動力者)此項滑車為精於機器者所製成力大耐用排立得法故為全球動力家所歡迎道治木質分縫轆轤能傳力自百分之二十五至百分之六十較銅鐵類以皮帶牽拉之轆轤為有力此項滑車應用者數百萬若欲索取目錄郵費可免



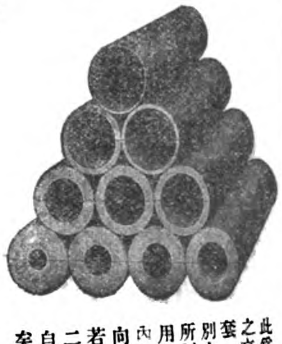
此輪之構造為精於機械學者所製此兩方相遇若輪心夾入輪軸使之積分力而發生大力輪邊連結如內鎖

**DODGE**

Sales and Engineering Company

GENERAL OFFICES AND WORKS

Mishawaka, Indiana, U. S. A.



此為木質之交換軸套用特別之車床所製若常用之則知內鑿洞而向外轉若剖之為二則夾處自必顯明矣

本公司亦造實質及分縫鐵軸自添油之球窠活掛軸機以及他種之軸枕摩擦接盤連結器及各種絞繩索機器幷凡傳力之各種機器

本公司所製造之各種機器均存足於海岸以便一接定單即行裝運

本公司已有三十載之經驗裝運出口貨物不致破損

總公司及工廠開設美國印第埃拿省

# 美國紐約克美孚油行廣告

The Standard Oil Company of New York

本行所出之鎖可聶瀝青油爲生瀝青油由格致術所製成如欲引長其效用黏合其物質柔固其原料以及天氣溫熱度之容納無不隨心所願

鎖可聶瀝青油可用於任何堅硬之物不加他種之油亦合於用

下列之各處均可用此鎖可聶瀝青油

建築永久之道路　屋頂水路工廠地板拍球園場　水涵管洞

用於鐵路車結處電桿電柱等處　包鋼質建築物及溝管等物

鎖可聶瀝青油可用於法侖表熱二百二十一度之融點故於最熱之天氣亦合用適度也鎖可聶瀝青油非試用之物乃合衆國多年實用之油功效最著之物品也

欲知詳細請函達上海五馬路十一十二號美國鈕約克美孚油行光油部可也

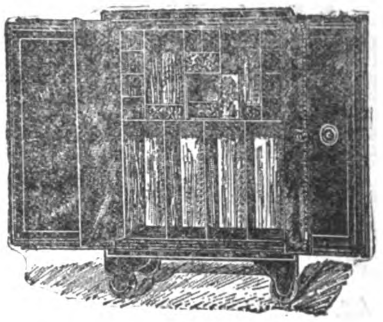
## 司帝反生公司廣告

W. F. Stevenson & Co., Ltd.

小呂宋　伊羅伊羅　塞步
本公司駐小呂宋單獨經理白
弗羅匹次公司之農業機器克
老司來弟兄公司之煤汽機及
油汽機奧司丁製廠之造路機
器威廉滑脫公司之航海機器
及水鍋等
合羣愛司倍司督司東方經理處

## 晉隆洋行廣告

Herring Hall Marvin Safes. Mustard & Co.



赫令好馬文保險箱爲上海所罕見目下陳列於本公司之售賣間若欲知詳細價目請來函索取目錄幷價格表爲荷本公司在中國爲單獨經售此項保險箱之公司

公司開設上海圓明園路二十二號

電話第十五號

## 馬爾思公司

A. J. Morse & Son Diving Apparatus.

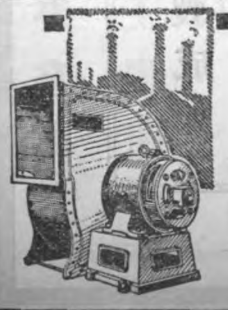
本公司創設於紀元一千八百三十七年專製下水應用之器具若欲定製無不立辦

公司開設美國鮑思敦高街第二百二十一號

經理處小呂宋弗蘭克司決浪克

## 麥秀斯耶次公司廣告

Matthews & Yates Ltd.



本公司所製之旋風風扇不論放於何處能省費加力

旋風風扇在世界各處無不置備因能生風通氣去濕等等利益在中國各處裝置者頗不乏人故聲價日高

諸君欲知詳細請來函索取第二百七十三號之說明書

本公司開設英國孟鳩思得

中國經理處　上海江西路三十九號凱衛倫洋行

## 希米脫加熱機關車蒸機公司廣告

The Schmidt Superheater For Locomotives.

The Schmidt Superheating Co., Ltd.

本公司所製之加熱蒸機中有四百九十多條之鐵道用二萬八千五百架機關車之加熱蒸機均爲倫敦及西北鐵路公司所審定若承購買請向上海經理處瑞記洋行定購可也

公司開設英國韋司民司得維多利亞街二十八號

# 上海耶松機器船廠有限公司

The Shanghai Dock & Engineering Co., Ltd.

電報行名

Telegraphic Address and Code

"FARNHAM"

A. B. C. 4th and 5th Editions

A.-1 Watkin's, Scott's

Western Union

and

Engineering.

密碼本用

總公司

在百老匯路廿六號

德律風第七號

Address.

Telephone Number

電話號碼

大班處七五七號

書記處一八七號

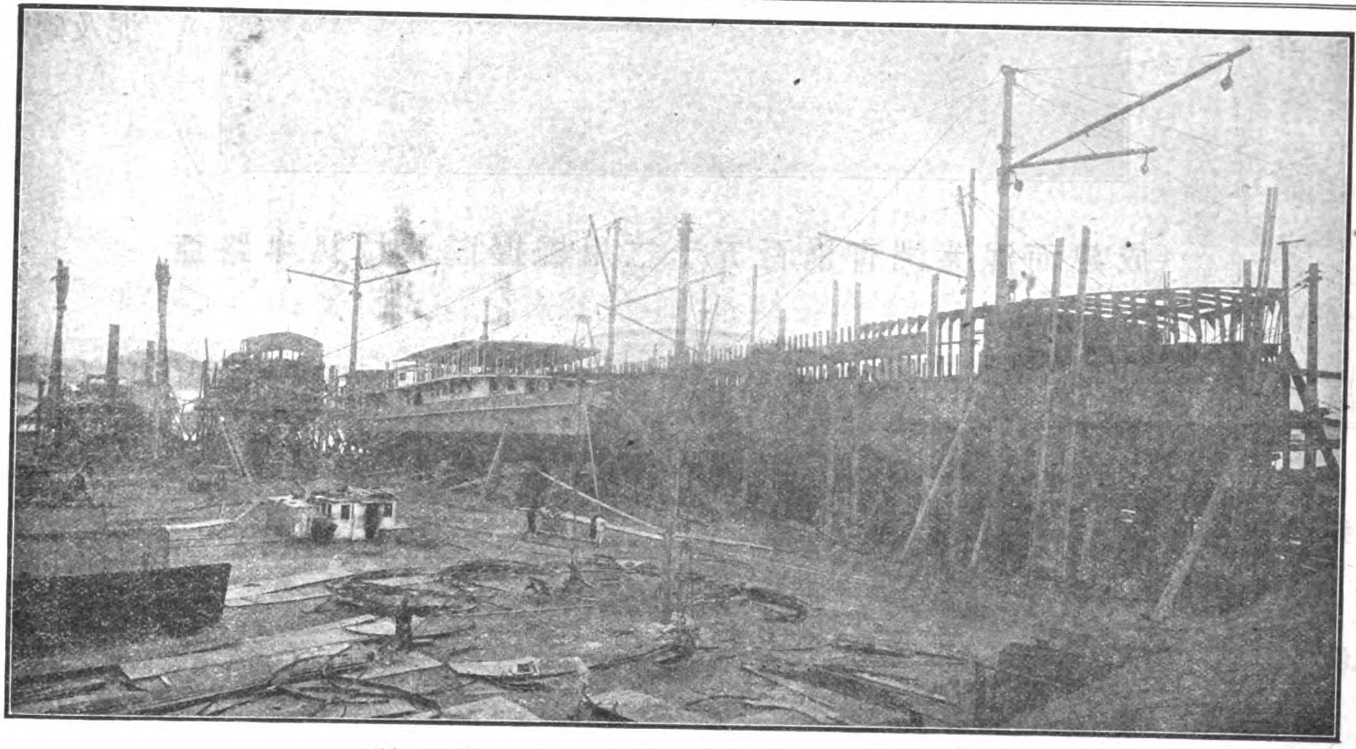
總辦處六七八號

幫辦處一八八七號

總寫字間七號

浦東寫字間二三號

浦東機器間一一二七號



祥生機器廠造船所

The Model exhibited at St. Louis Exposition and awarded the Gold Medal in 1904.

本廠所造輪船模型英一千九百零四年在美國聖魯易賽會得賞金牌

All Kind of Steam Heating Institutions.

熱水汽管司卽丁火爐各種式樣俱全

本廠共有船塢五處長自三百五十五尺至五百三十二尺船塢口闊自五十三尺至七十七尺深十六尺至廿四尺　本廠價格可稱東方第一低廉　本廠船塢工場共有基地四百四十八畝佔有水面一英里半之長　碼頭方船均全以便各輪船修理時可以靠傍小輪修理並可拖至岸上各船塢均備有起重吊機可受六十五噸之重物　各造船處及工場均裝用電燈並有活動吊機可吊六十噸重之物並有最新式機器應用物件機器間及工場均裝輕便鐵道　本廠備有水鬼多名撈船器具及吊機浮船一遇招呼隨時應命無論海船江輪明輪暗輪拖駁小輪機器駁船挖泥船吊機浮船以及碼頭方船等如蒙詢問價目無不從速答覆　各種修理及拆舊換新等本廠均可承接並能迅速從事　本廠並有船上岸上所用機器爐子開礦機抽水機以及各種機件電氣自來火火油司丁各種機器俱全如蒙賜顧請卽駕臨或函件接洽均當歡迎也

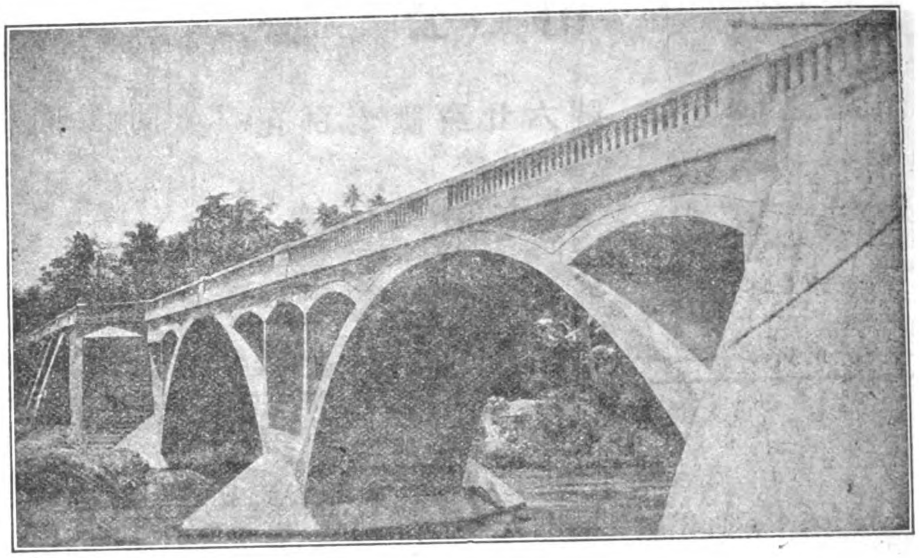
# 青洲英泥

Green Island Cement Company, Ltd.

燒青泥磚

大小明暗瓦溝

水斗等器



花階磚

大階磚

火爐磚及泥

亞路卑扒拉波歷握橋用二千五百桶青洲英泥而建成

## 代理分銷處

架刺吉打　端拿摩利臣公司

新加坡　士滔片民

長口及漢口壹帶渣甸洋行

仰光　希活

孟米　士片拿公司

庇能　列公司

中國海岸及臺灣渣甸洋行

## 本行在別埠代理處

上海支行

日本支行

天津支行

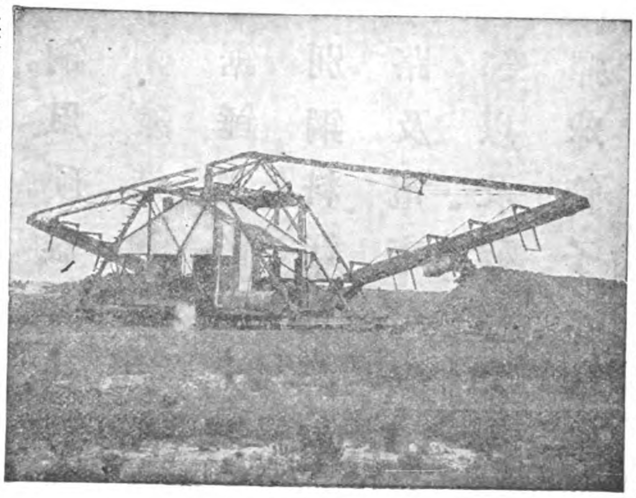
非律賓羣島全權代辦人小呂宋威廉晏打臣公司

# 奧司丁挖渠機器公司露佈

F. C. Austin Drainage Excavator Co.

本公司製造各種機器如溉田機器鑿溝機器且一經購定即可速即裝運出口今本公司特登廣告以告諸包工家營造師以及政府中官吏因本公司已將各機器早經裝就定單一到即可運往印度緬甸錫蘭暹羅海峽殖民地埃及中國日本及遠東諸各處水脚保險均可包理

奧司丁鑿溝機器樣式及大小種類極多且各種地土均可挖鑿其兜能自傾外出其機器之料作均鋼所鑄奧司丁掘土機器能自由運動地之深淺闊狹斜側均適宜合用其兜能自傾外出



圖中之奧司丁連結挖掘機器為美國政府所用以開巴拿馬運河之用每一連機每點鐘可挖掘六十八立方碼奧司丁公司所出之機器通行於美國英國坎拿大奧司達利亞南亞非利加日本俄羅斯意大利巴西及埃其丁民主國且均由各該政府定購

若欲知詳細章程者可函達上海遠東報主筆先生可也

本公司開設美國芝加哥省

# 克立討耳公司廣告

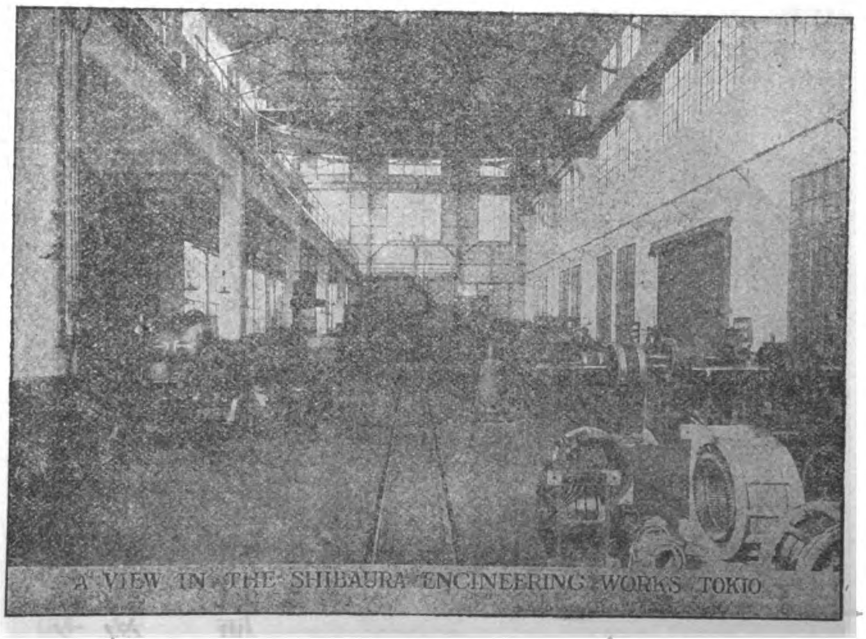
CRITTALL

本公司包造各種房屋邇馳名工廠開設英國

日本經理 東京 麴町區有樂町十一町目

中國經理 上海漢口天津 上海南京路十三號盈生洋行

此圖為本公司在日本東京之機器工廠




日本東京芝浦製作所之窗圖

# 愛鍊純鋼廠

在英國希斐爾特地方

## 鹿牌鋼

本廠專鍊各種各式尺寸鋼料爲寰球各製造局造幣廠礦務局機器廠打鐵廠等處所用並造超等鎗管鎗彈吸鐵鋼風硬器具快鋼彈簧鋼兼造銼刀快絞絲鑽鋸錘鋼條鋼片汽車特別鋼料錳質碎石鋼鐵路及電車分路叉橫軌等以及碎礦鋼料並造彈球管子水坭機器一應俱全

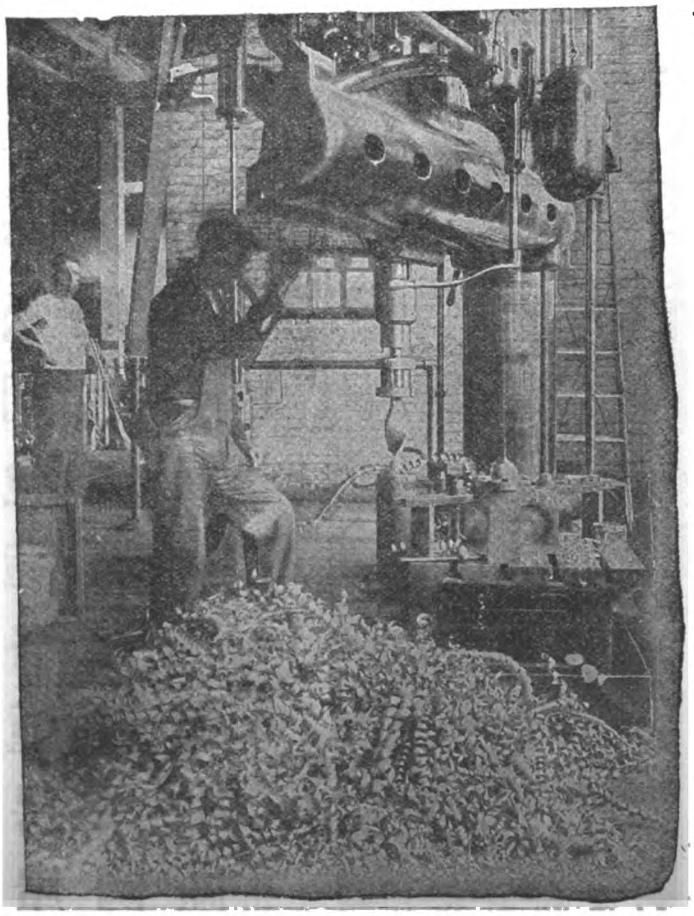
賜顧者請臨上海二馬路外灘B字一號接洽或函致亦可

獨家經理　上海漢口　泰來洋行白

Edgar Allen & Co., Ltd., Sheffield, England.

# 美國器具工廠公司廣告

The American Tool Works Company



物美　工倍　事半

左圖爲亞美利根牌之活擺鑽機鑽三吋之闊十四吋深之實體鋼質每分鐘可轉九十次速率之轉柱用以鑽物僅需添進萬分之七十二吋

亞美利根牌之活擺鑽機並無弱點因材料精美且建造黏實故生力頗大

美國各大工廠均奉亞美利根牌爲活擺鑽機之模範故購用之且不待商酌而遝源源定購其效力之大可想而知矣

諸君若欲知最近時之活擺鑽可來信示知以便將說明書奉贈

本公司亦造車床刨機具形機鑽機等物

本公司開設美國辛辛耐的省

# 瑞生洋行

設分行在漢口天津北京等處

本行開設在華歷有年所承蒙 官商訂購各種機器或全廠或零售無不價廉物美屢承 嘉許遐邇皆知凡官商諸公購辦機器務祈惠臨 敝行 估開價目繪呈圖說格外克己上海漢口兩處另設機器陳列所陳列各種最新式樣機器及五金器具鋼地軸皮帶輪掛脚等以備諸公駕臨觀覽特此佈告

上海瑞生洋行謹白

Shanghai Machine Company

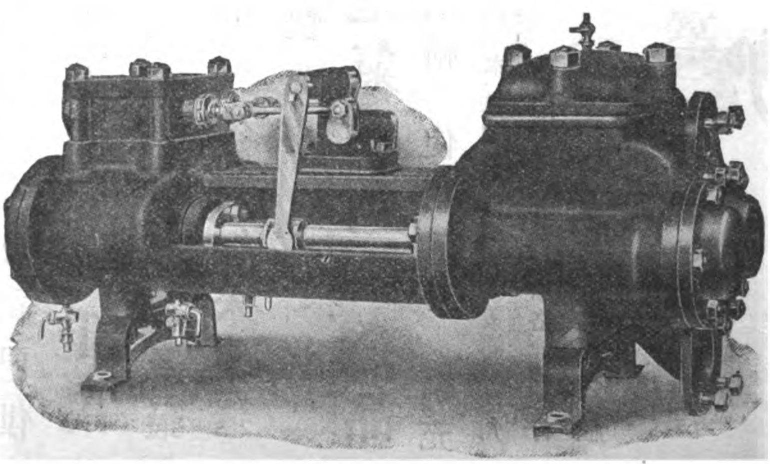
# 魏廷敦起水機器有限公司

Worthington Pump Company, Limited.

本公司起水機器亦在各國著名賽會得有金牌

本公司亦有製造廠在以下之國

英國 法國 美國 澳國 德國 印度國



本公司亦有辦事處在以下載明之各國

比利時 南亞斐利加 坎拿大 澳大利亞 中國 葡萄牙 墨西哥 巴西國 俄羅斯 阿珍甸 西班牙 義大利

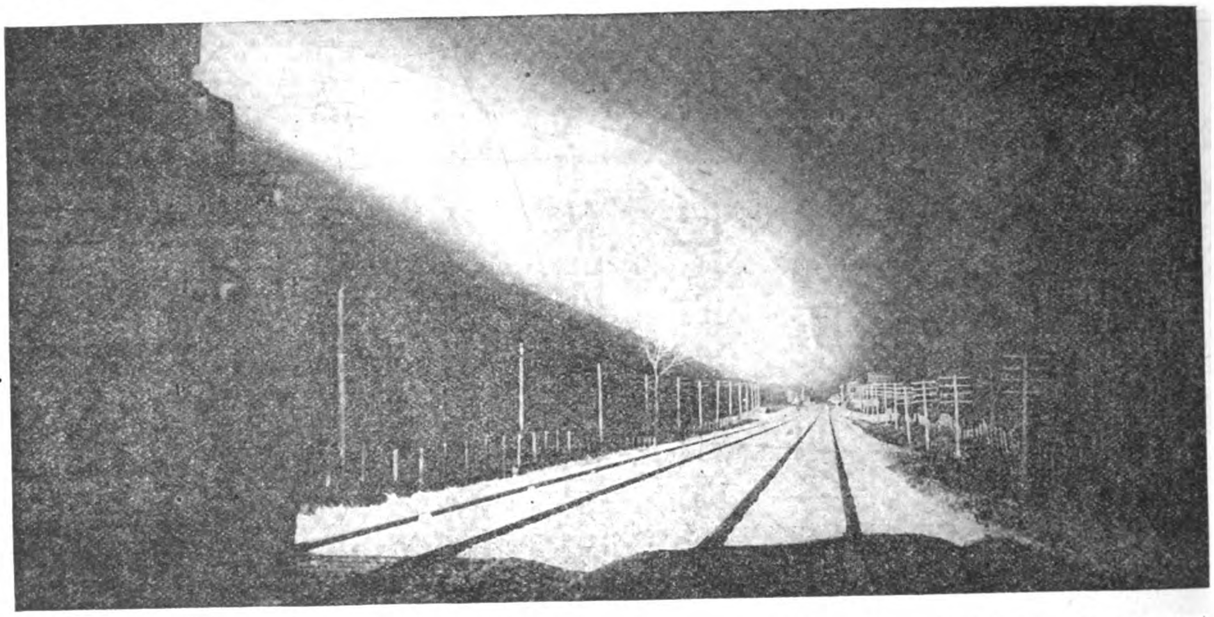
中國總辦事處在上海九江路第三號

# 美國派愛而車頭電燈公司告白

Pyle-National Co.

## 下圖表明用二萬二千支光派愛而車頭電燈之功用

此圖的係攝自美國鐵路車站其攝影之地點相去



車頭有半英里之遙足徵派愛而燈之功用非小

派愛而燈能發有力明亮之光可使車頭司機者之視線能達半里之外且使其能瞭視一切可避危機派愛而燈之功用上已略言之矣總之人咸樂用此種燈因知其無美不臻也

# 西方電氣公司廣告

The Western Electric Co., Inc., Shanghai.

公式電池用牆機

三十八載以來本公司已供給全地球市場電話機一千萬具及多數之電纜電料以及最大之總機爲世界各國從未製造

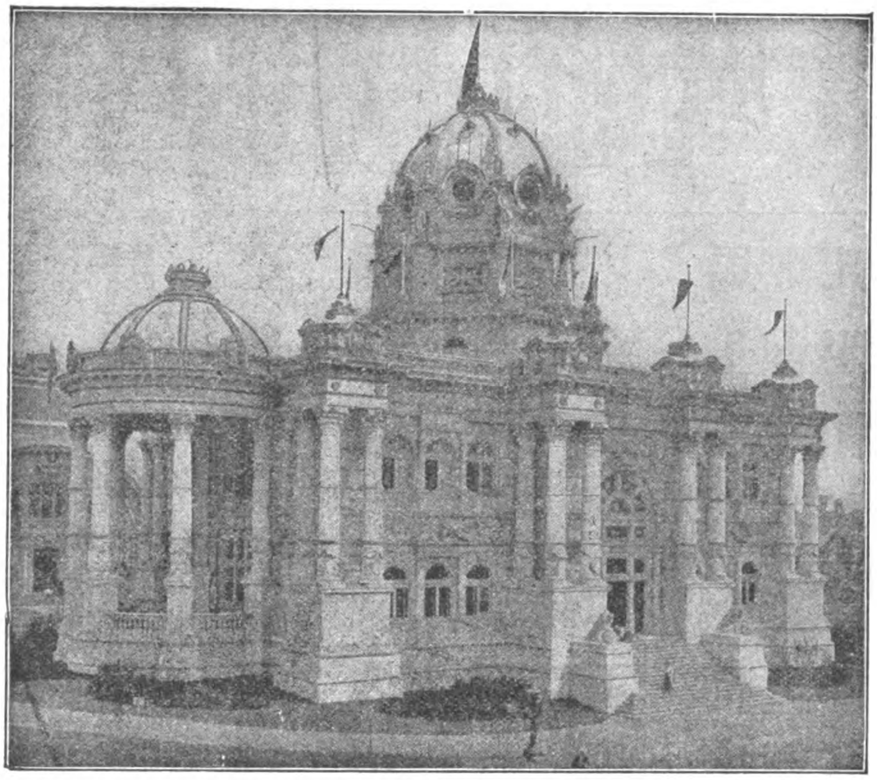
快快改用

**西方電氣公司製造品**

機件最精　使用最易　擴充尤易

本行開設上海廣東路黃浦灘轉角
小呂宋經理處愛令加格令加洋行
日本經理東京日本電氣株式會社

公式電池用桌機



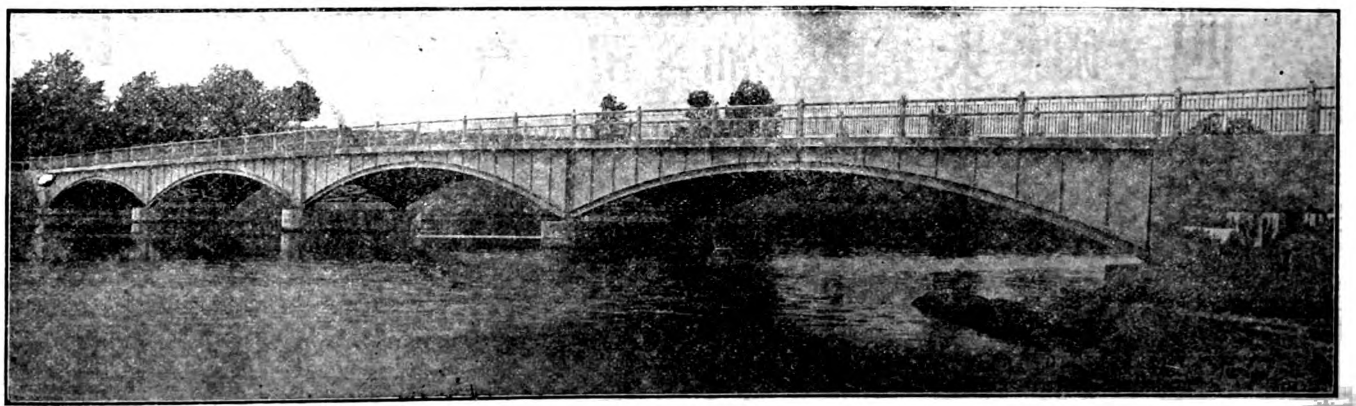
此爲巴蘭夢羅和平宮其工程之堅固久爲世界所稱譽然建築時需用鋼鐵至四百餘噸之鉅皆本公司所供給特攝之以供賞鑒

# 美國鋼鐵公司

經理處　上海黃浦灘第四號

電碼　"Steelyard," Shanghai

本公司專辦各種建築鋼鐵品並包造鐵橋鐵房自來水煤氣塔及各種鐵管等物無不全備



此爲美國牛查西省克那基湖哈爾門橋橋共四彎每距九百二十四寸約重二十七萬一千餘噸計用鋼鐵甚夥均屬本公司之出品

United States Steel Products Company

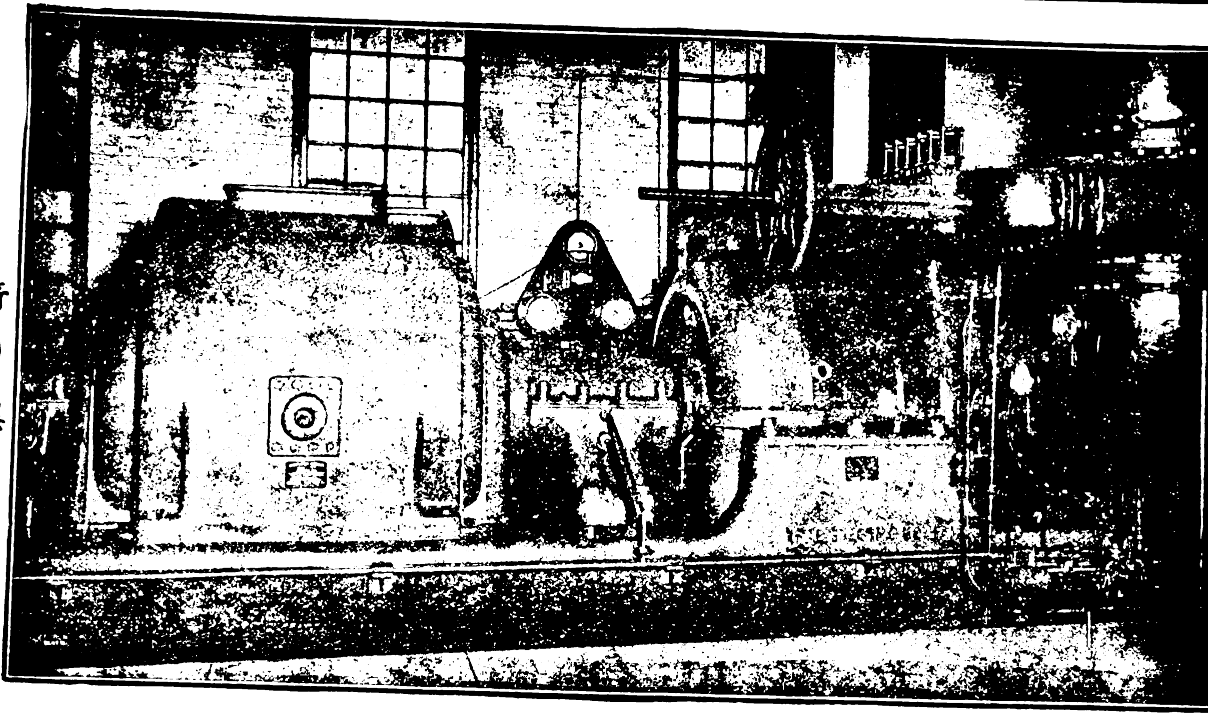
# 慎昌洋行廣告

Andersen, Meyer & Co., Ltd.

本行設立已久遐邇馳名專辦歐美各國名廠各種機器所有電燈全廠機器及各項電機電話火車鐵路鋼軸鋼鐵各軌各式車牀刨床測量繪圖儀器並各種汽油機器 等件無不俱全所有本行經理之 美國愛特生電汽總公司 英國湯浦電機公司 浦特製造火車公司 漢司火車燈公司 施端林電話公司 范落汽油行船機器廠 右孚亞士工程儀器廠 鄧特摩阿車刨機器廠 馬士維爾石棉廠等均係環球著名各大廠中外馳名凡賜顧者均知各名廠機器之完善美備也 諸君欲知詳細請移玉至上海圓明園路四號

中國經售處上海慎昌洋行

奇異商標



B T-H

美國紐約**普通**又名**奇異電汽總公司**爲環球獨步世界第一之電汽製造廠與英國著名**湯輔公司**係屬聯號性質近年新發明一種**透頻汽機**　係與磨電機直接相連而用便利異常且自七啓羅滑脫推至二萬啓羅滑脫其汽機之工料無不堅固精良而用煤亦省使用極靈卽裝置機件亦能省佔地位誠現今電廠**惟一無二之電機也**此機發明後各國爭相購用僉謂較舊式之電機其使用之利鈍相去殆不可以道里計　**又新造一種光明省電之曼士達拉絲燈泡**　此燈泡乃本廠獨家創造係以數十年之電學經驗參照美國國家頒定規程研究製造而成故質地既極精良燃點尤能經久發行以後風行全球因其能省電力而光線之足備反出各種新式電燈之上因之銷路日廣愈推愈遠洵爲**電燈泡中之魁首又奇異商標各種電氣風扇**　省電多風用久無炙手諸患可免一切危險　**又電話機器**　式樣玲瓏裝置簡便內地躉購且可代爲裝置餘如各種電燈全廠電機家常裝用之電汽器具並礦機鑽石機升降起重各機轉滾提鍊電機傳電器電汽船大小各廠應用之電機幫浦潔淨機貯水所發電機避電測電等機泉水發光機以及各種海陸軍用電光照遠燈電扇轉動等機凡屬於電汽各項大小機件及各樣附屬之件無不完全齊備　賜顧諸君欲知詳細請　駕臨　**上海圓明園路**　四號本行寫字間接洽無任歡迎此佈

**中國經理處上海愼昌洋行**

General Electric Company

# 麥康韋討萊公司廣告

The McConway & Torley Co. Janney—Penn. Coupler.

邇來新發明之愛姆西皮近耐形連結俱爲本公司所輸入及研究所得者此連結俱卽近耐形之化身而變成目下最通用之對鎖鎖具及肘節開具爲美國愛姆西皮會所推許茲將各所製造者一一說明於後

對鎖者卽既爲輪制所鎖住則鎖條決不向上活動因下端凸出干連結之空處免致脫節也

鎖具者卽以鎖砧置於連頭之內端俟不連結之端向上轉動時卽按節而合若欲解脫此鎖具當於連結時拔去之

肘節開具卽由最相結連之處或略分開之處開放至最大開放處其運行處自由且肘節開放完備

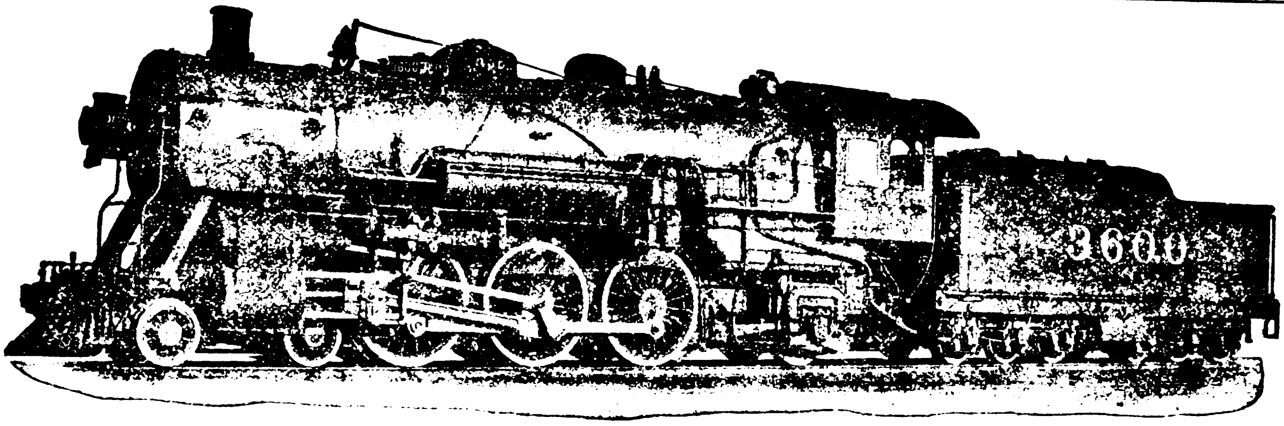
其鎖面形極大約五方吋故能使肘節附合且鎖砧大小適合於連結端之下此連結俱備有各種之附屬品且易於修理此項連結俱爲本公司所專製

總公司開設美國本色萬尼亞省匹此勃

中國經理上海愼昌洋行天津協隆洋行

# 巴爾威機器車頭廠

The Baldwin Locomotive Works



愛克生討庇格散打非各鐵路之太平式車頭

美國搭客之快車中其大半皆有本廠之太平式(四六一二)機器車頭所拖帶此項車頭機器能載重力拖帶重車因機器內包函之力足使速率按時增高也

汽筩長二十六吋闊二十六吋　主動輪直徑七十三吋

汽機壓力二百磅　火爐佔地六十六另十分之七方呎

熱水面積四千四百四十三方呎　加重熱水面積九百八十方呎

主動輪重十七萬二千五百五十磅　機器共重二十八萬八千七百磅　拖力四千一百磅

太平式之機器車頭爲愛克生討庇格散打非鐵路所有爲近世最新式之機器見上圖

此條鐵路爲乘客最多故車行之次數亦多辦法亦妥善

此車頭用油爐特意擴充其極大之力每邊之主動輪之重限五萬八千磅

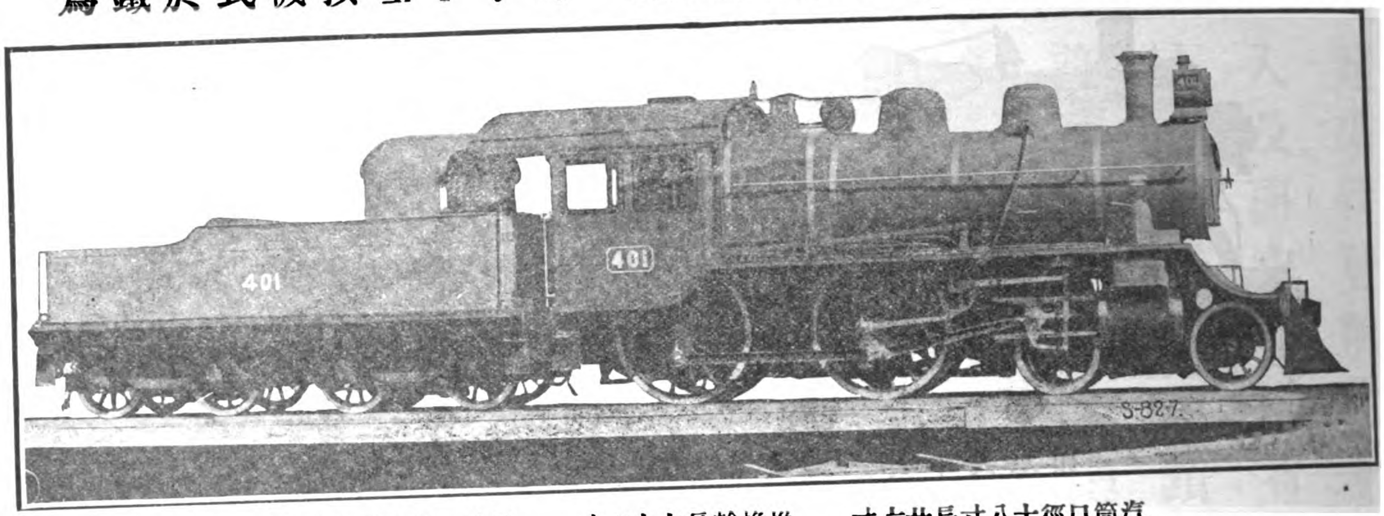
此項機器已爲本廠帶往巴拿馬萬國賽會場之物件中之一

中國經理　上海北京張家口天津香港漢口　愼昌洋行

日本經理東京舍爾法辣薩有限公司

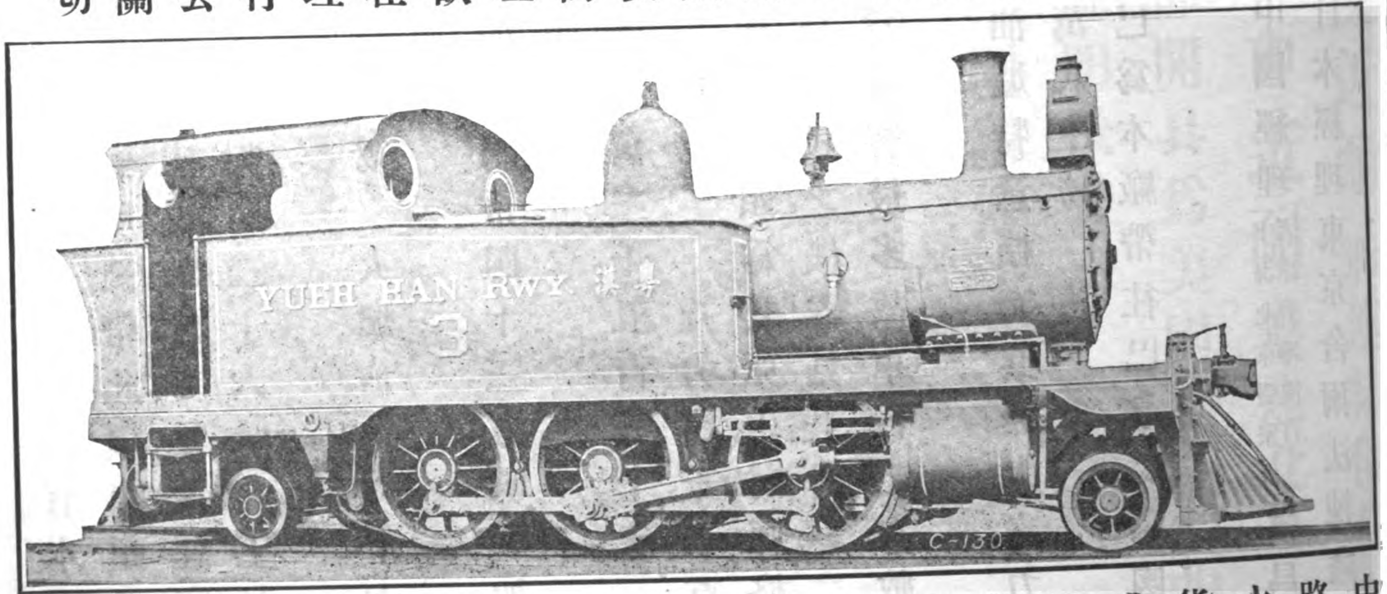
# 美國製造火車公司之火車極合用於中國鐵道

美國所製造之八輪火車頭即近時朝鮮鐵道所用之八輪火車頭甚爲合用已著明效拖客車至六輛或八輛其速力計一點鐘可駛二十至四十五英哩之遙按此種機關車式樣用於中國鐵道尤爲適宜




汽筩口徑十八寸長廿六寸　推挽輪長七十二寸　拖力一萬七千九百磅

火車頭之製造也在購辦者無不以最新式最適用爲貴而製造家亦必以最新式最適用者求合於購辦者之心爲能達其目的夫果欲合購辦者之心則必須經機關師之幾番商榷始可辦理如　貴客欲與本公司在中國之經理處三井洋行面商則本公司當派機關師就商一切概不需費




中國粤漢鐵路之六輪雙水櫃車拖帶貨車或客車或貨車客車連帶之列車其速力與上圖記八輪車頭快慢有異者因此車速力較小拖帶列車之數遂少但前後有兩小輪可無旋轉機而能進退自如故駛行之時便捷多矣其特別出色之處即在此兩小輪也

在中國經理處三井洋行　上海　天津　廣東　漢口　香港　厦門　盛京

本公司在美京紐約禮拜堂街三十號　電碼

Locomotive New York
Annual Capacity; 3500 Locomotive.

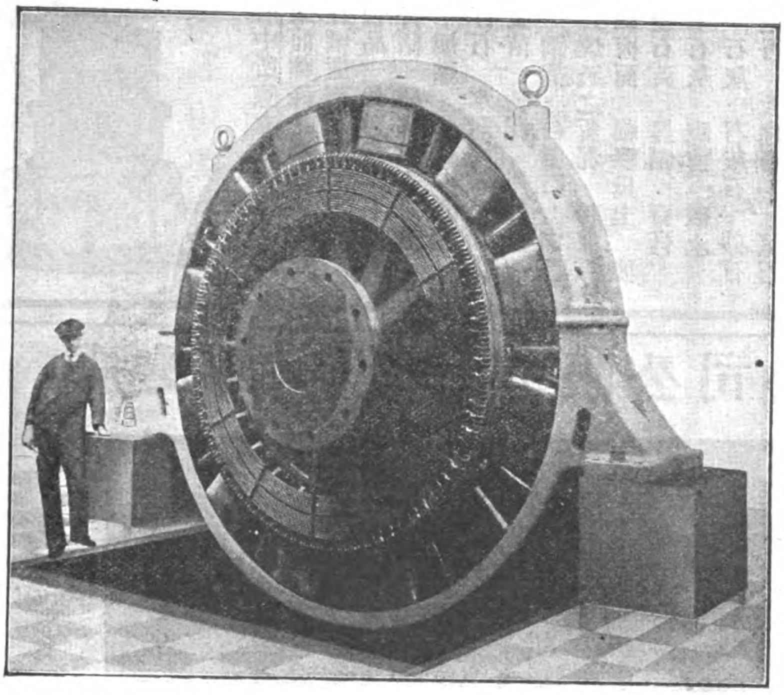
American Locomotive Company

# 佛克耳司有限公司廣告

Vickers Limited

本公司專造各式電機
直接車鈎汽機發電機
旋轉變壓器
脫羅交流發電機
馬達發電機
馬達及轉轍發動機

總公司開設英國京城百勞匯路
工廠在英國昔非特及柏名罕



此圖為車鈎汽機發電機克羅瓦德一千五百電流自五百至五百三十每分鐘旋轉一百八十次

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經理處及分行列后

愛立灼 曼谷（暹羅）巴塔菲亞（爪哇）孟買（印度）加爾各答（印度）廣東 西部 可倫坡（印度）特利（印度）福州 海洪 漢口 香港 伊羅伊羅（小呂宋）依巴 卡拉基 克蘭神戶（日本）克拉蘭博 馬特拉司（印度）馬來半島（小呂宋）鈕約 北京 梹榔嶼 卜克 仰光 西貢 式拉卡 上海 新加坡 蘇拉排耶 台浜 天津 橫浜

定期存款可來行面議利息每半年一付每年六月三十號及十二月三十一號為付息之期

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陳立所中所陳立之機器不下
四千架而福祿氏磨機實首屈
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之石 燒過之黃泥 粉泥石
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磁鐵石 大理石 赭石
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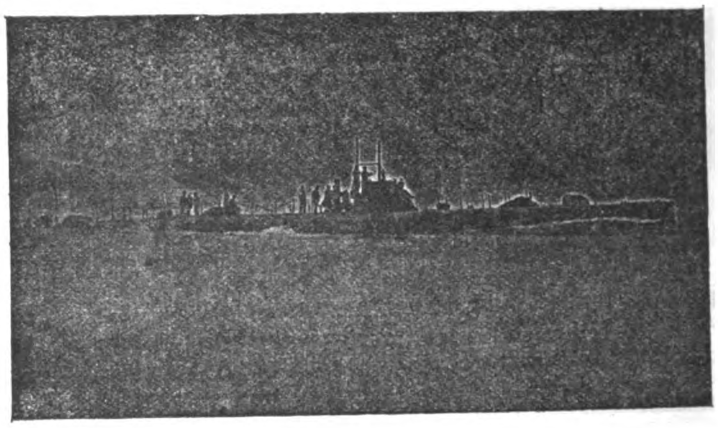

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機

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大浦丸（七百
拾六噸）

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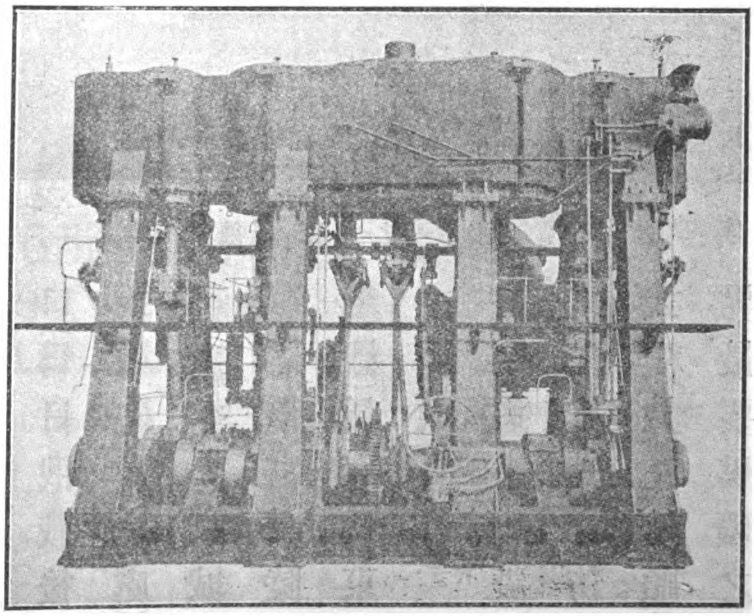

此圖為四次自漲力汽之合抵力汽機計馬力四千八百匹

# 南滿鐵路公司廣告

South Manchuria Railway Company, Dairen

諸君何不乘今年假期之時往南滿一遊乎蓋該處地土高燥景緻秀美且爲歷史所載之戰地并有最寛大最佳美之大旅館爲旅行最愉快之地遊擊漁魚打球海水沐浴以及種種遊戲無不可行且更有特異點綴爲近時所改革者

諸君除此外尚有他需乎若一遊於該地待返家後則必神清氣爽爲從來所未有

## 欲知假期消遣之法

大連夏賣多旅館

## 可詢問旅行事務所

除輪軌可達外在大連(爲特異之城及海口使人興趣)星亇浦(爲中國北方之最佳美浜海躲避所)旅順口(爲日俄戰後留有毀壞砲臺之處)奉天(爲滿洲之京城有美麗之皇宮皇陵可以參觀)長春(爲東三省之咽喉且有三國鐵路之通系)均設有新式之旅館均仿歐洲式樣且在撫順(爲世界最要煤礦之一)設有總會

諸君若欲知詳細請來信索取有美麗圖畫之指南書不索分文

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CHICAGO: Continental & Commercial Nat'l. Bank
AUSTRALIA: Bank of New South Wales, Sydney.
HONGKONG: Banque de L'Indo-Chine
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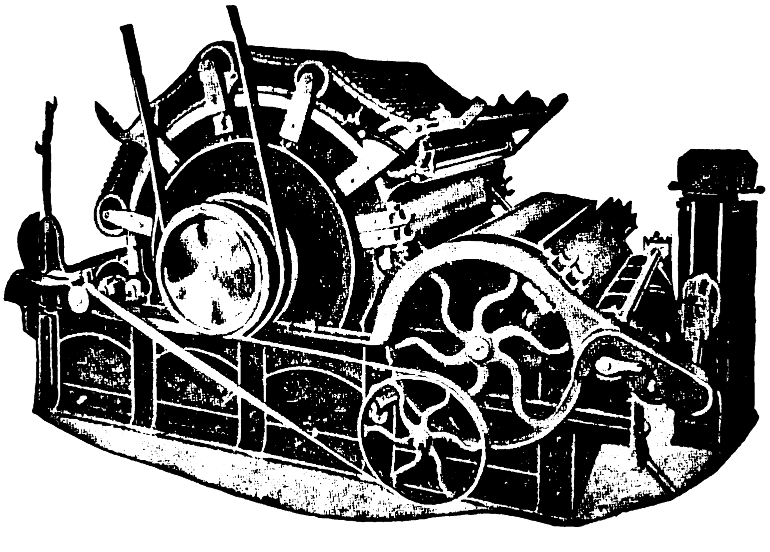

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遠東時報

Engineering

Finance Commerce

Vol. XIII., No. 7. SHANGHAI—MANILA December, 1916.

## Should America Co-operate with Japan in China

## The Hotchpotch of Chinese Politics

## Shanghai's New Junction Line

## New Department Store and Hotel

## China's Salt Revenue

## Canton-Kowloon Railway Report

TABLE OF CONTENTS ON PAGE 262 INDEX OF ADVERTISERS FACING PAGE 280

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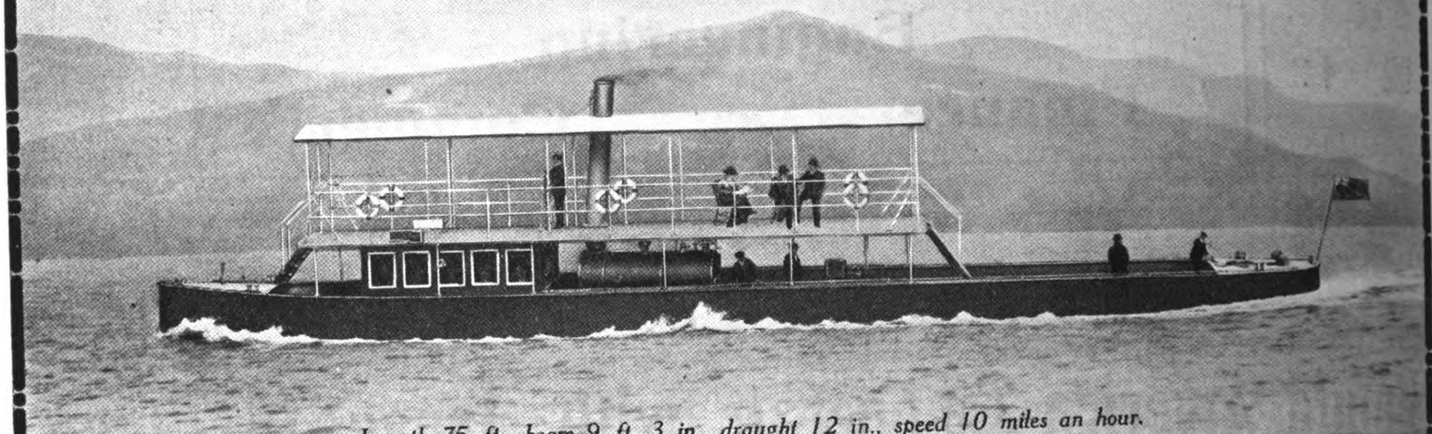

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**For the Watertight and Protective Jointing of**

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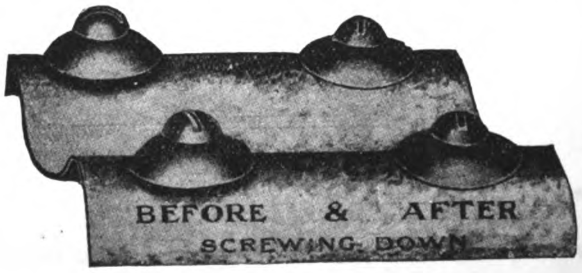

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This remarkable feature, along with the spigot and faucet joint at bolt head, comprises the only efficient method of jointing corrugated iron.

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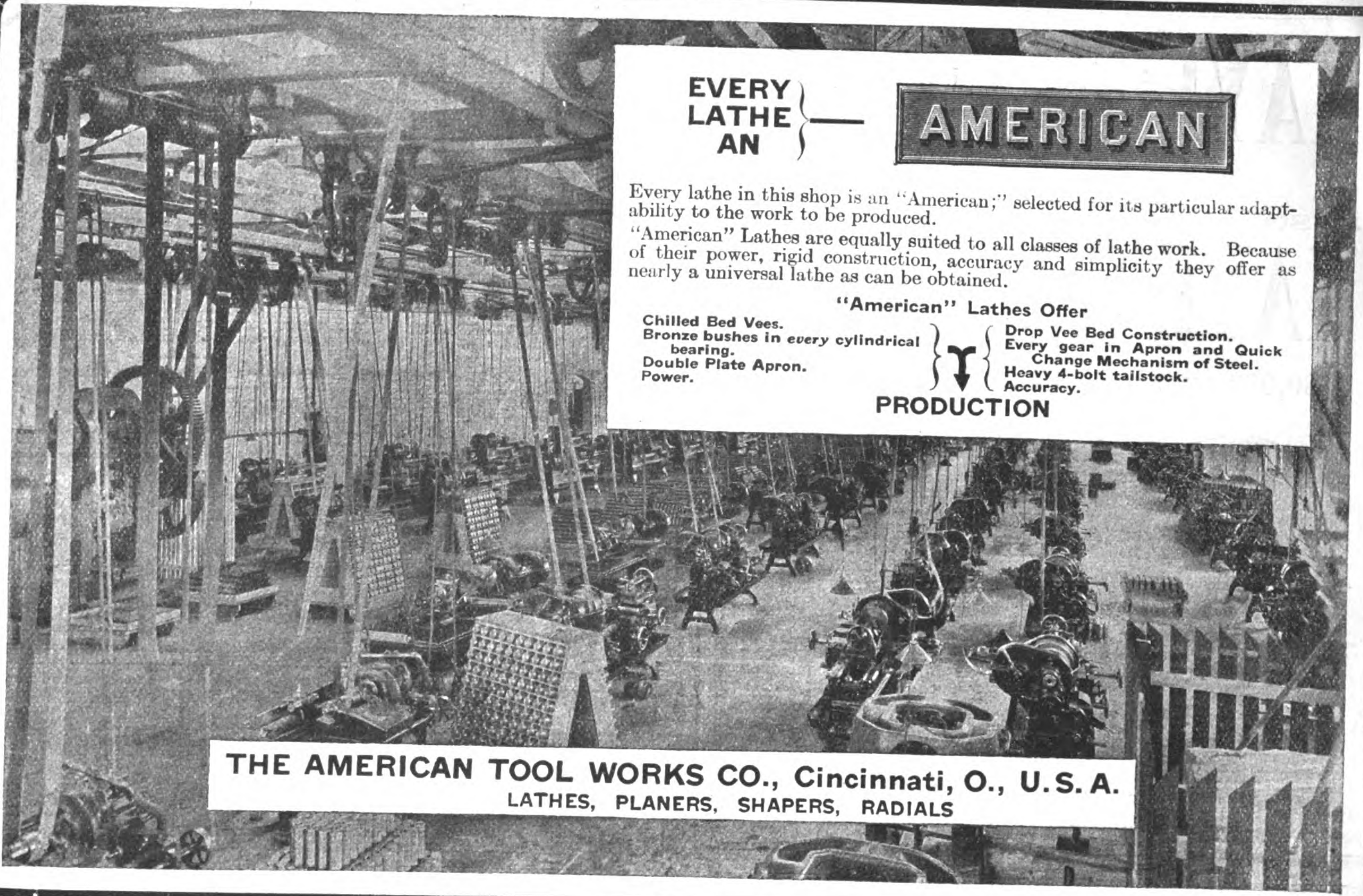


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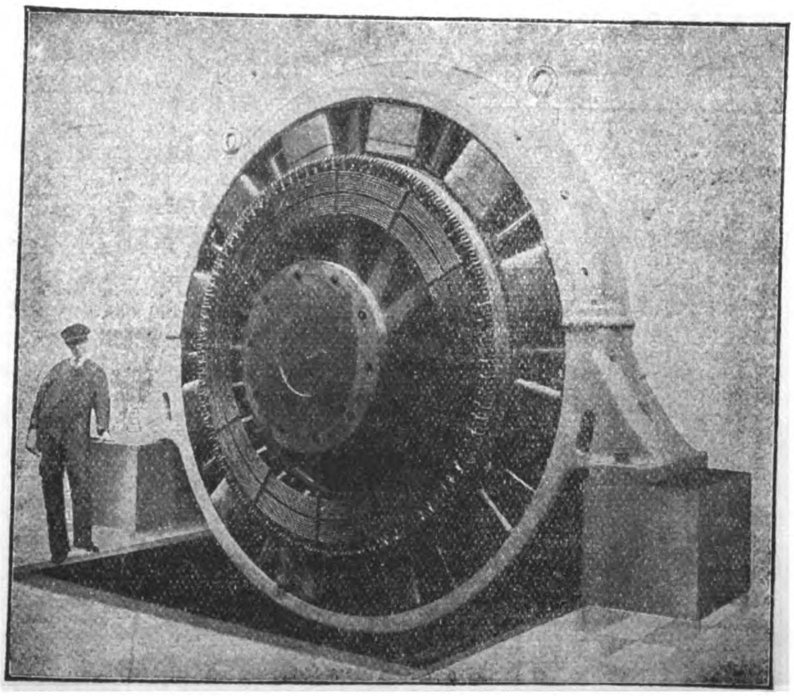

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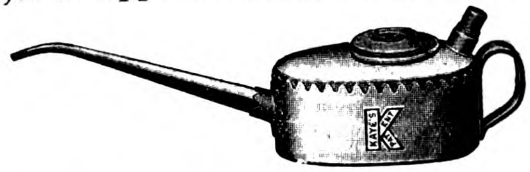

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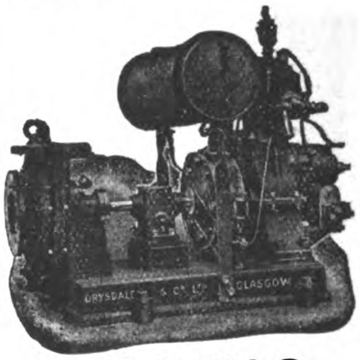

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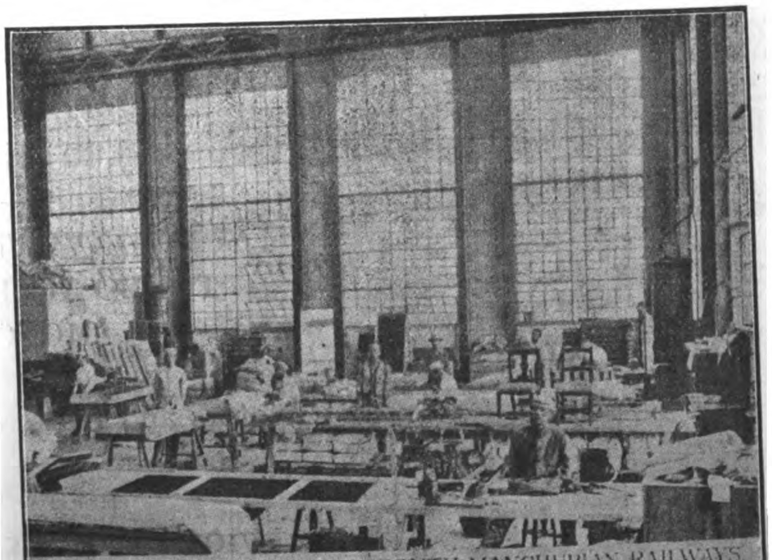

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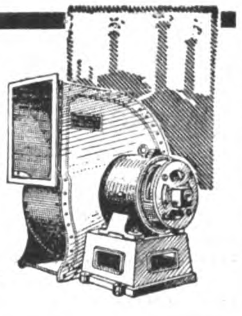

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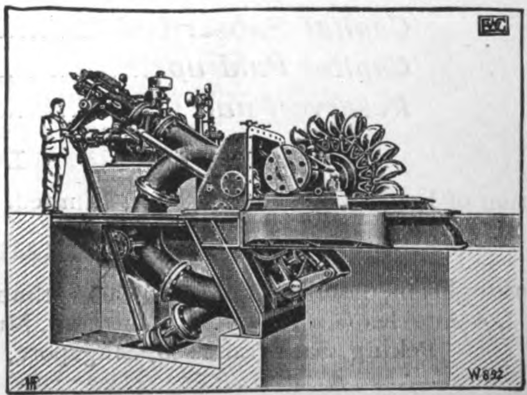

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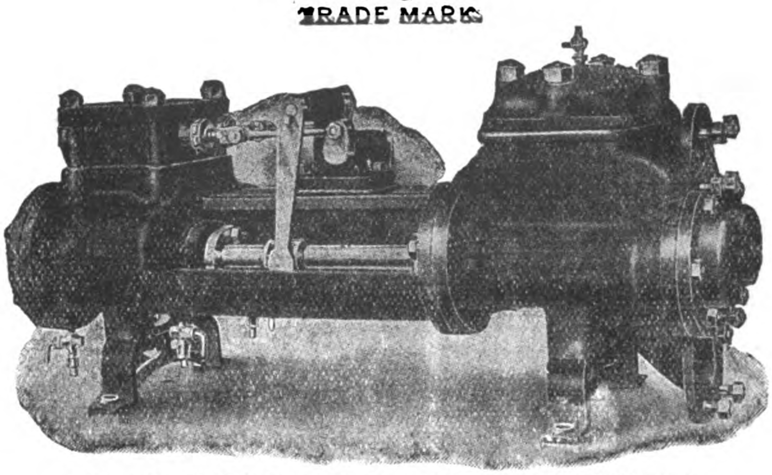

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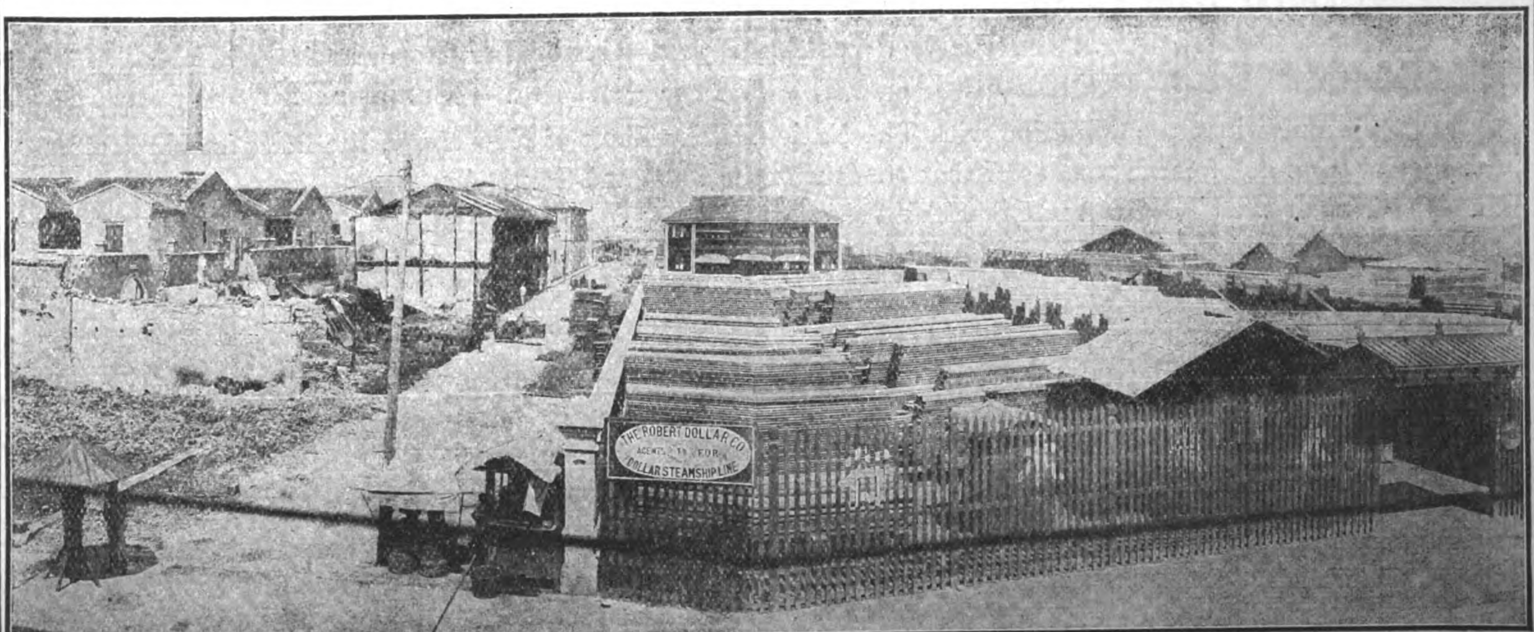


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Reserve liability of Proprietors, .. .. .. .. $15,000,000

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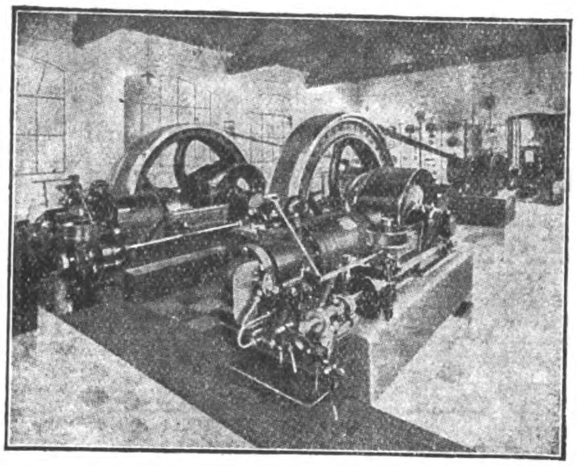

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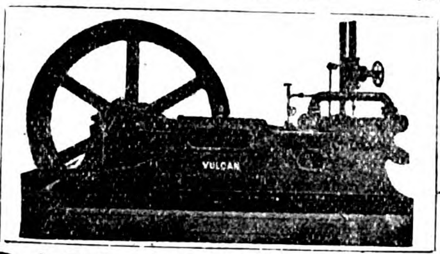

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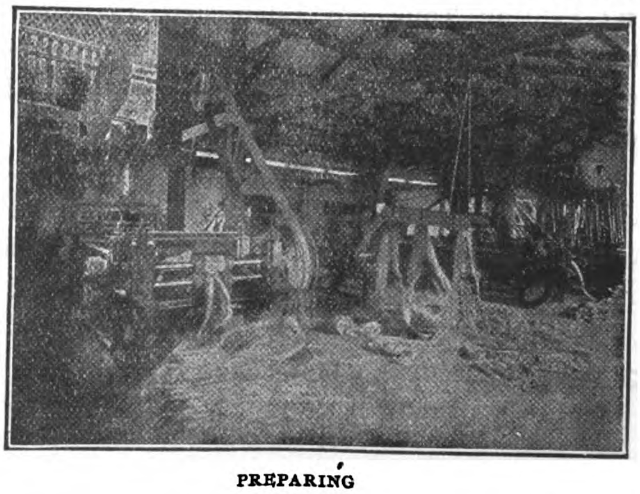

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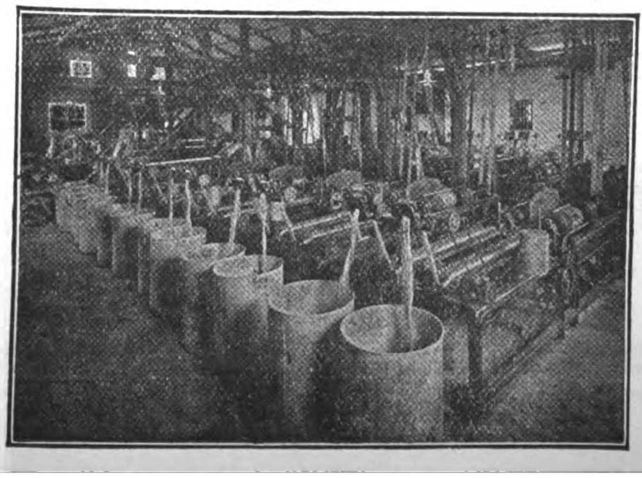

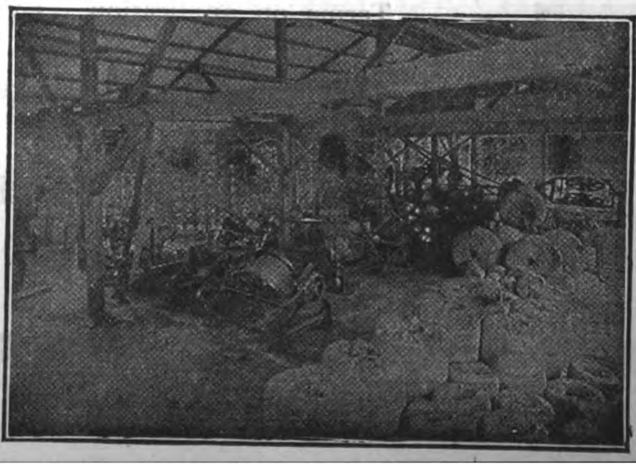

# THE BANK OF CHINA

## Government Bank

(Specially authorised by Presidential Mandate of 15th April, 1913)

Authorised Capital: $60,000,000.00
Paid up Capital: $10,000,000.00

## Head Office: Peking

## Branches and Sub-Branches:

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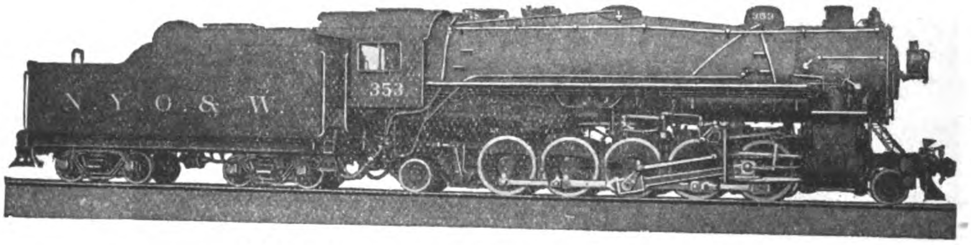

2-10-2 TYPE—NEW YORK, ONTARIO & WESTERN RAILWAY
Total Weight of Engine, 352,500 pounds; Weight on Drivers, 293,000 pounds; Diameter of Drivers, 57 inches; Tube Length, 17 feet; Boiler Pressure, 190 pounds; Cylinders, 28 x 32 inches; Maximum Tractive Power, 71,200 pounds

Three saturated Consolidation locomotives on the New York, Ontario & Western formerly handled 2550 tons out of Mayfield.

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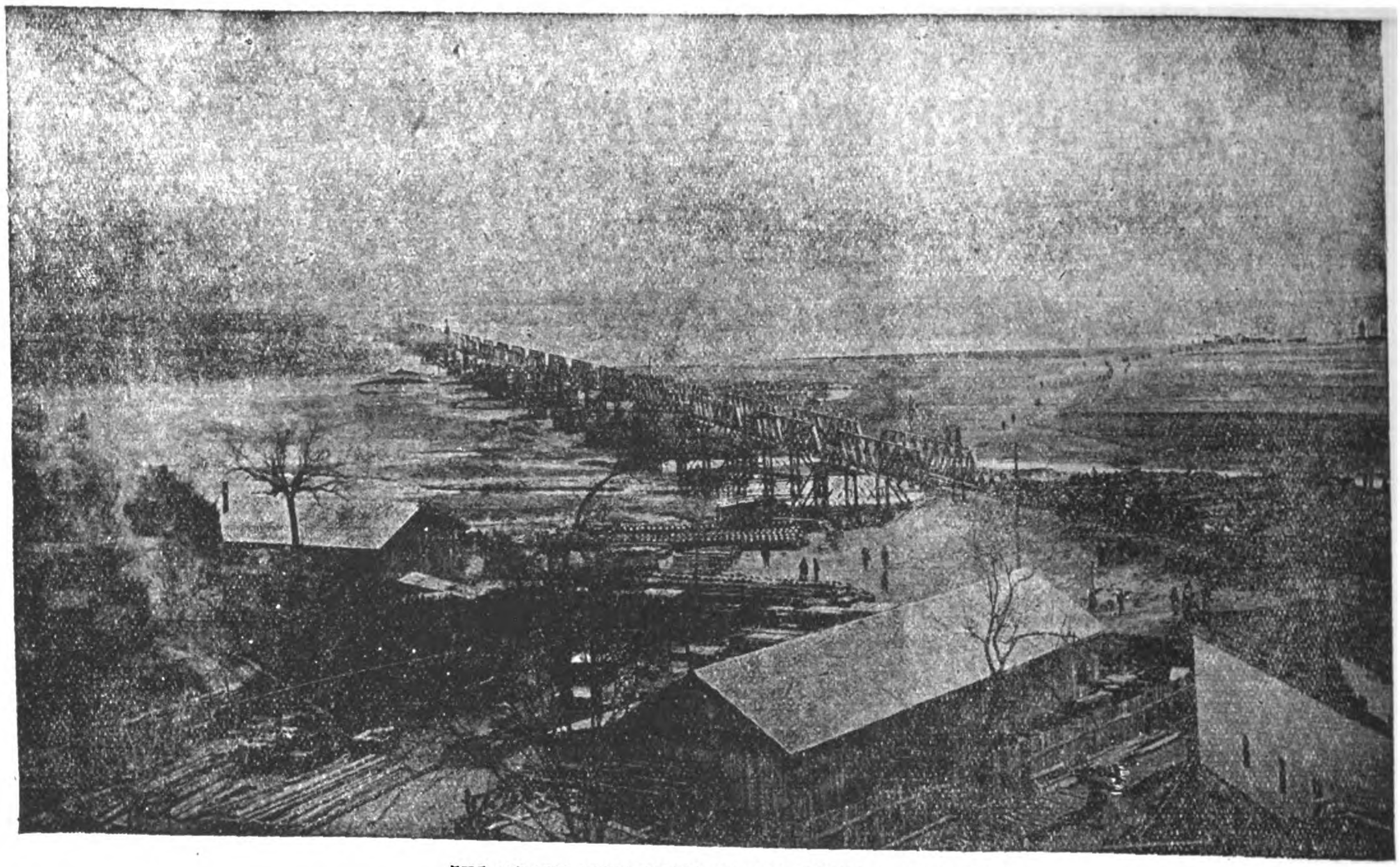

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This line passes through the Heart of the Country and enables the traveller to and from Europe to catch a glimpse of Old China. Ancient walled cities, temples and pagodas are seen from the comfortable seats of the weekly trains de luxe operated by this line. From Peking, the great capital of the oldest civilization in the world, the train departs from the famous Chien-Men and carries the traveller through the historical and legendary portions of the Country, to the modern industrial center at Hankow—the Chicago of China. Connections are made with the Cheng-Tai Railway at Chengtingfu, with the Tao-Ching Line at Sin Siang-sien, and at Chengchowfu with the Pienlo Line.

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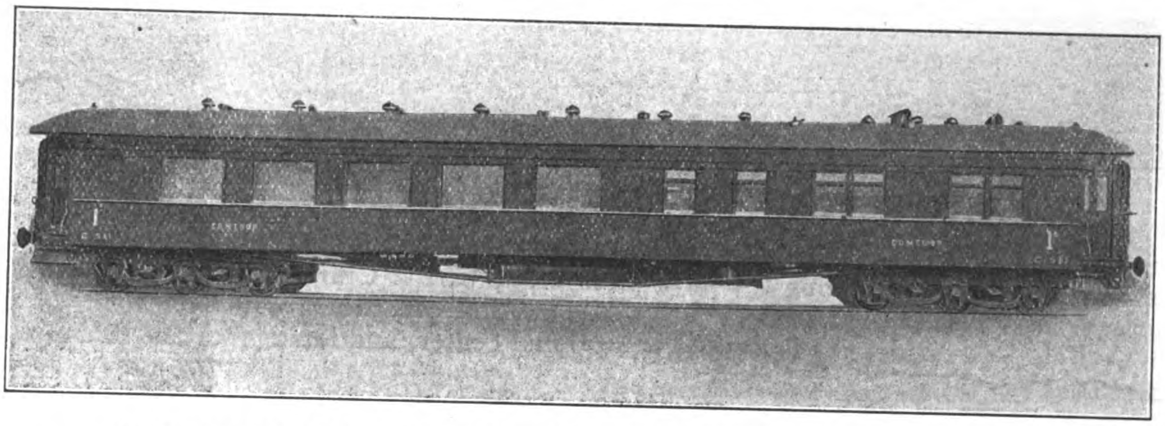

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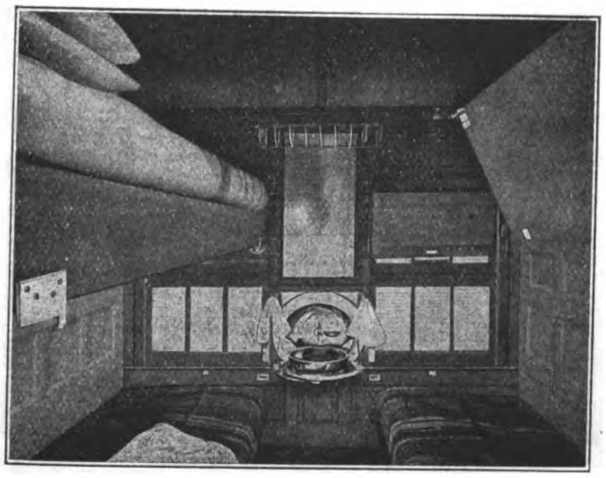

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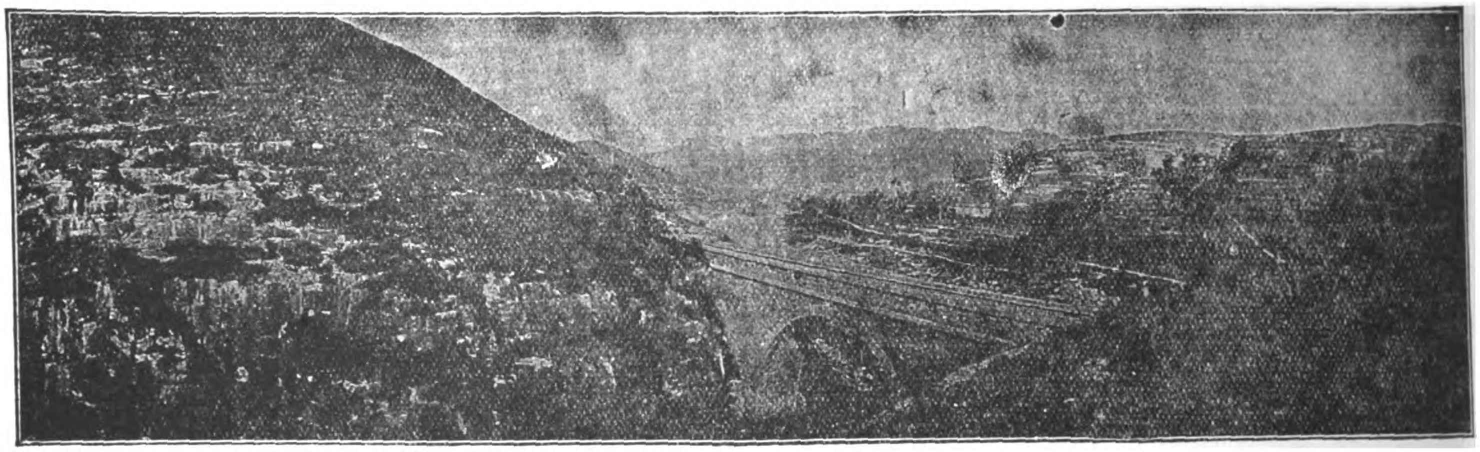
# Chinese Government Railways

## The Cheng-Tai Railway

*(CHINESE GOVERNMENT SHANSI LINE—CHENGTINGFU TO TAIYUANFU)*

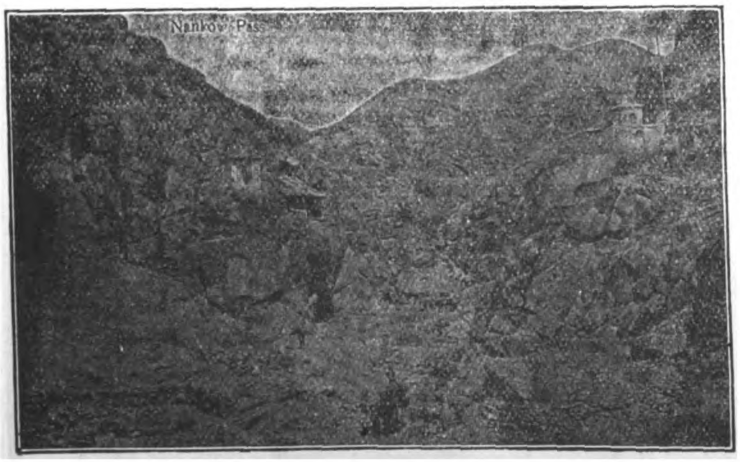


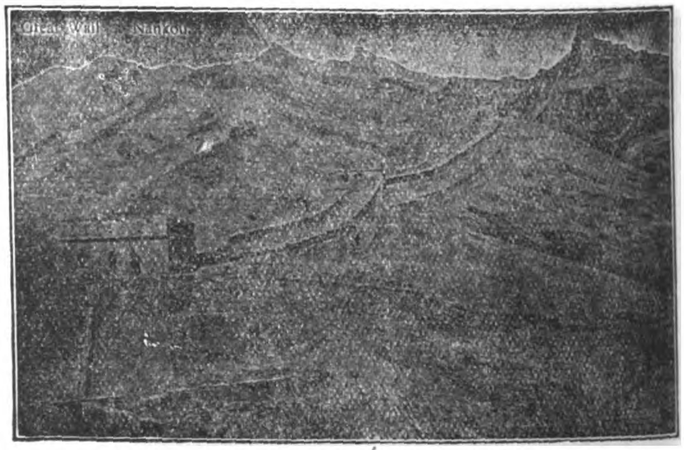
VIEWS ALONG ROUTE OF CHENG-TAI RAILWAY

The trains of this line connect with the through service of the Peking-Hankow Railway, affording Travellers the opportunity of seeing the most picturesque part of China. The line passes through a mountainous section of country, rich in Mineral Resources to the Provincial Capital of Shansi at Taiyuanfu. This interesting city is a great educational center, and famous for the fine quality of its artistic embroideries.

## The Peking-Kalgan Line

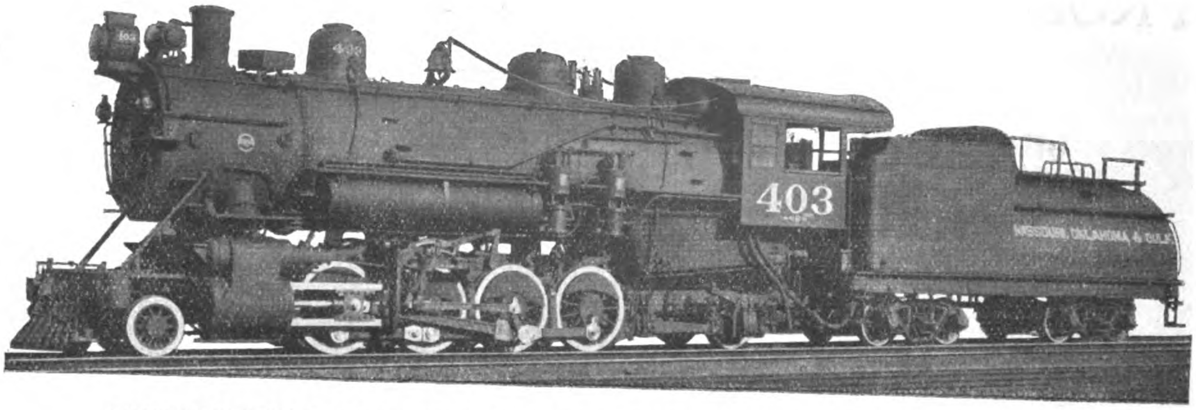
*"THE ROAD TO THE GREAT WALL"*



This line follows the ancient caravan route and military highway from Mongolia into China by the way of the historic Nankow Pass. This pass is the Key to Peking, and Kalgan is the gate of the Country. From here the great camel caravans set out on their long journeys across Mongolia to Siberia and Central Asia. This old frontier mart, retaining its time-honored characteristics, one of the most interesting sights of the Old World, is made accessible by the new railway. The line also carries the passenger in two hours from Peking to Nankow, when the Great Wall of China and the Ming Tombs may be seen. A foreign hotel is operated by the railway authorities at Nankow, where chairs and guides may be secured for the Tombs.

# BALDWIN MIKADOS



MIKADO TYPE LOCOMOTIVE, MISSOURI, OKLAHOMA & GULF RY.

Cylinders, 23×28 inches.
Driving-wheels, diam., 52 inches.
Steam pressure, 180 lbs.
Grate area, 57.2 sq. ft.
Water heating surface, 3778 sq. ft.
Superheating surface, 838 sq. ft.
Weight on driving-wheels, 177,100 lbs.
Weight, total engine, 232,000 lbs.

TRACTIVE FORCE, 43,500 Lbs.

The majority of Mikado type locomotives are of large size, and carry heavy wheel-loads. This type, however, is equally suitable for work where wheel-loads are restricted and powerful locomotives with high steaming capacity are required. The locomotive for the Missouri, Oklahoma & Gulf Ry., illustrated above, can be safely used on rails weighing 70-75 pounds per yard. It has high steaming capacity in proportion to adhesion, and the boiler equipment includes a brick arch and superheater. The locomotive is also fitted with a power-operated fire-door and power reverse gear.

Mikado type locomotives are suitable for freight service where the fuel used is of poor quality. The 2-8-2 wheel arrangement provides room for a firebox having large volume and grate area; two essential features when burning low grade fuels. This wheel arrangement is also suitable for work where frequent backing is necessary. Hence Mikado type locomotives are successful in heavy industrial service, where a considerable amount of switching is required in addition to road hauling.

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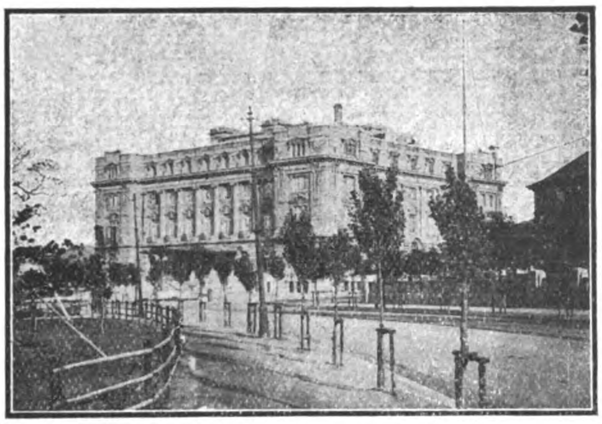

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The Quickest, Cheapest, and Safest Route between Europe and the Far East is via Siberia and Manchuria. The South Manchuria Railway Company's Express Trains are equal to the best in Europe and America, and are timed to connect with other Express Trains and Steamers. Sleeping Cars are attached to most of the Ordinary Daily Trains.

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Travellers from Europe via Siberia by the Through Express arrive at Dairen in time to catch the S.M.R. Company's Weekly Mail and Passenger Steamer "Sakaki Maru" of the Dairen-Tsingtao-Shanghai Line. This Steamer is turbine driven, equipped with wireless telegraphy, and carries a doctor on board. The "Kobe Maru," which also leaves Dairen weekly, plys direct to Shanghai without calling at Tsingtao.

### *Important to Travellers and Tourists.*

The S.M.R. Co. has established, under its direct management, a series of Yamato Hotels at Dairen, Hoshigaura, Port Arthur, Mukden, and Changchun. All on European lines. Cook and Son's Coupons accepted. Tel. add.: "Yamato"

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In addition to its Dairen-Tsingtao-Shanghai Liners, the S.M.R. Co. run a fleet of cargo steamers between Dairen and Hongkong, calling at ports en route. Other Steamship Companies have regular services to and from Dairen. Particulars may be obtained from the Manager of the Wharf Office, Dairen.

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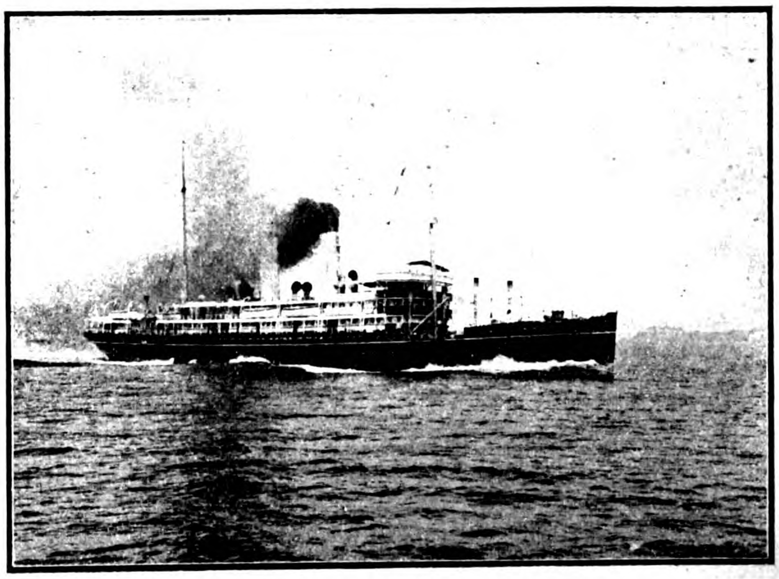
The S.M.R. Company's Railway and Steamer Tickets, Illustrated Guide Books, and Handbooks of Information can be obtained at all the Offices and Agencies of Messrs. Thos. Cook & Son, the International Sleeping Car and Express Trains Co., and the Nordisk Resebureau; the Nippon Yusen Kaisha, Shanghai; the S.M.R. Branch Wharf Office, Shanghai; or direct from the



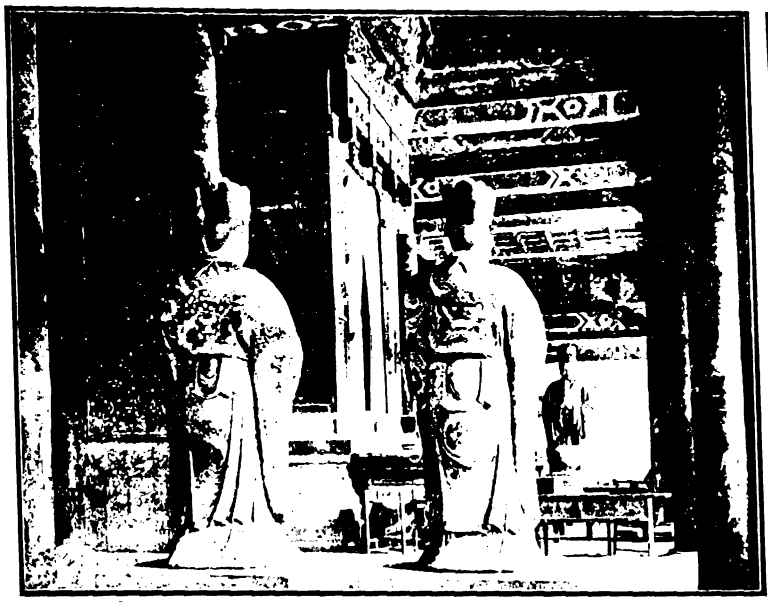
S.M.R. Co.'s Dairen-Tsingtao-Shanghai Liner, "Sakaki Maru."

# South Manchuria Railway Company, Dairen.

Tel. Add.: MANTETSU. Codes: A.B.C. 5th Edition, A.L. & Lieber's.

# CHINESE GOVERNMENT RAILWAYS

# TIENTSIN-PUKOW LINE



**Mukden-Peking-Kalgan-TIENTSIN-TSINANFU-HSUCHOWFU-PUKOW-Nanking-Shanghai.**

**all by rail only.**

---

Being the **quickest, surest and most convenient** connection between Shanghai on the one and Tientsin, Peking, Kalgan, Mukden and the **Siberian route on the other side,** this railway represents **a saving of many hours, of many troubles,** worries and inconveniences for the busy merchant, the home tripper on short furlough.

The tourist, the globe trotter travelling with more leisure and bent on seeing things, it takes right away from the stereotyped banality of the great ports, takes him through many provinces of the vast republic and shows him **something of the "real" China,** of its people, its history and its beauty.

Express trains equipped with sleeping and buffet cars run once a week each way between Pukow (Nanking) and Tientsin connecting with the through service of the South-Manchuria and Trans-Siberian Railways.

Through mail trains equipped with **buffet cars run daily each way** between the before mentioned termini.

The crossing over the Yangtsekiang between Nanking and Pukow is effected by means of a modern 100-tons twin-screw ferry boat.

Special facilities and **liberal allowances** for passengers' baggage.

Best of **meals and wines supplied** on the trains.

Sanitation under the personal supervision of a **qualified medical officer.**

For further particulars apply to The Traffic Manager, Head Office, Tientsin or to the Agencies of Messrs. Thomas Cook & Sons, The International Sleeping Car & Express Trains Co. or the Nordisk Resebureau.

Telegraphic Address: TSINPURY—Tientsin (Tsinanfu, Nanking, Shanghai).

Codes: A B C 5th Edition; Broomhalls' (with Suppl. No. 1).

**Tientsin, May 1st, 1915. The Tientsin-Pukow Railway Administration.**

# United States Steel Products Company

## Union Building, No. 4 The Bund, Shanghai.

*Telegraphic Address:*
*"STEELYARD" SHANGHAI*

*Exporters of the Products of*

CARNEGIE STEEL CO.
ILLINOIS STEEL CO.
THE LORAIN STEEL CO.
NATIONAL TUBE CO.
AMERICAN STEEL & WIRE CO.
AMERICAN SHEET AND TIN PLATE CO.
AMERICAN BRIDGE CO.
SHELBY STEEL TUBE CO.
TENNESSEE COAL IRON AND R. R. CO.

## LIST OF PRODUCTS

BESSEMER and BASIC OPEN HEARTH STEEL.
Billets, Slabs, Sheet and Tin Plate Bars; Skelp.

STEEL RAILS, Splice Bars, Bolts, Nuts, Spikes, and other accessories;
CROSSINGS, FROGS, SWITCHES, and other SPECIAL WORK;
Steel Cross Ties; Copper Rail Bonds; Tubular Poles.

Beams, Channels, Angles, Tees, Zees, Steel Mine Timbers and other STRUCTURAL SHAPES.

"UNITED STATES" "FRIESTEDT" STEEL SHEET PILING.

STEEL PLATES for Shipbuilding, Tanks, Boilers, etc.; FLANGE and FIRE BOX STEEL;
Checkered Floor Plates;
Black, Galvanized and Painted STEEL SHEETS, Flat and Corrugated;
Special Rust Resisting Sheets, Plates and Shapes;
Range Steel; Tack Plate; Locomotive Jacket Iron; Patent Planished Sheet Iron; etc.
Metal Lath, Metal Ceiling and Siding; Electrical Sheets.

STEEL HOOPS and COTTON TIES.

MERCHANT BARS—Rounds, Squares, Flats, Ovals, Hexagons, and other Bar Shapes.
Twisted and Deformed Bars for Concrete Reinforcement.

Special Iron and Steel for Bolts, Rivets, Shafting and other purposes;
COLD DRAWN STEEL SHAFTING, and BARS—Rounds, Squares, Flats, Hexagons, and other shapes—for SCREW MAKING and other MANUFACTURING PURPOSES.

SOLID FORGED and ROLLED STEEL WHEELS, and FORGED STEEL AXLES;
FORGINGS for Machinery and Special Purposes.

BLACK and GALVANIZED WROUGHT MERCHANT PIPE for GAS, WATER, STEAM,
Seamless Steel and Lapwelded BOILER TUBES for OIL and ARTESIAN WELLS;
STEEL DERRICKS and DRILLING RIGS for Stationary, Locomotive and Marine Works;
CASING, TUBING and DRIVE PIPE for OIL and other WELLS; GAS and OIL LINE PIPE;
LAP-WELDED and SEAMLESS CYLINDERS for Compressed Air, Carbonic Acid Gas, Andydrous Ammonia, etc.;
Converse and Matheson LEAD JOINT PIPE for WATER and GAS MAINS;
SEAMLESS TUBES, Shrapnel, Projectiles, and Miscellaneous Forgings.

CAST IRON and MALLEABLE IRON FITTINGS for Tubes and Pipe;
Brass and Iron VALVES and COCKS.

WIRE RODS; DRAWN STEEL WIRE of every description; BARB WIRE;
PLAIN GALVANIZED and VARNISHED FENCE WIRE; WOVEN WIRE FENCING; FENCE STAPLES;
Galvanized Steel Fence Posts and Gates; Netting and Weaving Wires; Mattress, Broom and Bottling Wires;
Triangle Mesh Woven Wire Reinforcement for Concrete; GALVANIZED TELEGRAPH and TELEPHONE WIRES;
COPPER WIRES; ELECTRICAL WIRES; CABLES and TROLLEY WIRES;
TOWERS for HIGH VOLTAGE ELECTRICAL TRANSMISSION LINES.

WIRE NAILS and WIRE TACKS; WIRE BALE TIES; WIRE HOOPS; FLAT, HELICAL and SPECIAL SPRINGS;
WIRE ROPE, CABLES and HAWSERS; Wire Sash Cords and Clothes Lines;
WIRE ROPE TRAMWAYS and CABLE HOIST CONVEYORS.

HORSE and MULE SHOES.

TIN PLATES—Coke, Charcoal and Terne; BLACK PLATES for Tinning, Stamping, Enamelling, and other purposes.

Designs and Estimates submitted for BRIDGES and STEEL BUILDINGS erected complete, or prepared for erection. Steel Barges, Steel Tanks, Eye-bars, Sleeve Nuts, Clevices.

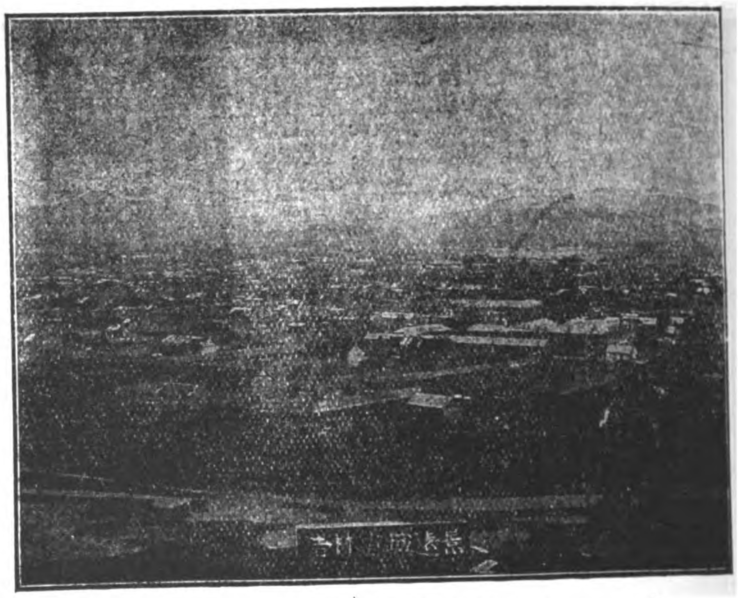
FOUNDRY and BASIC PIG IRON: COAL; COKE.

# 中華民國政府吉長鐵路行車時刻表

# CHINESE GOVERNMENT RAILWAYS KIRIN-CHANGCHUN LINE.

## TIME TABLE.

| DOWN TRAINS Daily Mixed | DOWN TRAINS Daily Mail | | STATIONS. | | UP TRAINS Daily Mail | UP TRAINS Daily Mixed |
|---|---|---|---|---|---|---|
| P.M. | A.M. | | | | P.M. | A.M. |
| 2.50 | 7.30 | dept. | TOUTAOKOU | arr. | 6.10 | 10.47 |
| 2.58<br>3.05 | 7.38<br>7.41 | arr.<br>dept. | CHANGCHUN | dept.<br>arr. | 6.00<br>5.55 | 10.37<br>10.31 |
| 3.39<br>3.43 | 8.12<br>8.14 | arr.<br>dept. | KALUN | dept.<br>arr. | 5.24<br>5.22 | 9.57<br>9.55 |
| 4.15<br>4.18 | 8.46<br>8.48 | arr.<br>dept. | YINMAHO | dept.<br>arr. | 4.50<br>4.48 | 9.22<br>9.20 |
| 4.33<br>4.38 | 9.02<br>9.04 | arr.<br>dept. | HSIACHIUTAI | dept.<br>arr. | 4.34<br>4.32 | 9.05<br>9.03 |
| 4.50<br>4.53 | 9.16<br>9.18 | arr.<br>dept. | YINGCHENGTZE | dept.<br>arr. | 4.20<br>4.18 | 8.50<br>8.48 |
| 5.18<br>5.26 | 9.40<br>9.50 | arr.<br>dept. | TUMENLING | dept.<br>arr. | 3.56<br>3.50 | 8.24<br>8.18 |
| 5.45 | 10.10 | arr.<br>dept. | CHAOCHIATIEN | dept.<br>arr. | 3.31 | 7.58 |
| 6.09<br>6.14 | 10.31<br>10.33 | arr.<br>dept. | HUAPICHANG | dept.<br>arr. | 3.09<br>3.07 | 7.30<br>7.23 |
| 6.30<br>6.32 | 10.46<br>10.47 | arr.<br>dept. | KUTIENTZE | dept.<br>arr. | 2.54<br>2.53 | 7.05<br>7.03 |
| 6.49<br>6.53 | 11.03<br>11.05 | arr.<br>dept. | KIUCHAN | dept.<br>arr. | 2.37<br>2.35 | 6.48<br>6.43 |
| 7.15 | 11.25 | arr. | KIRIN | dept. | 2.15 | 6.20 |

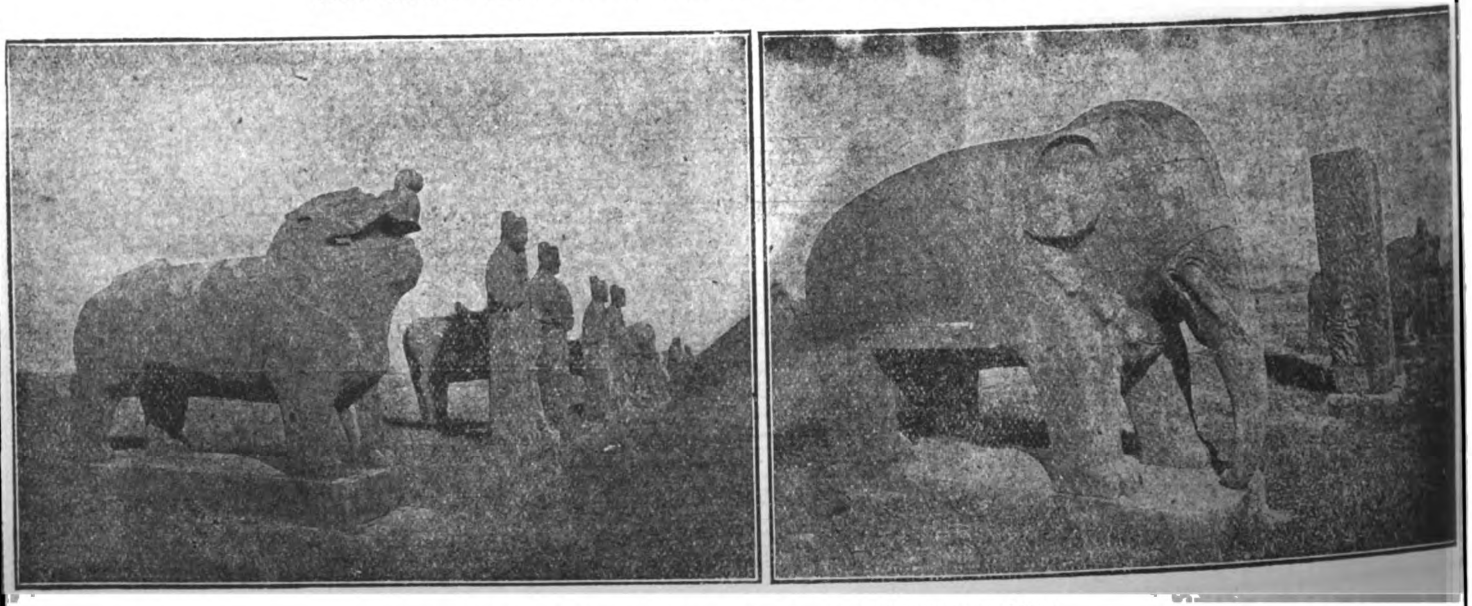


BIRD'S EYE VIEW OF KIRIN CITY

NOTICE:—" dept."=Departure. "arr."=Arrival.
1st July, 1916, and until further notice.

# THE PIENLO RAILWAY

## (KAIFENG-FU TO HONANFU)
## "THE FIRST SECTION OF THE PROJECTED CENTRAL TRUNKLINE"



THE SUNG TOMBS NEAR KAIFENG-FU ON THE PIENLO RAILWAY.

The line connects with the through service of the Peking-Hankow Railway at Tcheng Tchéou, enabling the traveller to visit Kaifengfu, the provincial capital of Honan, and the old capital of the Empire at Honanfu.

# General Electric Company

## Schenectady, N. Y., U. S. A.

### Products

- Air Brakes
- Circuit Breakers
- Compensators
- Compressors
- Controllers
- Converters
- Cooking Devices
- Fan Motors
- Generators, Alternating and Direct Current
- Generating Sets
- Heating Devices
- Hoists, Electric
- Instruments
- Lamps, Arc
- Lamps, Incandescent
- Lightning Arresters
- Line Material
- Locomotives, Mine, Railway and Industrial

## Getting the Utmost Return From Invested Capital

Capital and labor conditions make efficiency imperative. Every machine in a factory, every foot of its floor space, every employee must yield a maximum return on the investment.

A G-E motor can be applied to drive each of your machines at its maximum productive speed, even though this speed vary for each second of the machine's operation.

A G-E motor on each of your machines allows the best use of floor space, making every machine to which it is applied independent of lineshafting and belts.

G-E motors can be connected to a curve drawing meter which will record when each machine is started or stopped as well as show the amount of power consumed at any moment. This graphic record forms an excellent means of discovering efficient employees.

Our engineers will be pleased to study local conditions and suggest suitable electric equipment.

**Write our nearest representative**

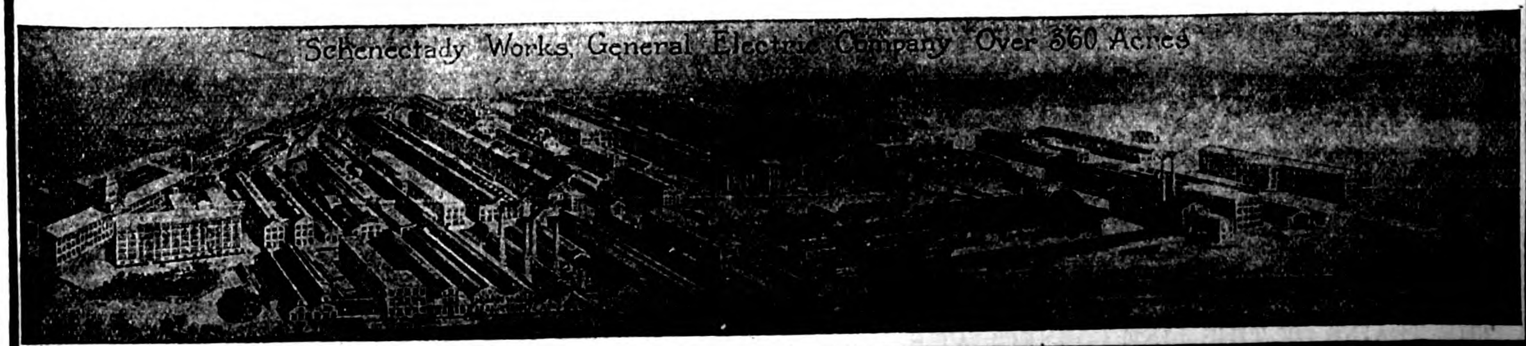
5711

### FAR EASTERN REPRESENTATIVES

**Yokohama**—General Electric Company, 23 Water Street
**Yokohama**—Bagnall and Hilles, 42, Yamaschita Cho.
**Tokyo**—Mitsui Bussan Kaisha, Ltd., 1, Suruga Cho.
**Shanghai**—Andersen, Meyer & Co., 5 Yuen Ming Yuen Road
**Manila**—Frank L. Strong Machinery Co., Correspondent, 64-68 Calle Echague

### Products

- Meters
- Motors
- Motor-Generators
- Panel Boards and Cabinets
- Projectors, Searchlight
- Pumps, Electrically Driven
- Railway Equipment
- Rectifiers, Mercury Arc
- Regulators
- Rheostats
- Supplies, General
- Switchboards
- Switches
- Transformers
- Turbine Generators
- Watthour Meters
- Wire and Cables
- Wiring Devices

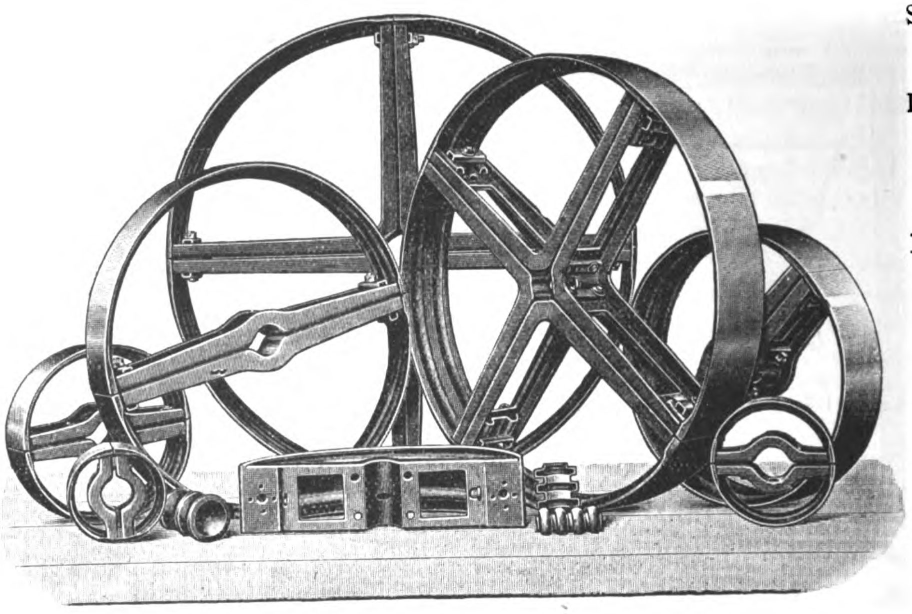


SHANGHAI MACHINE COMPANY

ALL SIZES STOCKED

STEEL PULLEYS.
LEATHER BELTING.
BALATA BELTING
HANGERS.
BRACKETS with RING OILING BEARINGS.

SHANGHAI. HANKOW. TIENTSIN.

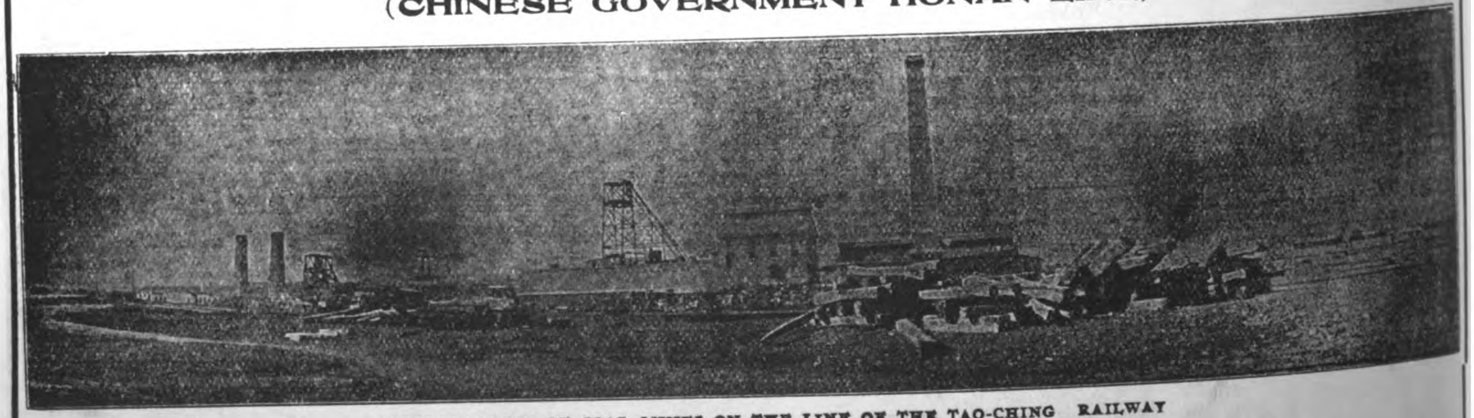


CHINESE GOVERNMENT RAILWAYS

THE TAO-CHING RAILWAY

TAOKOU TO CHINGHUA

(CHINESE GOVERNMENT HONAN LINE)



GENERAL VIEW OF COAL MINES ON THE LINE OF THE TAO-CHING RAILWAY

"China's Road of Anthracite"

THE TRAINS OF THIS LINE CONNECT AT SIN-SIANG-SIEN WITH THE THROUGH SERVICE OF THE PEKING-HANKOW RAILWAY. IT TAPS THE GREAT ANTHRACITE COAL DEPOSITS OF SHANSI, AND CONVEYS THE PRODUCTS OF THE MINES TO THE NEAREST NAVIGABLE RIVER.

# Diamond Chains

FOR

## CYCLES

Diamond Cycle Chains are accurately manufactured from the highest quality steels, which are heat-treated by a scientific and improved method. They are strong and dependable, being used by a majority of the American bicycle manufacturers as standard equipment.

Diamond roller cycle chains are furnished both ½ inch and 1 inch pitch, and we also have a complete line of 1 inch pitch block chains for cycles.

We are also prepared to serve the trade promptly with chains for Motorcycles, Automobiles, Motor Trucks and Power Transmission.

***Special care given to Export shipments. Correspondence solicited in any language. Catalogue, samples and prices on application.***

Australian Representatives: Acme Cycle Company, Melbourne.
Russian Representatives: International Manufacturers Sales Co., Moscow.

**DIAMOND CHAIN & MFG. COMPANY**
**Indianapolis, Indiana, U. S. A.**

Cable Code—A. B. C., 4th and 5th Editions.
Cable Address—"*Chain*", Indianapolis.

# GOULDS PUMPS
## FOR EVERY SERVICE

THE many years of experience which this company has had in furnishing pumps to the export trade has given us an intimate knowledge of the pump requirements in every civilized country.

*Fig. 3000 Centrifugal Pump*

This experience has enabled us to develop and manufacture for export business, a line of pumps which is unequalled anywhere.

*Fig. 1454 Deep Well Working Head*

***This line consists of***
**Triplex Power Pumps**
**Deep Well Power Pumps**
**Centrifugal Pumps**
**Hand and Power Pumps**
**for Pneumatic and Gravity Water Supply Systems**
**Spray Pumps**
**Diaphragm Pumps**
**Vacuum Pumps**
**Rotary Pumps and many other types for standard and special services.**

*Fig. 1604 'New Alert' Double Acting Air and Water Force Pump*

***Write for Catalogue which describes complete line.***

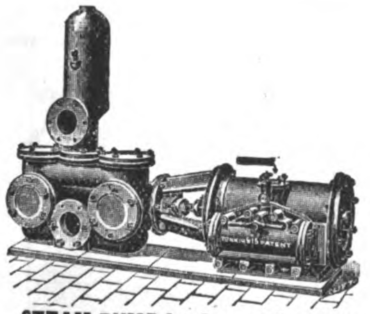
# The Goulds Manufacturing Co.

**Main Office and Works**
**Seneca Falls, New York, U. S. A.**
**Cable Address: "Glavis Seneca Falls"**
**A. B. C. Liebers, Western Union and Private Code**

**Andersen, Myer & Co., Shanghai. Bagnall & Hilles, Gomei kaisha, YoKohama.**
**Pacific Commercial Company, Manila.**

## *WE MANUFACTURE*
# PUMPS
## FOR EVERY PURPOSE

To be worked by HAND, STEAM, BELT, WIND, WATER or ELECTRIC POWER.



**STEAM PUMP for General Purposes.**

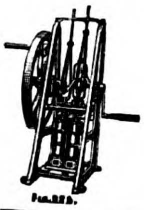
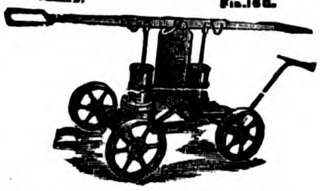
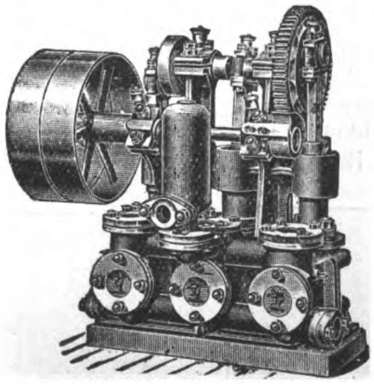
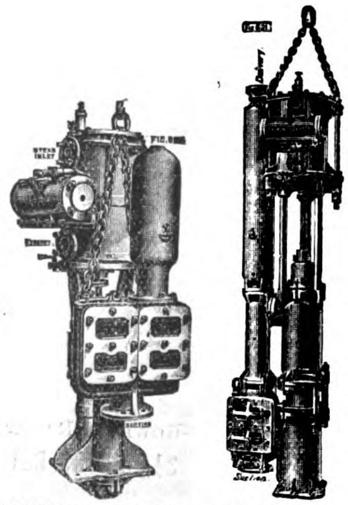


Fig. 225.

Fig. 168.



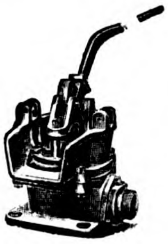




**SINKING PUMPS for COLLIERIES, MINES, Etc.**

Fig. 191.

***Write for "Eastern" List.***



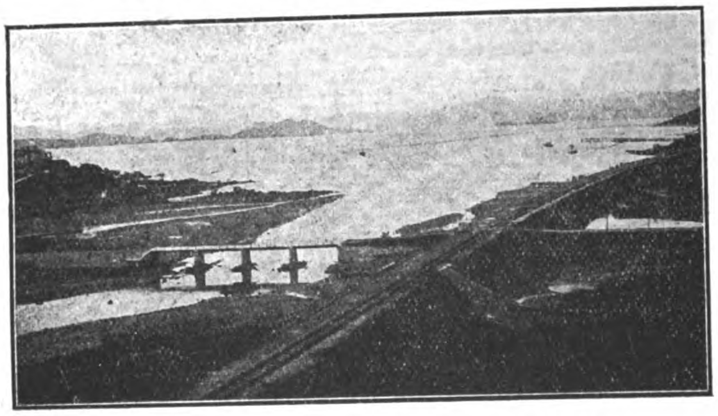
# JOSEPH EVANS & SONS
**(WOLVERHAMPTON) LTD.**

CULWELL WORKS,
**WOLVERHAMPTON, ENGLAND.**

Fig. 188.

# CANTON-KOWLOON RAILWAY

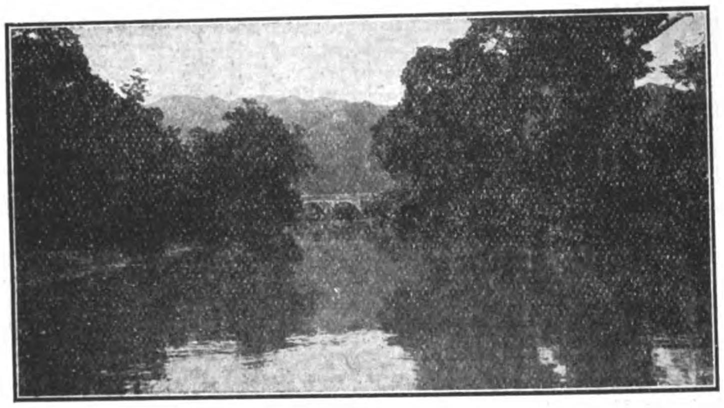
VIEWS ON THE BRITISH SECTION (22 MILES) — VIEWS ON THE CHINESE SECTION, 89 MILES. (Chinese Government Railways)



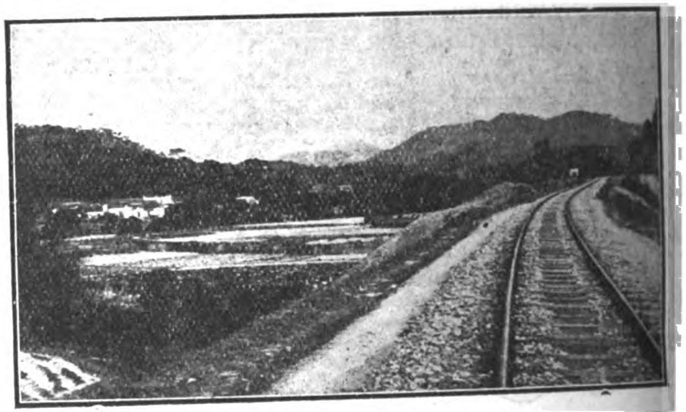
CANTON-KOWLOON RAILWAY—APPROACH TO KOWLOON

SCENERY NEAR CHEUNG MUK LOW—C. K. RAILWAY

**QUICKEST AND CHEAPEST ROUTE BETWEEN CANTON AND HONGKONG THROUGH VARIED AND BEAUTIFUL SCENERY**

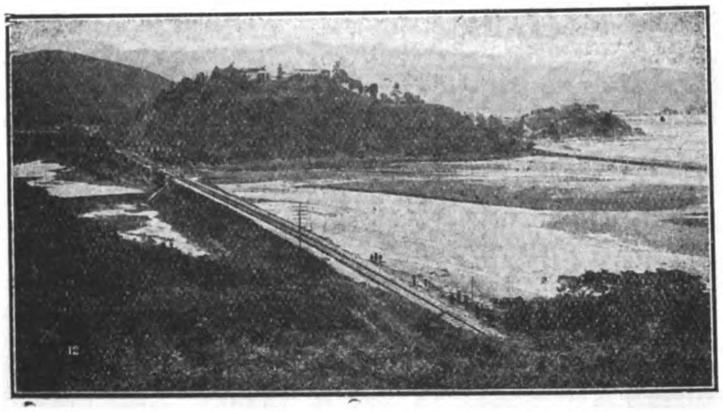


CANTON-KOWLOON RAILWAY—SCENE ALONG ROUTE

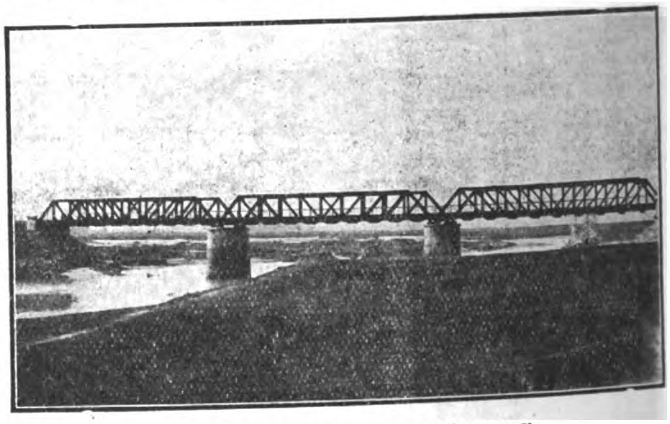


SCENERY ALONG ROUTE

**THREE EXPRESS CORRIDOR TRAINS EACH WAY DAILY—HOT MEALS AND OTHER REFRESHMENTS SERVED**

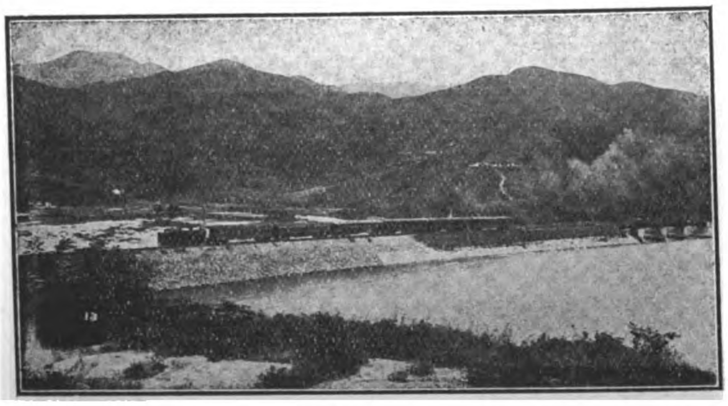


CANTON-KOWLOON RAILWAY—CROSSING TIDE FLATS

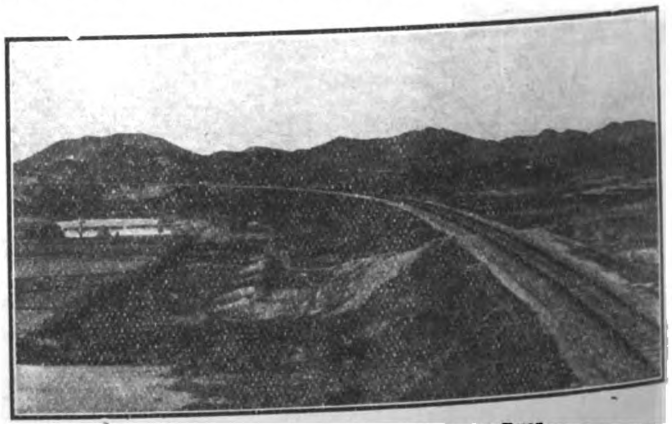


KAN SUI BRIDGE—C. K. RAILWAY

**3½ HOURS BETWEEN UP AND DOWN TRAINS FOR BUSINESS MEN OR TOURISTS AT CANTON OR HONGKONG**



CANTON-KOWLOON RAILWAY—EMBANKMENT APPROACH TO BRIDGE



GRAND CURVE NEAR SHEUNG PING

## TIME TABLE

Leave Hongkong (Kowloon) *8.05, 9.30 a.m., *12.10 p.m., & 2.30 p.m.
Arrive Canton (Tai Sha Tou) 11.45 a.m., 5.30, 3.50 & 7.15 p.m.

Leave Canton (Tai Sha Tou) *7.25, 8.35 a.m., *12.30 p.m. & *3.20 p.m.
Arrive Hongkong (Kowloon) 11.00 a.m., 4.35, 4.00, 6.55 p.m.

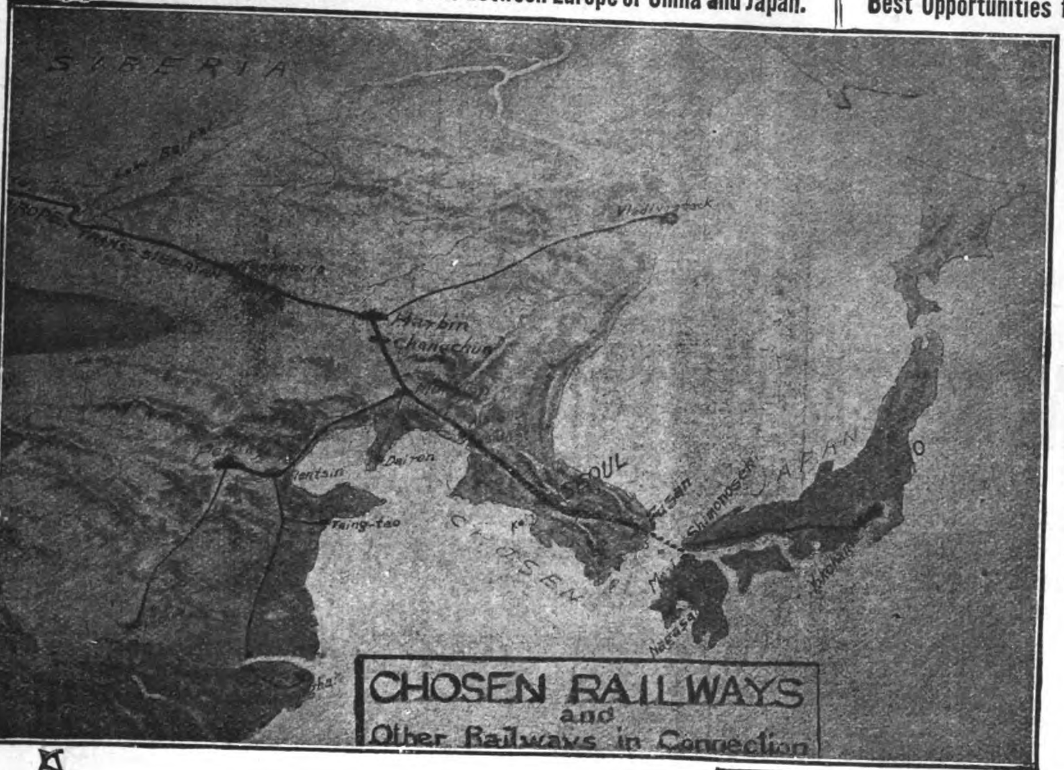
**Special terms and special trains for large tourist parties. For further particulars see advertisements or apply to**

*Express — The Manager (British Section) Kowloon, HONGKONG. — The Administration (Chinese Section) CANTON.

# Chosen Railways

**Most Important Link in the Round-the-World Routes via Siberia.**
**Safest and Quickest Overland Route between Europe or China and Japan.**

**Only 10 hours, Sea Passage between the Continent and Japan.**
**Best Opportunities for studying Unique Conditions in the Far East.**




## *Chosen-Manchuria Express*

**Fusan-Keijyo (Seoul)-Mukden-Changchun**

Weekly Service. Most Up-to-date Accommodation: 1st and 2nd Class Sleeping Cars and a Dining Car.

CONNECTIONS:

With the Trans-Siberian Express.
With the Tokyo-Shimonoseki Train de Luxe.
With the Peking-Mukden Train de Luxe.

## *Daily Express*

**Fusan-Keijyo-Antung**

Twice a day Service, taking all class Cars, besides 1st and 2nd Class Sleeping Cars (Keijyo-Fusan section only) and a Dining Car.

CONNECTIONS:

With trains on the South Manchuria Ry.
With express trains on the Japanese Rys.

## *Through Traffic*

Stations open to through traffic are as follows:—

**South Manchuria Railway.**—
Dairen, Changchun, Mukden, Yingkou, etc.

**Chinese Eastern Railway.**—
Tsitsihar, Manchuria and Harbin.

**Chinese Government Railways.**—
Hsinmingfu, Shanhaikuan, Peking, Tientsin, Shanghai, Nanking, Tsinanfu, Hankow, Nankow and Kalgan.

**Russian State Railways.**—
Irkutsk, Odessa, Warsaw, Moscow and Petrograd.

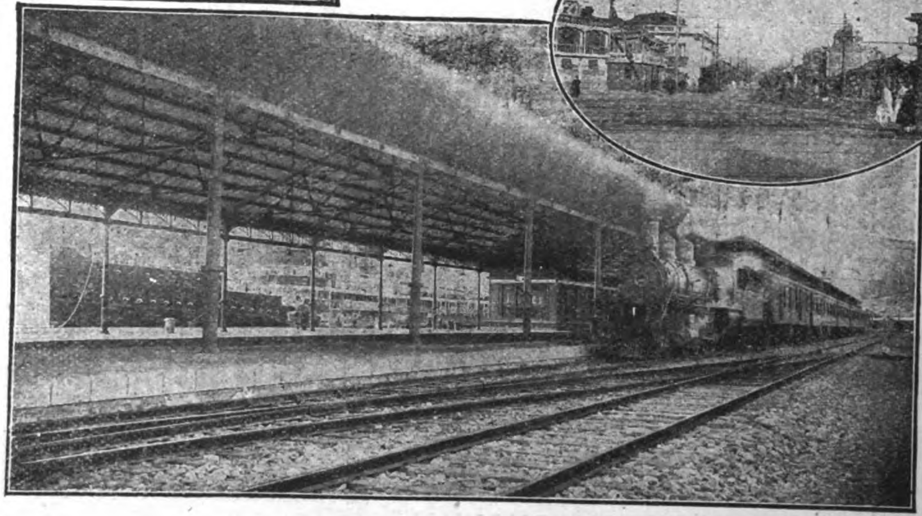
←

**Chosen Railways.**—
Fusan, Keijyo (Seoul) Heijyo, † Jinsen and † Chinnampo.

→

**Japanese Railways.**—
(via Chosen)
Tokyo, Yokohama, † Nagoya, Kyoto, Osaka, Kobe, Shimonoseki, Moji and Nagasaki.

† No through traffic to or from points of the Chinese Eastern Railway and the Russian State Railways.



Fusan Pier

A scene in Keijyo (Seoul)

## *Ticket Agencies*

The International Sleeping Car Company; Messrs. Thos. Cook & Son; The Nordisk Resebureau.

## *Hotels*

Under the Direct Management of the Railway Bureau.

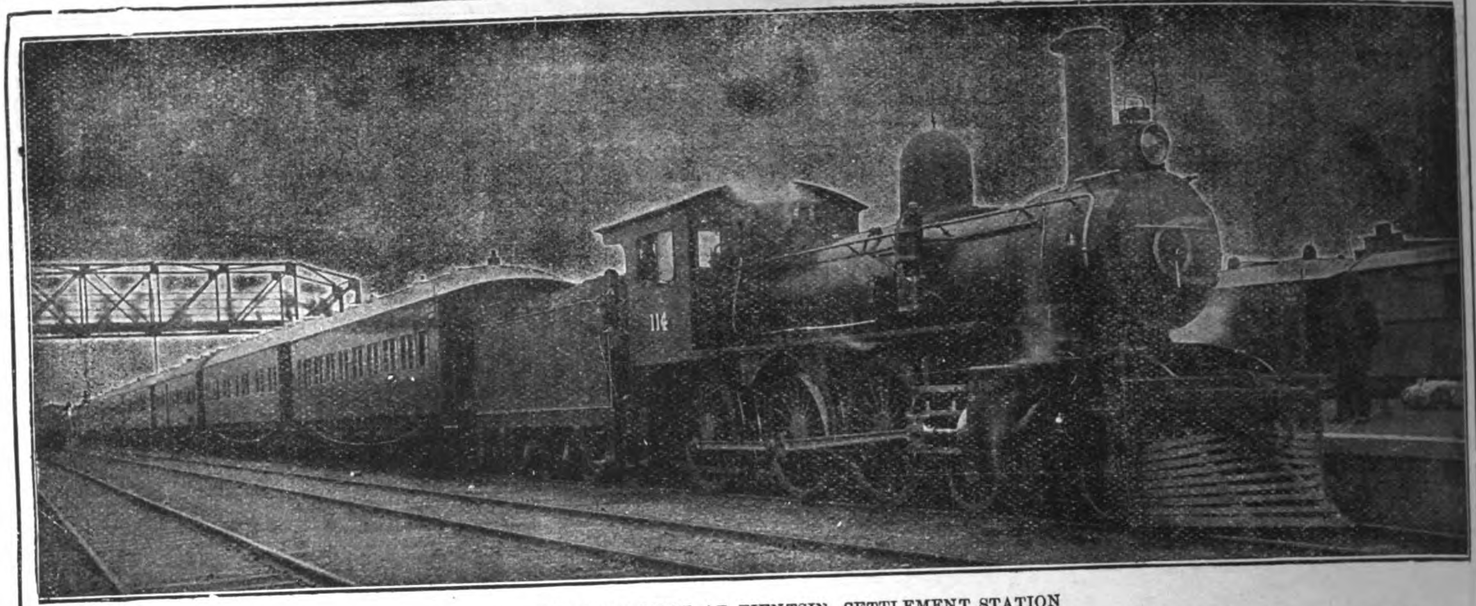
CHOSEN HOTEL AT KEIJYO (Seoul).—Cable Add: "CHOHO" 80 bedrooms mostly with bath; Motor-cars meet guests at the station.

STATION HOTELS AT FUSAN AND SHINGISHU.—The most convenient and comfortable stopping places on the upper floors of the two station buildings.

FOR FURTHER PARTICULARS PLEASE APPLY TO

# Railway Bureau of the Government-General of Chosen,

**Cable Add: "SENTETS."** **Ryuzan, Chosen.** **Code Used: A. B. C., 5th Edition.**



TRAIN DE LUXE AT TIENTSIN SETTLEMENT STATION

# CHINESE GOVERNMENT RAILWAYS OF NORTH CHINA

THROUGH SERVICE FROM PEKING TO MUKDEN, CONNECTING AT MUKDEN WITH THE SOUTH MANCHURIA EXPRESS FROM TRANS-SIBERIAN ROUTE: AT PEKING CONNECTION IS MADE WITH THE PEKING-HANKOW RAILWAY FOR HANKOW AND YANGTSZE PORTS, AND INTERMEDIATE POINTS REACHED BY THE CHEN-TAI LINE TO TAIYUANFU, THE TAO-CHING LINE, AND THE PEINLO RAILWAY TO KAIFENGFU AND HONANFU. CONNECTION IS ALSO MADE AT PEKING WITH THE PICTURESQUE KALGAN LINE, "THE ROAD TO THE GREAT WALL."

## THE RAILWAYS OF NORTH CHINA PASS THROUGH THE MOST INTERESTING PART OF CHINA

**PEKING:** THE CAPITAL, WITH ITS WALLS, PALACES, TEMPLES AND TOMBS.—**TIENTSIN:** THE GREAT TRADE CENTER OF NORTH CHINA.—**TONGSHAN:** THE LARGEST MINING AND INDUSTRIAL TOWN IN THE COUNTRY.—**SHANHAIKWAN:** WHERE THE GREAT WALL ENDS AT THE SEA.—**NEWCHWANG:** THE BUSY COMMERCIAL PORT OF MANCHURIA.—**MUKDEN:** THE ANCESTRAL HOME OF THE MANCHU DYNASTY. A MINIATURE PEKING, WITH ITS WALLS, IMPERIAL PALACES, TEMPLES AND TOMBS.

PEKING STATION

FIRST CLASS SLEEPING BERTH TRAINS DE LUXE

THE THROUGH TRAINS ARE EQUIPPED WITH BUFFET AND DINING CAR SERVICE, AND A COMFORTABLE, MODERN TRAIN DE LUXE OF COMPARTMENT SLEEPING COACHES HAS BEEN PLACED IN OPERATION THIS SEASON TO CONNECT WITH THE THROUGH SERVICE OF THE TRANS-SIBERIAN AND SOUTH MANCHURIAN RAILWAYS

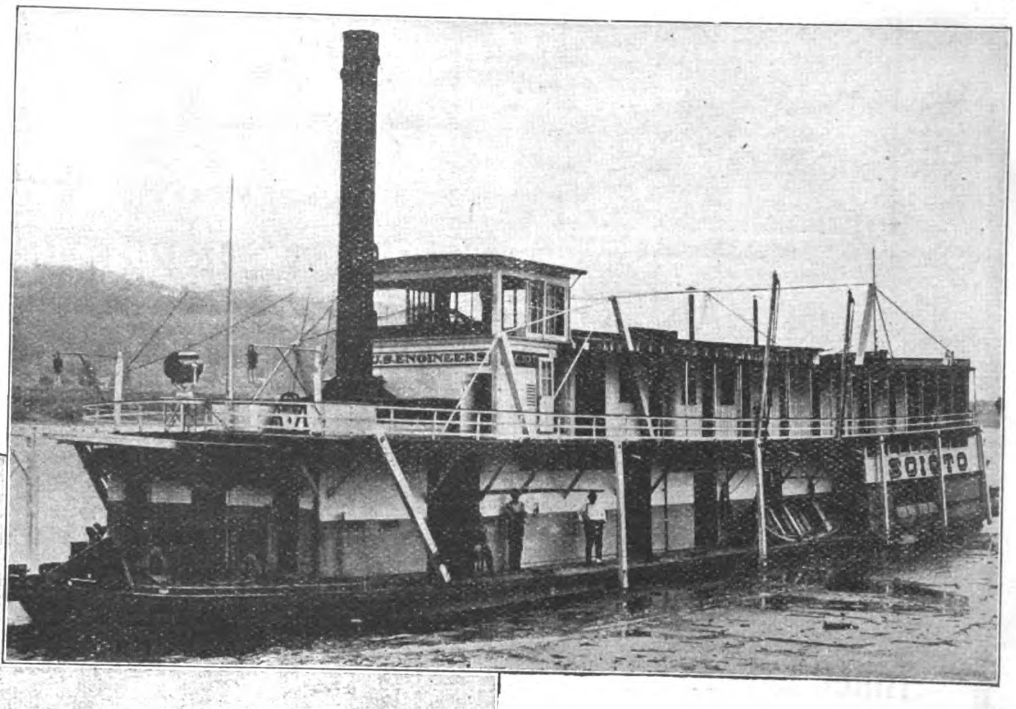
For further information apply to any office in America or Europe of

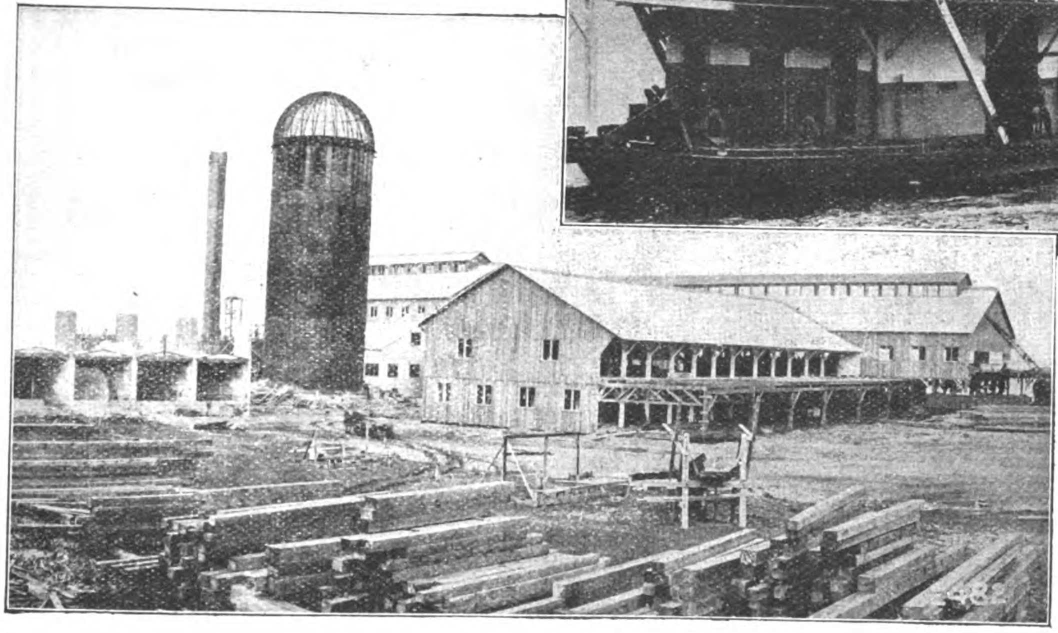
**The Cie. Internationale Des Wagons-Lits, Thos. Cook & Sons, or Railways of North China**

**TIENTSIN, NORTH CHINA**
**By order of Directorate**

# THE IRON THAT'S MADE TO LAST

Proves its Usefulness Wherever Sheet or Plate Metal is Exposed to the Forces of Corrosion.





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ARMCO IRON

The lower picture is of an Armco Iron stack and burner erected by The Seattle Boiler Works for The Puget Sound Mill & Timber Co., at Port Angeles, Washington, U.S.A. The upper shows one of a small fleet of steamboats maintained by United States Engineers for government service on the Ohio River. The hulls are of Armco Iron Plate.

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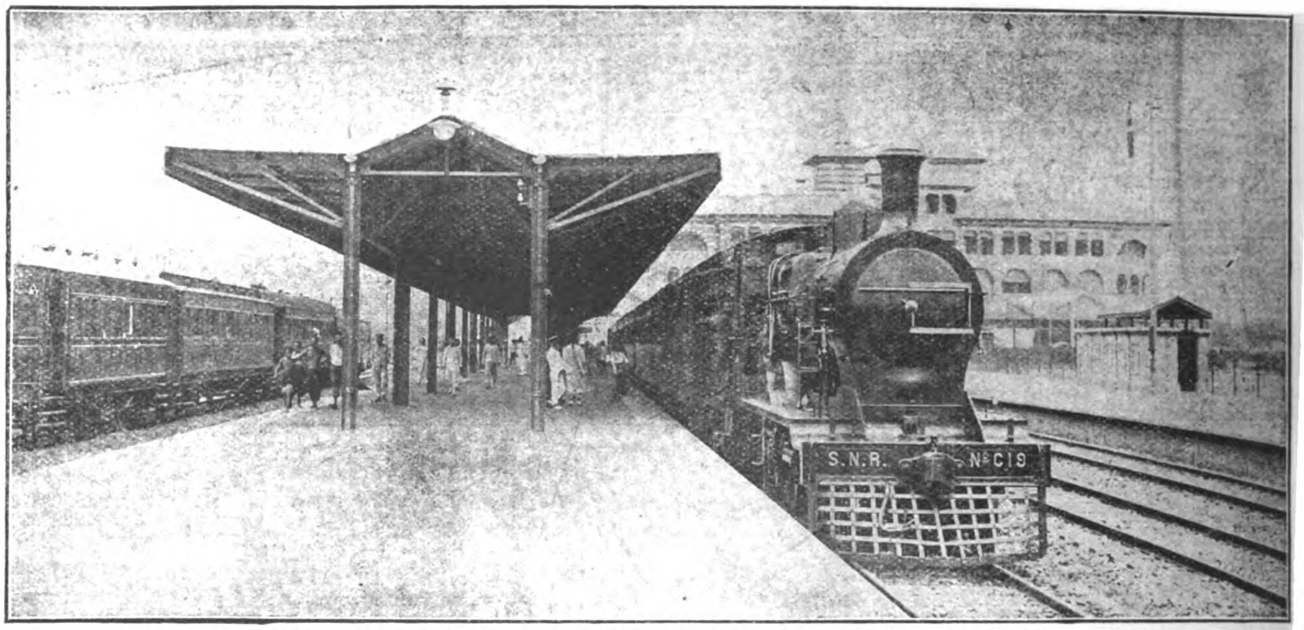


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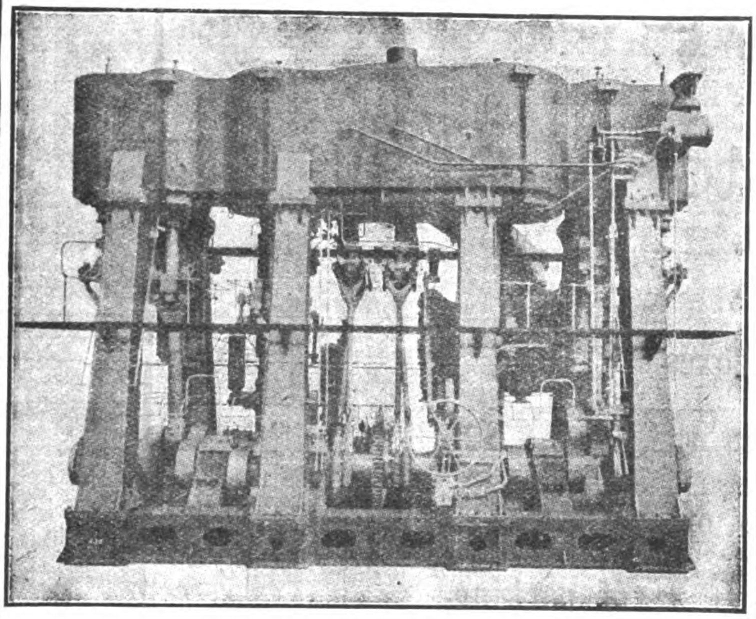

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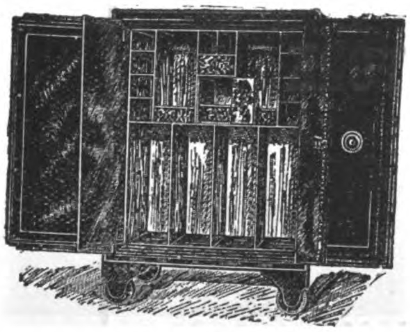

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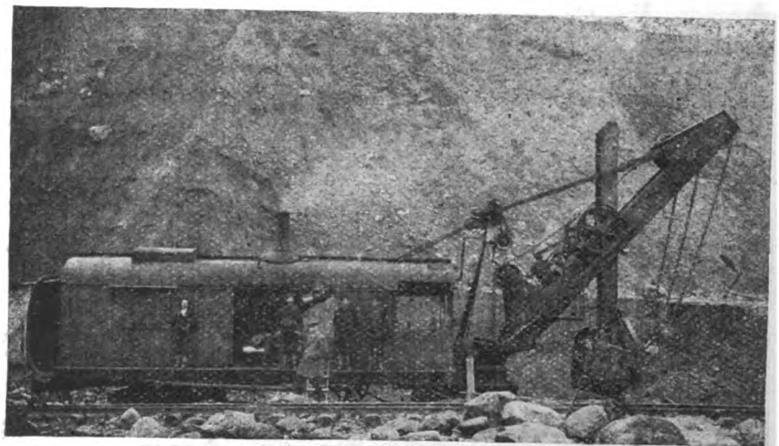

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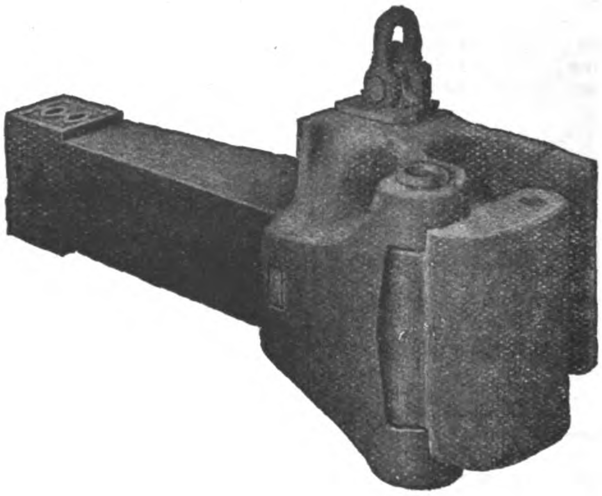
# JANNEY-PENN Coupler



THE latest development of the Janney type of M. C. B. Coupling originally introduced and promoted by this company. This coupler has all the simplicity of the early type of the Janney coupler, and also has the up-to-date features of a "Lock-to-the-Lock," "Lock-Set," and a "Knuckle-Opener," and complies fully with all the requirements and recommendations of the M.C.B. Association of the U.S.A.

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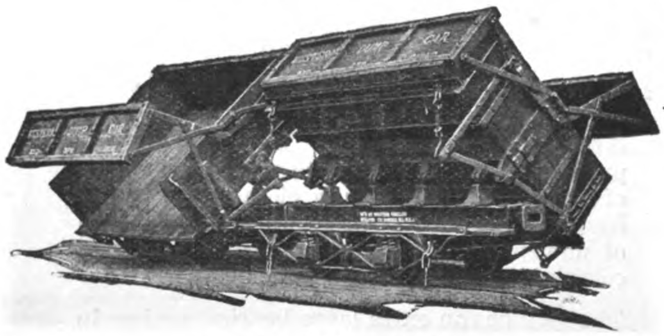

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THE FAR EASTERN REVIEW

COMMERCE :-: ENGINEERING :-: FINANCE

VOL. XIII. SHANGHAI, DECEMBER, 1916 No. 7

# NEW JUNCTION LINE AT SHANGHAI

The linking of the northern railway system of China with that of the Shanghai-Hangchow-Ningpo line was inaugurated on December 9 when the first train travelled over the junction line between the Shanghai-Nanking Railway and the Shanghai-Hangchow-Ningpo Railway, a line over ten miles long which has just been completed. Trains left Shanghai North and South and took the guests over the line. The various stations—terminii and intermediate—were decorated with flags of China and the Allied Powers while the locomotive which drew the large train out of Shanghai North carried the Chinese and British flags crossed in front. The inspection of the route having been made the guests were conducted to a large mat shed erected outside Jessfield Station, the most imposing of the stations on the line, where an excellent tiffin was served to about 300 including representatives of the foreign commercial community and a large number of Chinese merchants. There were present Messrs. C. G. S. Mackie, C. Rousse, T. H. U. Aldridge, C. H. Godfrey, Chung Mun-yew, A. C. Clear, Engineer-in-Chief of the line, D. P. Griffiths, Tsao Huang, representative of the Ministry of Communications, Col. Chao, representative of Gen. Yang Shen-teh, the City Magistrate, President of the Chinese General Chamber of Commerce, a representative of the Vice-President, a representative of the Governor at Hangchow and one of the Tuchun of Chekiang.

Tiffin was served at a series of tables which had been arranged with excellent taste by the ladies of the railway, the floral decorations being of poinsettias, the red and green of which were the railway's colours.

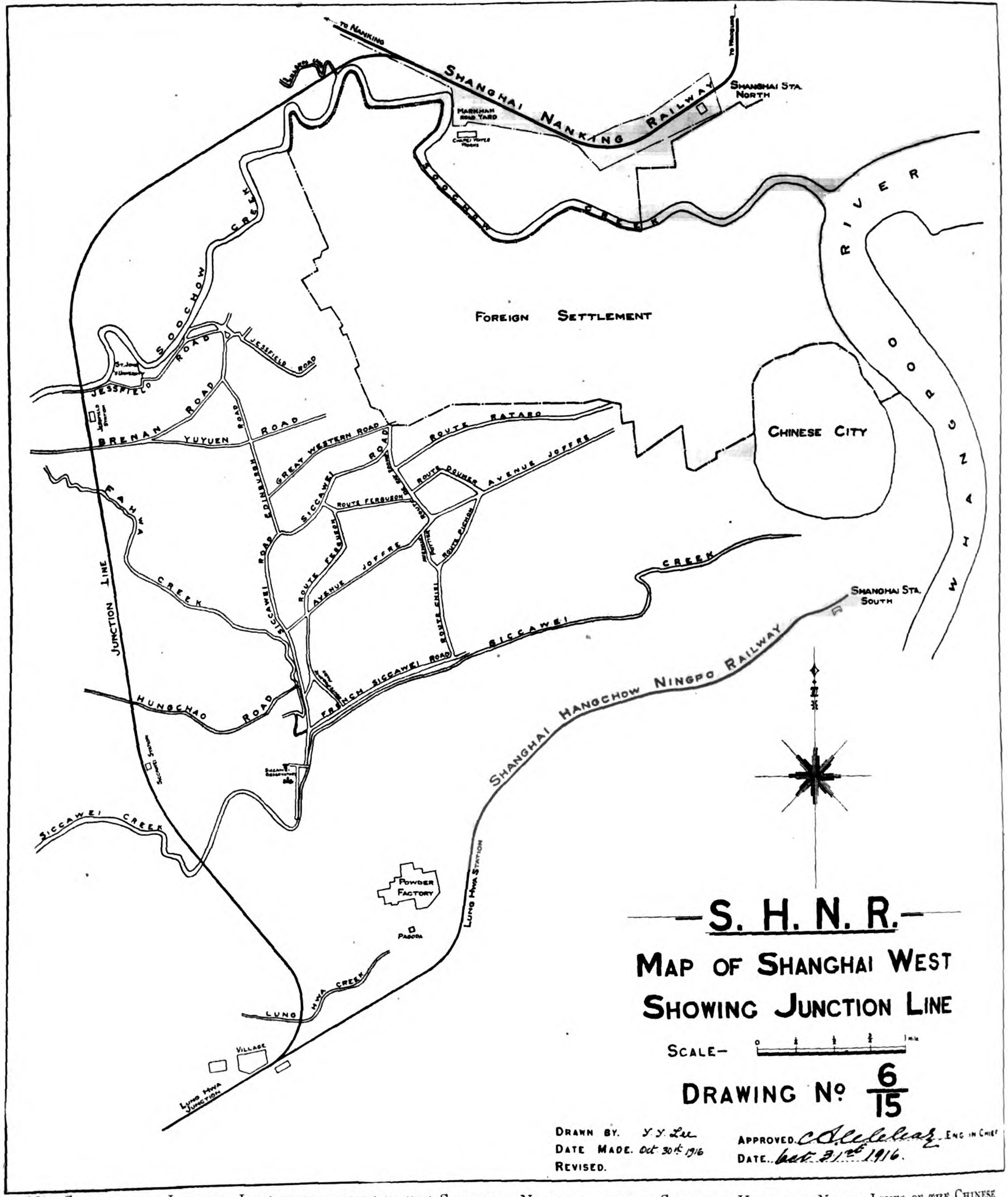
Mr. Chung Mun-yew, who acted as toast-master, stated that a telegram had been received from the Ministry of Communications expressing gratification at the completion of the work and congratulating the management on the way in which the work had been carried out. Mr. Chung Mun-yew then said:—"It appeared at one time as though Hangchow and Nanking would never be connected up with metals, because of the strong opposition exerted by the powerful gentry of these two great provinces against Government control of the entire line of railway, although the Central Government had for years built and owned the section from Nanking to Shanghai and the provincial gentry that portion from Shanghai to Hangchow, the two being separated by a small gap only. By steadily keeping the object in view and after years of patient waiting and diplomacy the Central Government finally triumphed and the public as well as the Government will benefit by the new order of things. And thanks to the high class technical skill brought into play, resulting in the ocular demonstration to which we have been treated to-day, the dream has become a reality. The technical staff, under the wise leadership of our Engineer-in-Chief, may well feel gratified with the result not only from a technical point of view but on the score of economy."

The various representatives present then addressed the meeting in Chinese, offering the congratulations of their principals upon the completion of the line, and Mr. Chung then called upon Mr. Mackie, as representing the foreign commercial interest, in Shanghai, to say a few words. Mr. Mackie said in part:—

"This line, the formal opening of which we now celebrate, forms a short but none the less important link between two railways, the value of which to the Chinese Empire is probably as yet but dimly realized.

JESSFIELD ROAD STATION FROM ROAD APPROACHES

JESSFIELD STATION, SHOWING TRAIN PLATFORM




Map Showing the Junction Line which connects the Shanghai-Nanking and the Shanghai-Hangchow-Ningpo Lines of the Chinese Railway System, giving a through track from Mukden to Hangchow

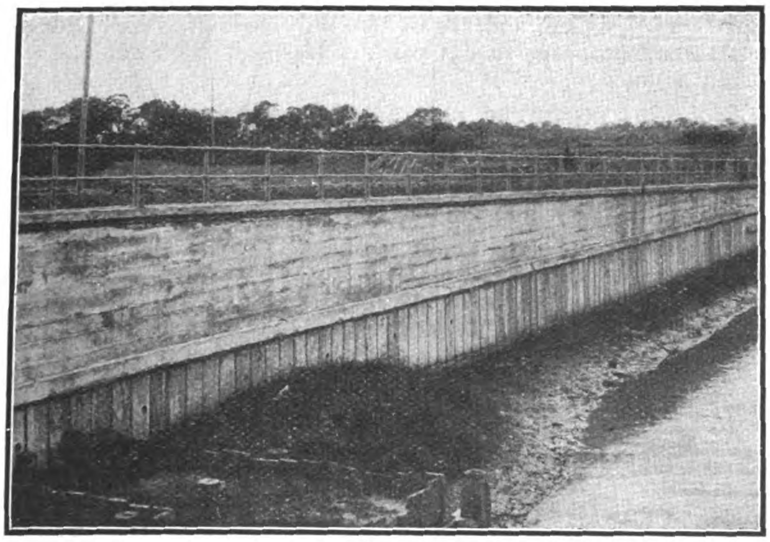
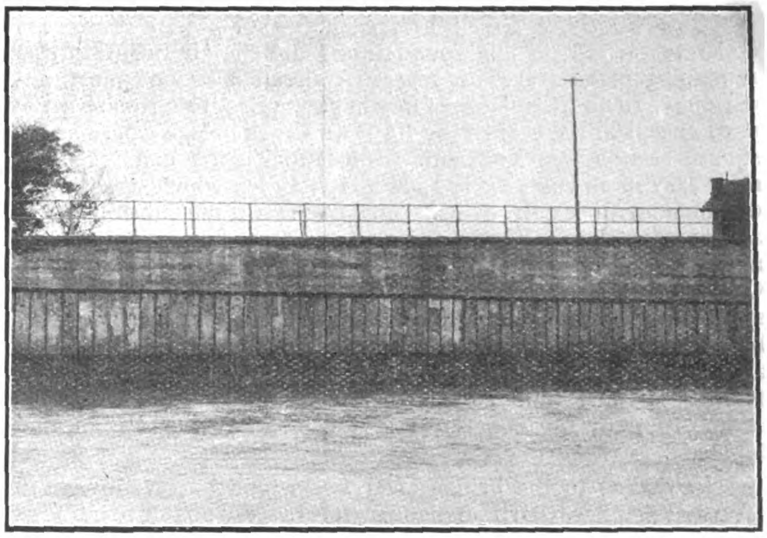
"That it will prove of immense benefit in allowing for the quick and easy transport of goods destined from one railway to the other goes without saying and I have to congratulate the executive on pushing the line through in spite of the many difficulties they have had to contend with. In conclusion, gentlemen, permit me on behalf of your guests to wish this new addition to China's growing railway system all the success that a progressive policy deserves."

Mr. A. C. Clear said:—

"The building of this line has been attended with no very great engineering difficulties beyond the ever present one of foundations, but we now have sufficient experience of the treacherous nature of the soil in this part of the country to feel ... the precautions that have been taken.

"These 10½ miles of railway form a fairly complete example of railway building in general, and have proved an excellent object lesson to our Chinese student engineers. Good, substantial and economical work has been insisted upon throughout. Thus only is that first essential of a railway's requirements obtained, that which should be summed up in the one word—safety.

"There is a great future before Shanghai, gentlemen, already it is far and away the most important commercial and industrial centre of China, and when this present terrible period of war has passed, and peace once more reigns throughout the world, we all hope that prosperity will go hand-in-hand with it. It cannot then be long before those prophecies to which I have on ... fulfilled, and we shall see

Bunding for Soochow Creek Bridge

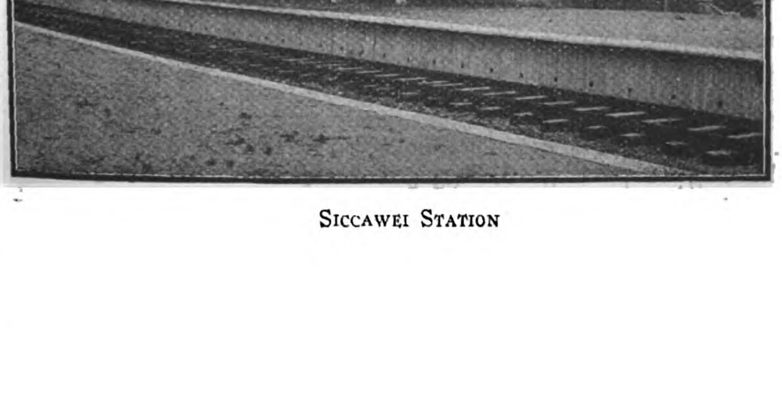
the already long line of wharves and docks on the Huangpu considerably extended. With these in direct railway communication with one of the most productive regions in China, the export trade which she needs should be built up in the most expeditious and economical manner. This Junction line forms an important link in what may be termed the Great Eastern Trunk Line of China. A glance at the map will show continuous communication from Mudken southwards to Hangchow with the exception of the Yangtze crossing at Nanking and is typical of the steady development that is taking place in this great country. Within the last few years we have been put within 12½ days of the great centres of Europe; China is no longer isolated, and it is good that we should be reminded from time to time of these things, so that we may live up to them and adjust our lives, thoughts and habits of business to meet the constant changes brought about by progress and development.

"This Junction line also affords an excellent example of the benefits of co-operation. By hearty co-operation and harmonious working between the two railways under the wise direction of Mr. Chung, mutual advantages have already been obtained, these will be still further expanded and secured by the closer working that will now be possible. It is generally understood that owing to lack of confidence in each other, co-operation in the true sense of the word is not practised between Chinese merchants, yet they hold well together in matters of politics affecting commerce, whilst their individual integrity in business matters is unquestioned. Co-operation is just as essential in business as in national affairs, and with the spirit of development now abroad it may be possible to secure that hearty co-operation which is essential to national and commercial life. This is to be sincerely hoped, as it is the soundest basis upon which to build that peace and prosperity which we all hope to see assured, not only in China, but throughout the world. To sum up, gentlemen, look ahead and co-operate."

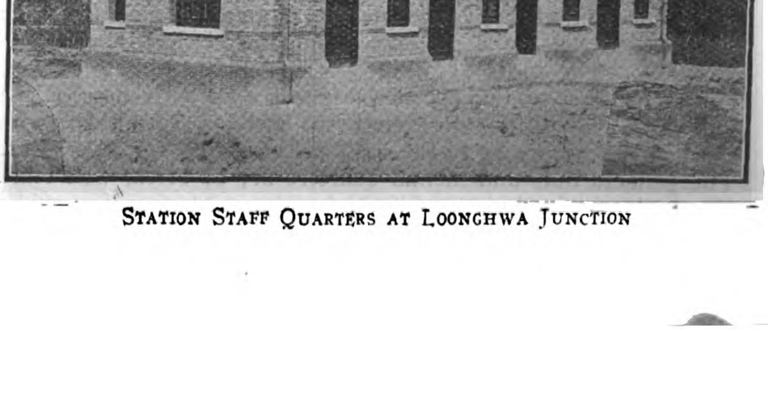
The following technical notes on the Junction Line were supplied the Far Eastern Review by the courtesy of the Engineer-in Chief:

This line links up the Shanghai-Nanking Railway with the Shanghai-Hangchow-Ningpo Railway and is 10¼ miles in length from Shanghai North on the former line to Loonghwa Junction on the latter, and is a most important link in what might be termed the Eastern Trunk Line of China. It branches off from the Shanghai-Nanking Railway main line about two miles from Shanghai North Station, crosses Woodlands Creek near Ferry Road, the Soochow Creek near St. John's University and Jessfield Park, Fa Creek, Siccawei Creek and Loongwha Creek, these five creeks necessitating major and minor bridges, the remaining creeks being culverted.

Major bridges span the Soochow and Siccawei Creeks, the spans being 145 feet and 65 feet respectively, and minor bridges span the remaining three, the spans being respectively 40 feet, 20 feet, and 30 feet for Woodlands, Fa Hwa and Loonghwa Creeks. All bridge abutments are built for double line, but steelwork for single line only has been provided. In all cases except the Fa Hwa creek bridge, the centre girders are designed for one other girder to be attached to form eventually a bridge to carry two lines of railway.



Siccawei Station



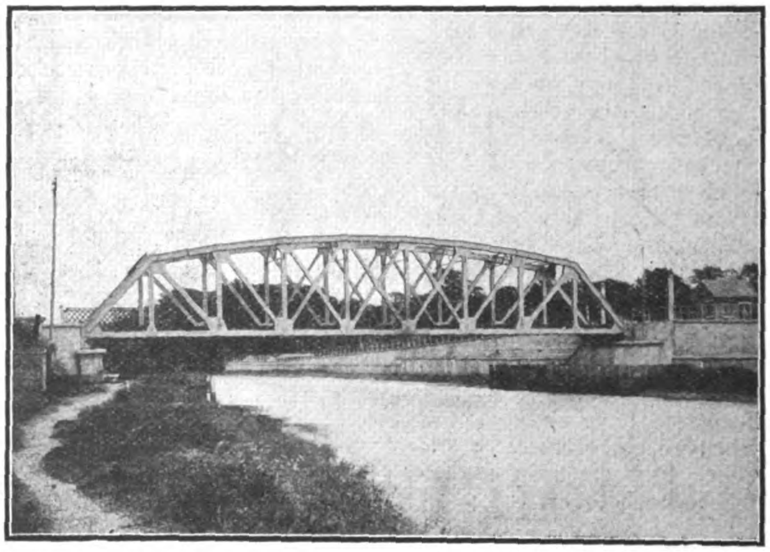
Station Staff Quarters at Loonghwa Junction

The Soochow Creek bridge abutments are of reinforced concrete carried on pile foundations, and the abutments of the remaining bridges are of massed concrete also on pile foundations. In all foundations Oregon pine piles 12″ square were used except in the case of the Fa Hwa Creek bridge where an 8″ square section was sufficient. Substantial coffer-damming was necessary in all cases except at Fa Hwa Creek which was simply dammed with earth dams. The nature of the subsoil was in all cases the same—silt, in some of the foundations softer and more treacherous than in others. In the case of the Soochow Creek bridge, the treacherous nature of the soil necessitated special precautions in the design whereby stability was ensured by spreading the weight. The ballast used in the concrete for all the bridges came from Soochow and the quarries near Sung Kiang, ¾ inch and 1" gauges being mixed together. The composition of the concrete is:—1 cement, 3 Ningpo sand, and 6 ballast.

In regard to the bridge steel-work, tenders were invited in the usual manner. British manufacturers were unable to quote as official war restrictions prevented them from guaranteeing either manufacture or delivery in a limited time. The only tenderers were the Hang Yeh Ping Ironworks and the United States Steel Products Co. The tender of the former was higher than that of the latter, and consequently the United States Steel Products Co. was awarded the contract. With the exception of the Soochow Creek bridge all the others are plate girders. No difficulty was experienced in erection, all parts fitting well together in every instance. The bridge work generally is all of a substantial character carried out in first class style in a most economical manner.

*Culverts.* The culverts are 26 in number of reinforced concrete tubes 3 feet internal diameter cast in 2 feet lengths. No bearing piles were used in the foundations, only sheet piling around the 12 inch thick concrete slab on which the tube is set. The composition of the concrete in the tubes is 1, 2, 4 and in the remainder 1, 3, 6. The wing walls are built of dry rubble neatly hand-packed.

*Earthwork.* The bank is 18 feet wide at Formation level and 26 feet in the cuttings of which there are only two, both under 3′-6″ in depth. Sufficient land width to enable the track to be doubled at some future date has been left all through. The gradients are 1 in 300 and 1 in 500 and only occur at bridge approaches, these being necessary to give the required clearances under the bridges. The stations, of which two are provided, viz. at Jessfield and Siccawei, are in gradients of 1 in 500, the platforms being 600 feet in length. These platforms are faced with specially designed reinforced concrete blocks, cast in 3 feet lengths and paved on top with quarry spawls. This type of platform wall has proved to be very satisfactory and economical. The surfacing is composed of decomposed granite well worked down between the joints of the paving spawls with a surplus of sand on top 1 inch thick.



SOOCHOW CREEK BRIDGE AT JESSFIELD—145 FOOT SPAN

In anticipation of the neighbourhood of Jessfield developing as a residential quarter a suitable station building of neat appearance and attractive design with more accommodation than either Siccawei or Loonghwa Junction stations has been provided. The roofs of all the station buildings are tiled with red French tiles, adding considerably to the attractiveness of the buildings with little difference in cost as compared with corrugated iron, owing to the high prices ruling for the latter. The gangers huts and menial quarters are of brick, well built, airy and neat in design. All the buildings, whether for public use or staff purposes, have been most carefully and conveniently planned and designed, and are well built throughout. Well-laid out station approach roads are at Jessfield, Siccawei and Loonghwa Junction.

*Permanent way.* The rails are 85 lbs. per yard British Standard Section obtained from the Hang Yeh Ping Ironworks, as were also the fastenings. The sleepers are of three kinds, creosoted Douglas Fir, Selected Japanese Oak, and a small quantity of Jarrah sleepers, the reason for adopting these different varieties being to obtain reliable data for future use by careful observations and record as to cost, wear, etc. Soochow Granite and Sunkiang Stone have been used for track ballast, bottom ballast being from 3″ to 5″ gauge and top ballast 1½″ gauge. That portion of the line already ballasted in this manner gives very smooth running. The curvature is very easy, the sharpest curve being 3 degrees and the flattest 1 degree.

Apart from the ordinary native pathway level crossings, there are four public road level crossings on the line, viz:—at Jessfield, Brenan, Hunjao and Tsao Chi Roads. The approach gradient in all cases is 1 in 30 easing off at the ends to 1 in 60, thus forming a very easy slope for all vehicular traffic. The Jessfield Road level crossing necessitated very considerable bunding, as this road runs parallel to and close alongside the Soochow Creek at the southern end of the Soochow Creek bridge. This bunding is built up of reinforced concrete interlocking piles driven down to within 8′-0″ of water level. On the top of these a reinforced concrete wall with a gradient of 1 in 30 is built to correspond with the grading of the road crossing. All these reinforced concrete piles were cast in the Railway yard close to the site, and it may be interesting to note that out of 690 piles that were made, there was not a single failure either in casting or driving. The composition of the concrete in these piles is:—1 cement, 2 Ningpo sand, 4 Soochow granite-chips ½ in. gauge and under.

Particular care was exercised in washing the ballast and sand to ensure freedom from dirt. The ingredients were carefully gauged and the concrete well mixed and rammed close around and among the reinforcing bars. All reinforced concrete was done under expert supervision. In driving the piles, caps made of layers of Chinese coarse straw-paper were used to prevent chipping at the heads from the impact of the monkey in falling, and it was found that such a cushion proved very successful, was easily renewed and trifling in cost. Including the existing bridge on the Shanghai-Nanking Railway, the waterway opening per mile for the 10¼ miles is 39 feet.

Considerable alterations have been necessary to the Shanghai North station in anticipation of the increase of traffic upon the opening of the Junction Line. An additional covered platform has been provided and improved facilities given for the expeditious booking of passengers. The Woosung Branch Line has been provided with a station building and booking office entirely separate from the Main Line building to relieve the congestion which at present exists, and which will be accentuated by the opening of the Junction Line. The coolie class booking offices for both railways are also entirely separated from the 1st, 2nd and 3rd class booking offices, adding generally to the comfort and convenience of passengers. Improvements have also been made for the handling of passengers' baggage by the provision of a commodious baggage room immediately accessible from the road, in which ample accommodation is given for the booking and checking of passengers' baggage. To provide for the goods traffic from the Shanghai-Hangchow-Ningpo Railway, a new dock 1,000 feet long by 200′-0″ wide with ample depth of water

at lowest tide to take the heaviest cargo lighters, has been built at Markham Road. Godowns have been erected upon either side and every facility given for the the rapid handling of cargo. The whole of the yard and godowns are electrically lighted, and efficient fire protection has been given throughout. The Shanghai-Nanking Railway has trained fire brigades both at the Shanghai North station and at the Markham Road Goods Depot. Emergency calls are given from time to time to test the efficiency of the brigades.

Security to the Traffic is secured by the electrical staff working which is now being installed on the Junction Line. The Shanghai-Nanking Railway has already adopted a system of electrical train staff working as far as Soochow and is now making arrangements to extend this to Nanking. It is eventually proposed to adopt a similar system on the Shanghai-Hangchow-Ningpo Railway. In addition to this a simple and effective system of signals has been erected at every station and Junction to ensure further safety in train working. All signal posts are of reinforced concrete and the lamps of Shanghai North and Markham Road Junction are electrically lighted.

The Managing Director on behalf of the Chinese Government is Mr. M. Y. Chung. Mr. A. C. Clear, M. Inst. C. E., is the Engineer-in-Chief for the whole of the work, whilst Mr. D. P. Griffith, M. A., M. Inst. C. E. Ire., carried out the executive duties of the Junction Line construction as District Engineer, assisted by the following Chinese Engineers and students:—Messrs. J. F. King, C. Y. Hung, Tong Luck, C. P. Fung and S. C. Chen. The intelligence and keen interest in their work displayed by these future engineers of China augurs well for their future success. The building of the Line afforded them a very good opportunity of obtaining knowledge of the most up-to-date methods in reinforced concrete work as well as of first class work generally. Steelwork, reinforcement and general designs were prepared by Mr. E. T. Forestier, A. M. Inst. C. E. Mr. I. Tuxford, Maintenance Engineer S. N. R, supervised construction at Markham Road and Shanghai North with Mr. T. Yang, Senior Assistant Engineer-in-charge. Telephone and Telegraph Work was carried out under the supervision of Mr. W. J. Grey, A. M., Inst. E. E., Electrical Engr. S. N. R.

# AMERICAN ASIATIC ASSOCIATION

At the annual meeting of the American Asiatic Association, held at the rooms of the Chamber of Commerce of the state of New York on October 20, Lloyd C. Griscom, formerly Minister to Japan, was elected president, succeeding Willard Straight. The list of officers follows:

President, Lloyd C. Griscom.

Vice-Presidents, Eugene P. Thomas, New York; Theodore B. Wilcox, New York; Alba B. Johnson, Philadelphia, Pa.; John B. Cleveland, Spartanburg, S. C.; Charles M. Schwab, New York; Ellison A. Smyth, Pelzer, S. C.

Treasurer, Joseph R. Patterson, New York.

Secretary, John Foord, New York.

Executive committee, class of 1919, George C. Allen, New York; H. E. Cole, New York; Willard Straight, New York.

Mr. Straight, the retiring president, reviewed general conditions in the Far East, saying in part:

Although during the past year there have been a number of important developments in the Far East, the fundamental situation has remained substantially unchanged. The death and consequent elimination of Yuan Shih-kai, and the conclusion of the agreement between Russia and Japan with regard to their respective interests in Manchuria and Mongolia, were merely the logical results of the trend of events which for some time had been manifest.

Considerable concern has been expressed in this country lest the open door for American trade in China would be closed, and efforts have been made by some to stir up ill feeling and apprehension on the part of the public with a view to creating difficulties between the United States and Japan. With these efforts your executives have not been in sympathy.

We have felt it to be the part of wisdom to watch developments rather than to attempt to express from time to time our views as to a situation which was constantly changing.

Despite political perplexities in the Far East, American trade, both with China and Japan, has increased considerably. New firms have been organized and old firms have been strengthened, and there seems to be an increasing interest in the possibilities of Far Eastern trade, both among those who wish to export to Eastern Asia and those who are commencing to import Asiatic products.

Our trade with the Philippines has also increased, and despite political uncertainties there seems a growing readiness on the part of American investors to place money in Philippine developments.

During the past year also, the ownership of the Pacific Mail Steamship Company has passed to the American International Corporation and W. R. Grace & Co., and the transpacific service, which had been discontinued by the previous management, has now been resumed. American banking interests, which for the past few years have evidenced little activity in China, have recently concluded contracts which should materially benefit American trade.

After a number of years of agitation Congress has finally appropriated a sum sufficient to purchase adequate accommodations for the American Consulate General, the Consulate Court and Post Office in Shanghai. The work of Thomas Sammons in this connection should be highly commended, and I believe the association is to be complimented on the part which it played in bringing about this happy result.

During the year just past Julean Arnold, Commercial Attache at Peking, has shown a commendable interest in introducing American goods in China. Mr. Arnold is now in this country traveling from point to point, and has been successful in organizing a number of China-American trade clubs.

In order to meet what is apparently a growing interest throughout the country in Far Eastern matters it has now been determined to enlarge the "Journal of the American Asiatic Association" and make it more popular in character with a view to increasing its circulation, at the same time enlarging the scope of the activities as well as the membership of this association.

In conclusion I desire to express my appreciation of the honor which you have in the past done me in conferring upon me the presidency of this association. I believe the association is to be congratulated in the election of Lloyd Griscom for the ensuing year. The fact that Mr. Griscom served as Minister to Japan, his long experience in the diplomatic service, as well as his intimate knowledge of Far Eastern problems, make him particularly fitted to direct the activities of this association.

# CHINESE HONOR DEAD PATRIOT TSAI AO

General Tsai Ao, leader of the Anti-Monarchical revolution in 1915 which brought about the overthrow of Yuan Shih-kai, died at Fukuoka in Japan aged 36 of cancer of the throat and his remains were brought to Shanghai on December 5, to lie in state at the Hall of the Szechuen Guild pending arrangement for their transportation to the General's birthplace in Hunan.

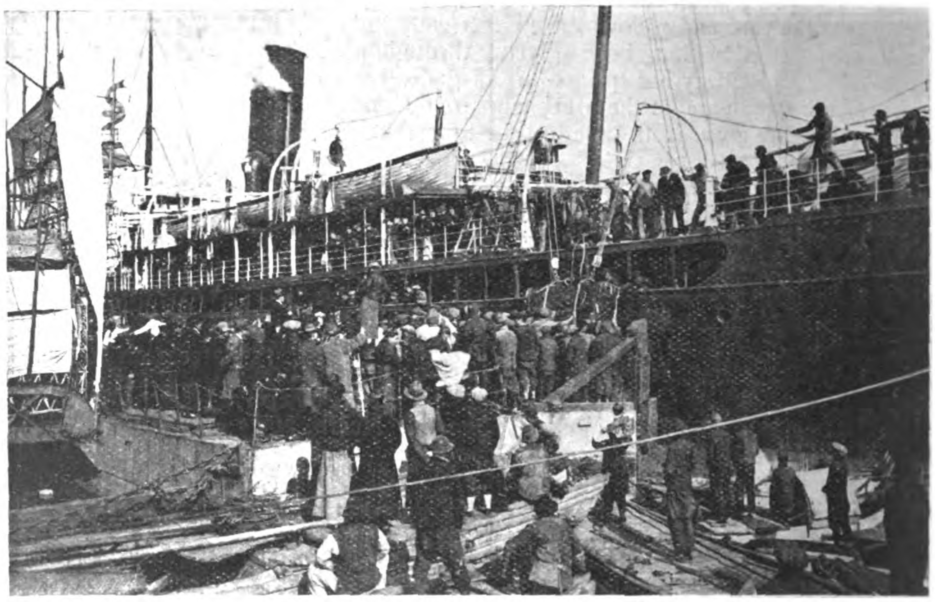
The illustrations on this and the opposite page bear testimony to the high esteem in which the dead patriot was held in the hearts of the people. The line of march of the funeral procession through the foreign settlement of Shanghai was crowded with those desiring to pay a last tribute to the dead soldier whose victory over the legionaries of Yuan in Yunnan and Szechuen confirmed for them the Republican Government which they so hardly won from the Manchus in 1911.

The whole Chinese community was in mourning and from all parts of the Settlement and in French Town, the Chinese City, and the surrounding district the five-barred flag of the Republic was flown at half-mast. Over 5,000 men were in line. All the roads were packed by thousands who had waited patiently since early morning for the arrival of the procession. The American navy was represented by about 50 marines headed by three carrying the American flag. There were about 30 Japanese who were personal friends and admirers of the General. The student body was represented by 10 schools, among them the Nanyang College, Fuh-Tan College, Normal College, Commercial Academy, Pootung Middle School, Y. M. C. A. School, Tung-Yi Girls School and several others. Three troops of Chinese boy scouts made a fine impression. Vice-President Feng Kuo-chang and the Cabinet sent representatives to help with the arrangements and offer sacrifice to the deceased.

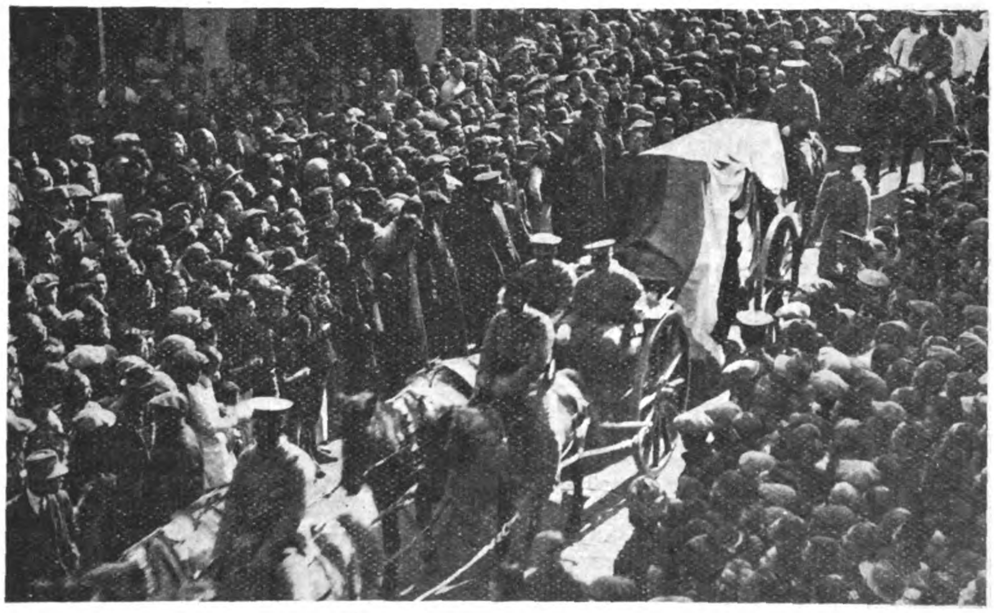
The procession in French Town was led by 4 French police officers who conducted the line to Honan Road where mounted Sikhs of the International Settlement, eight in number, were in waiting. The Band of the Shanghai Orphanage followed the Sikhs. Then came the schools and other institutions. They were headed by students carrying scrolls and flags. Following the student body were the Nantao and Chapei Fire Brigades and the Chinese commercial body as well as the Chinese volunteers, who wore plain clothes because their uniforms are being changed.

An interesting feature was that three sons of the late President Yuan Shih-kai sent scrolls to be displayed at the Szechuen Guild, whereto the remains of the deceased general were taken. The scroll sent by the second son, Yuan Ko-wen, who is popularly understood to have bitterly opposed the monarchical plot, was the subject of special comment. It said in part:

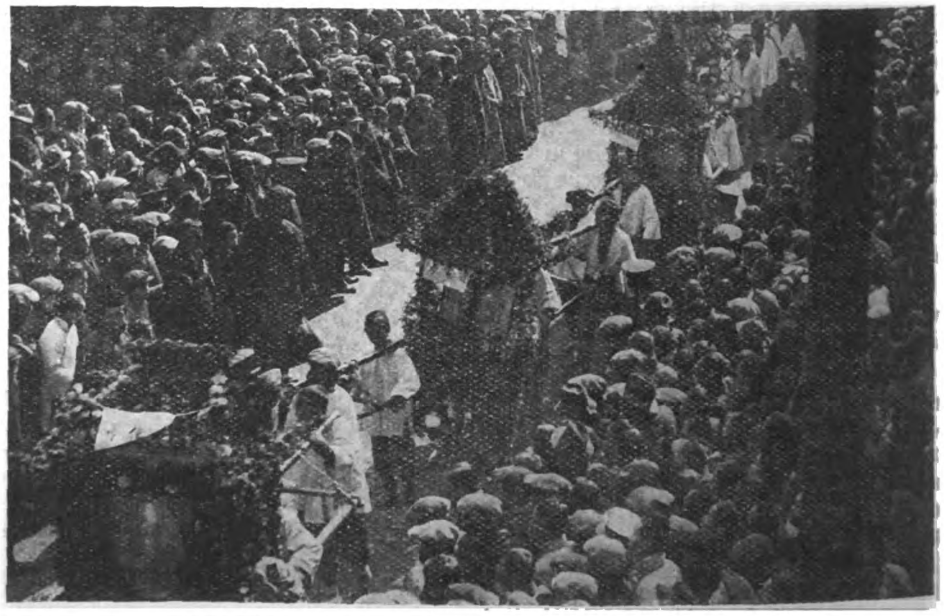
You were the model of the people.
You were the model of the army.
You were the soul of the Republic.
You were the spirit of Liberty.



LANDING OF THE COFFIN

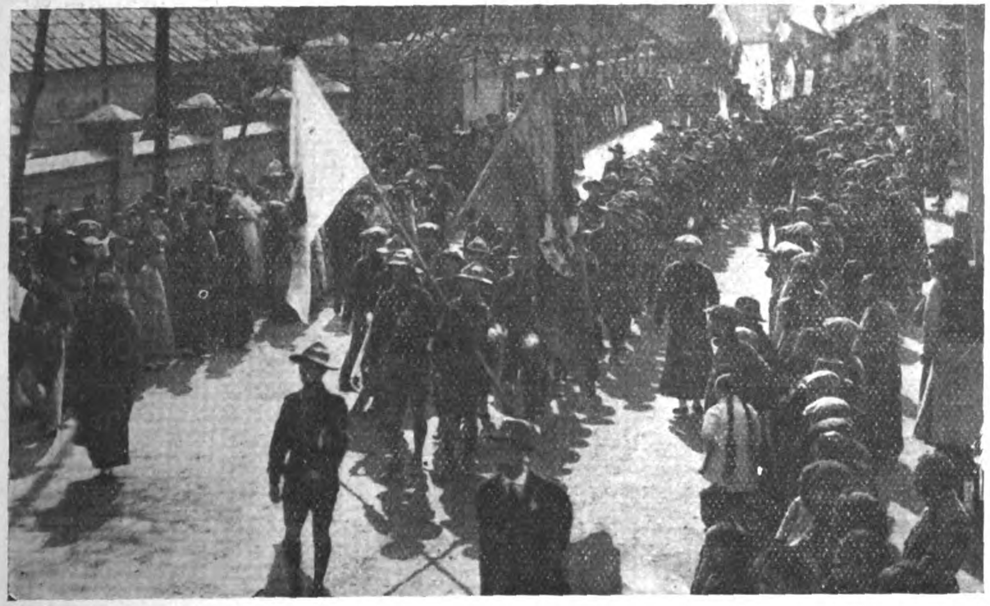


CAISSON BEARING THE COFFIN

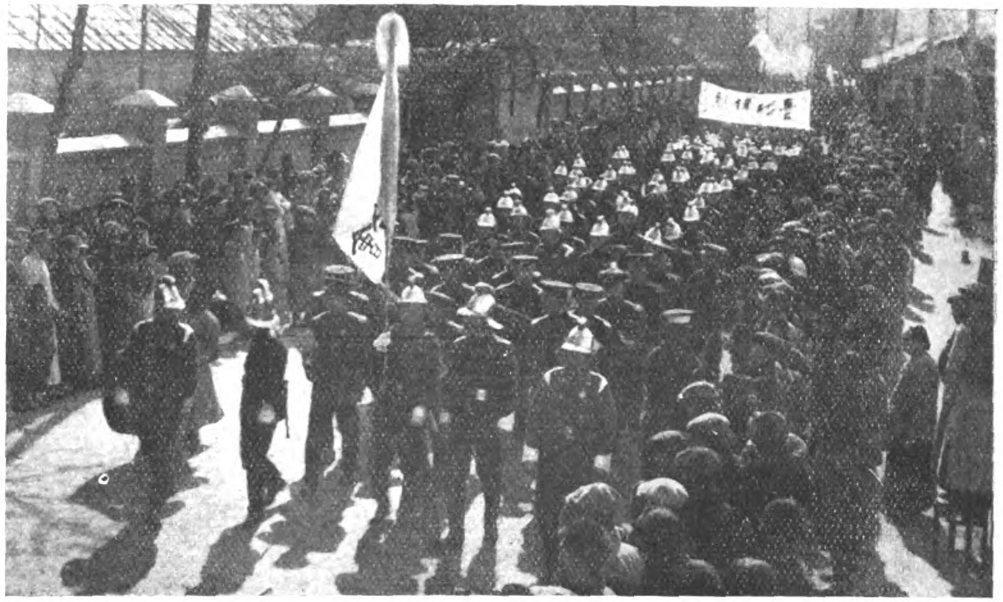


FLORAL TRIBUTES AND SCROLLS FROM SONS OF YUAN SHIH-KAI

# SCENES ATTENDING FUNERAL OF GENERAL TSAI AO



SHANGHAI CHINESE BOY SCOUTS IN FUNERAL PROCESSION



CHINESE FIREMEN FROM CHAPEI DISTRICT OF SHANGHAI

MARINE BAND AND GUARD OF HONOR FROM CHINESE WARSHIPS

SECTION OF THE MILITARY CONTINGENT FROM THE KIANGNAN ARSENAL

# SHOULD AMERICA CO-OPERATE WITH JAPAN IN CHINA?

The campaign to bring about co-operation between Japan and America in the "peaceful exploitation of China" has gained the powerful support of Judge Elbert H. Gary, President of the United States Steel Corporation. The fact that the movement has secured the support of a man who is indubitably farsighted, and who occupies a position of great prominence among the industrial leaders of a world may be sufficient to cause a number of people to conclude, without further investigation, that the advocates of co-operation should be abetted. While not desiring captiously to criticize Judge Gary's considered opinion the writer feels that it is desirable that the people of America should have placed before them the reasons for his belief that co-operation between America and Japan in the commercial and industrial exploitation of China would have disastrous results, both material and moral. He feels that he is qualified to enter the arena of discussion because, just after the anti-Manchu revolution of 1911-12, he was approached by the representative of an important Japanese financial and industrial concern and asked to assist in propagating the belief that it would be mutually advantageous for foreign capitalists and commercial men interested in China, especially British, to work through Japan. The Japanese gentleman went very fully into the question, and urged the case for co-operation more fully and more eloquently even than did Baron Shibusawa on his recent trip to America. He was much more outspoken than Baron Shibusawa could afford to be in his public utterances. In essence, he argued that the Japanese had a comprehensive knowledge of the Chinese, their language and of China's resources; they had no reputation for altruism to maintain and consequently, when the Chinese authorities proved unwilling to grant a concession or franchise, they would bring the necessary pressure to bear in a manner that the European nations and America would hesitate to adopt, and finally, that Japanese supervisors of Chinese employed in railroad building and operating and similar work, equipped as they would be with a complete knowledge of Chinese methods of peculation and ways of increasing costs at the expense of the foreigner, would be able to effect huge economies and thereby vastly increase profits. There were other reasons advanced, but the three enumerated above were the more important. The writer did not interest himself in the suggestion mainly because he believed that the Japanese wished to use the capital of other nations in China to tighten Japan's political grip on the country and eventually to undermine the interests in China of the very nations whose capital Japan would be employing. That was the view he took in 1912 and he sees no justification for a change of opinion to-day.

Of Judge Gary's bona-fides there cannot be the slightest doubt. When he told the financiers and commercial men of America that co-operation with the Japanese in China is advisable he was commending a policy that he believed, as a result of personal observation in China and conferences with leading Japanese statesmen and captains of industry, would be mutually beneficial. And it must be admitted that, in the absence of a more profound knowledge of the situation than could possibly be gained by the most acute observer in the course of a flying trip to the Far East, the conclusion at which Judge Gary arrived was almost inevitable. He found Japan an organized and efficient nation. She had banks that rank with the best managed institutions of the kind in America or Europe; she had magnificent lines of steamships which showed the Japanese flag in every commercial sea; she had business houses whose organization and credit could not be improved upon, and her Government gave intelligent and sustained support to the development of her natural resources and industries. Added to that she had, in a comparatively few years, changed the chaos that prevailed in Korea before she annexed the country into a state of peace and prosperity. What she had done in Korea she could do in China, and if American capital co-operated with Japanese brains and industry in the work America would share in the increased trade that would ensue from a perpetuation of peaceful conditions and the inauguration of reform in China. That is a view that might well be taken by anyone who has not made a particular study of the Far Eastern question, and who is not aware of the results that have followed the co-operation of foreign capital and Japanese brains and enterprise in South Manchuria.

It is desirable at the outset to inquire what is actually meant by "co-operation between America and Japan in the peaceful exploitation of China." Judge Gary does not seem to have committed himself to any clear definition of what he understood by co-operation. In an interview with a representative of the *New York Herald* he said:

> "In the development of China and the fair distribution of her business, which is bound to increase by leaps and bounds, the United States and Japan can and should co-operate *to the fullest extent.*"

In an address before the Iron and Steel Institute of America on October 27, he said that the public men of Japan

> "Realize that the geographical locations of these two countries should make them practically allies although acting independently and in their individual capacities and interests. And, from the business standpoint, the Japanese manufacturers, merchants and financiers are desirous of co-operating with those in the United States, to the fullest extent, in protecting and promoting the welfare of both and at the same time benefiting those in other countries with whom both of us may be conducting business. They understand and appreciate the spirit of co-operation which has actuated the men engaged in our lines of business and they would be pleased to consider with us all legitimate plans for the application of this principle."

This quotation would lead to the inference that Judge Gary means something by "co-operation" vastly different from the interpretation put upon the word by the Japanese, but in the interview published in the *New York Herald* he speaks of "co-operation to the fullest extent," which brings him up alongside Baron Shibusawa. No one could possibly misunderstand what Baron Shibusawa means by co-operation. He has said in set terms that America has practically unlimited capital while "Japan has the men—men able, trained and capable of holding the positions of managers, engineers and foremen who are versed in the ways of the Chinese and understand their traditions and prejudices. They can be hired much more readily and at much less expense than Americans." Baron Shibusawa also remarked that in the absence of co-operation "our activities in the Chinese market might lead to hostile competition, mutual distrust and bitter animosity, which might be mutually disastrous." This language is brutally frank. America is to be permitted to invest her capital in China, by grace of Japan, but she is not to be permitted to choose her avenues of investment nor to appoint American citizens to safeguard her interests. Few Americans will be found who are ready to admit that in the planning and carrying out of great enterprises America must yield the pride of place to Japan. Co-operation of the kind indicated by Baron Shibusawa presupposes a lack of capacity on the part of Americans to accommodate themselves to Oriental conditions, a supposition the erroneousness of which is strikingly shown when the results of the American occupation of the Philippines are considered. It also presupposes on the part of the Chinese

incapacity to co-operate with Americans or other foreigners in the development of China, a supposition that those who really know the Chinese will ridicule. Baron Shibusawa implies that America cannot peacefully exploit China without the permission of Japan, unless she is willing to incur the hostility of his country. This is an extraordinary attitude for Japan, of all countries in the world to adopt. Japan has subscribed to a number of solemn declarations that the principle of equal opportunity shall prevail in China. To prove how unequivocally she has committed herself to the maintenance of that principle it is desirable to quote from extant diplomatic instruments. An agreement between France and Japan was signed in Paris on June 10, 1907, to the following effect:—

> "Les Gouvernements de la France et du Japon, d'accord pour respecter l'independance et l'integrité de la Chine, ainsi que le principle de l'égalité de traitement dans ce pays pour le commerce et les ressortissants de toutes les nations, et ayant an intérêt spécial a voir l'ordre et un état de choses pacifique garantis notamment dans les régions de l'Empire chinois voisines des territoires ou ils ont des droits de souverainete, de protection, ou d'occupation, s'engagent à s'appuyer mutuellement pour assurer la paix et la securitié dans ces régions, en vue du maintien de la situation respective et des droits territoriaux des deux Parties contractants sur le continent asiatique."

In the agreement relating to China signed by Russia and Japan in 1907, Article 2 reads:—

> The two High Contracting Parties agree to recognise the independence and the territorial integrity of the Chinese Empire, and the principle of equal opportunity for the commerce and industry of all nations in the said Empire, and they engage to uphold and defend the maintenance of the "status quo" and the respect of that principle by all the peaceful means possible to them.

When we turn to the Anglo-Japanese Alliance signed in London on July 13, 1911, we find that the preamble reads thus:—

> The Governments of Great Britain and Japan, in view of the great change that has taken place in the political situation since the present Anglo-Japanese Agreement was concluded on August 12, 1905, and believing it to be conducive to the general peace and security to amend the said Agreement and adapting it to the changed conditions, have agreed upon the following stipulations in the place of the said Agreement, which have the same objects as the present Agreement, that is to say:—
>
> A.—The consolidation and maintenance of the general peace in the regions of Eastern Asia and of India;
>
> B.—The preservation of the common interests of all Powers in China by ensuring the independence and integrity of the Chinese Empire and the principle of equal opportunities for the commerce and industry of all nations in China:
>
> C.—The maintenance of the territorial rights of the High Contracting Parties in the regions of Eastern Asia and of India, and the defence of their special interests in the said regions.

Again, in the Agreement between Japan and the United States signed on November 30, 1908, the following is one of the clauses:—

> The policy of both Governments, uninfluenced by any aggressive tendencies, is directed to the maintenance of the existing "status quo" in the region above-mentioned (the Pacific Ocean) and to the defence of the principle of equal opportunity for commerce and industry in China.

This is reaffirmed in another clause:—

> They are also determined to preserve the common interests of the Powers in China, by supporting by all pacific means at their disposal the independence and integrity of China and the principle of equal opportunity for commerce and industry of all nations in that Empire.

From these quotations it is abundantly clear that Japan has unreservedly subscribed to the principle of equal opportunity, yet her semi-official spokesman, Baron Shibusawa, says in effect that Japan's permission is required for the exploitation of China by America. If America agrees to co-operate with Japan on Japan's terms she will be assisting the latter to render the Open Door declarations nugatory. By obtaining America's consent to co-operate with her as the managing and directing partner, Japan will have gone far towards establishing her super-Monroe doctrine that she is the door-keeper of China and may open or close the door as she pleases. Will America aid her to make the Open Door agreements mere scraps of paper?

Assuming that co-operation of the type advocated by the Japanese was accepted by America, what would be the actual result of the partnership? Japan has wrested from China the admission that the exploitation of South Manchuria, Eastern Inner Mongolia and Fukien must be confined to Japanese. By compelling China to assent to the closing of the door in these regions Japan violated every one of the agreements quoted above. If America is permitted to supply capital to develop these regions, under Japanese direction, she will be associating herself with a violation of the principle that America herself, through the late Mr. John Hay, brought into existence. She would be condoning the international misdemeanour committed by Japan in 1914 which lead the State Department to put itself on record in the following terms:—

> "In view of the circumstances of the negotiations which have taken place and which are now pending between the Government of China and the Government of Japan and of the agreements which have been reached as a result thereof, the Government of the United States has the honour to notify the Government of the Chinese Republic that it cannot recognize any agreement or undertaking, which have been entered into or which may be entered into between the Governments of China and Japan impairing the Treaty rights of the United States and its citizens in China, the political or territorial integrity of the Republic of China or the international policy relative to China commonly known as the Open Door policy. An identical note has been transmitted to the Japanese Government."

Why did the State Department send notes to Japan and China in these terms? The wording is diplomatic, but the obvious intention of the State Department was to reserve to itself the right to enter, at an appropriate time, a definitely worded objection to the action of Japan in closing the door in certain regions in China. The incidence of the war and the fact that Japan was nominally one of the Entente Powers rendered it undesirable to enter a definite protest in 1914, as the result would probably have been prevention of discussion of the matter on its merits. Nonetheless the caveat was entered and is extant. Obviously co-operation "to the fullest extent" would mean American co-operation in the exploitation of the regions in which Japan has closed the door in circumstances which elicited a veiled protest from America. If American capital thus co-operates without qualification it will stultify the action of the State Department. Moreover America will find herself brought into conflict with every nation possessing interests in China, except Japan, for while Japan has closed the door in regions which she deems her sphere of influence, she demands

the right to enter the spheres of other countries. In 1914 she endeavoured to compel China to hand over to her certain railway rights that had already been granted to Great Britain. The attempt was frustrated, but Japan still harbours grandiose commercial ambitions in the Yangtsze Valley and south-west China. If America entered into a partnership with Japan as the managing and directing partner, she would eventually find herself unwittingly in antagonism with the European commercial Powers, though acting for herself she may operate anywhere in China, providing other rights are respected.

The greatest asset that America possesses in China is the good-will of the Chinese people. The fact that America has no territorial designs in China, and the action of the American Government in remitting a large portion of the Boxer Indemnity have created among the Chinese a belief that America is the Power from which fair play and generosity can be expected, and is consequently the Power whose friendship should be sedulously cultivated. The existence of a sentiment such as this would be of infinitely more value, if America engages herself seriously in the peaceful exploitation of China, than co-operation with the country which China particularly fears and dislikes. If America were to co-operate with Japan "to the fullest possible extent" it is certain that the present feeling of goodwill and gratitude entertained by the Chinese towards America would be sacrificed. China does not expect America to give more than moral assistance to preserve China's independence, but she certainly does not expect America to aid and abet the one country that has openly shown its readiness to nullify the principle of equal opportunity which is the only effective safeguard of China's independence. If the Washingtonian policy of avoiding entangling alliances is carried out in the spirit, America will decline to enter into a partnership which would inevitably make her an accomplice in the subversion of China's sovereignty and the nullification of the principle of equal opportunity for the industry and commerce of all nations in China, which America created and has consistently sustained. The result would be the loss of the goodwill of the Chinese people and the creation of hostile sentiments towards America on the part of the commercial nations of Europe, who are also pledged to the maintenance of the principle of equal opportunity. Is Japanese co-operation worth the price?

In conclusion the attention of Americans may be directed to the fact that co-operation between another nation and Japan on the lines now advocated by the Japanese has been "tried out" in South Manchuria. The South Manchuria Railway, the wonderfully efficient instrument of Japanese Imperialism in the region concerned, raised a large amount of money by the issue of debentures in London. Those who provided the money had no voice in the manner in which it was employed. At the present moment British, and incidentally American, trade to cotton goods in South Manchuria has been practically exterminated. British co-operation with the Japanese on Japanese terms has resulted in British trade in a most promising region in China passing to the Japanese. This is a fact that a reference to the Customs Reports will clearly establish. As a result of their experience in South Manchuria the British are not to be wheedled into the "fullest co-operation" with Japan, though Japan is Britain's ally and has as such vast potentialities for good or evil. Is what is not good enough for Great Britain, Japan's ally, good enough for America? It is the solemn and considered belief of the writer that America would sustain irreparable moral and material damage were she to listen to the siren voice of Baron Shibusawa and exchange for Japan's fickle friendship the goodwill of the Chinese and the respect of the European subscribers to the doctrine of equal opportunity in China.

A BRITON.

# THE HOTCHPOTCH OF CHINESE POLITICS

The complexities of Chinese politics are infinitely more puzzling to the casual observer to-day than they were at any time during the late years of Yuan Shih-kai's life. While that forceful Chinese was able to impose his will upon the nation—or thought he was able to do so—the reason for the strong undercurrent against him was patent. He and the Young China party were as flint and steel. The rebellions and the threats of rebellion against him were but the natural sparks begat of impact between two such adamantine substances. They were expected; but, also, their end was expected when Yuan Shih-kai was gathered to his fathers. And it is because there are still flint and steel and sparks flying promiscuously about, despite the fact that Yuan Shih-kai is dead, that well-wishers of China are uneasy and that more and more talk of the advisability and expediency of foreign control is indulged in by the pessimistic.

While Yuan Shih-kai lived it was argued by his opponents that his retirement from the Presidency in favor of General Li Yuan-hung, or his death, would end for all time the apparently chronic state of rebellion which existed in south and central China. With the elevation of Li Yuan-hung, the popular idol of the 1911-12 revolution, to the Presidency on Yuan Shih-kai's death, it was generally believed that the Chinese people would at last experience the sensation Mencius promised the princes almost three centuries before Christ when he declared that if "a benevolent government be put in practice the people will be delighted with it, as if they were relieved from hanging by their heels." Yuan Shih-kai died on June 6, and Li Yuan-hung immediately assumed Presidential powers and prerogatives, but instead of the "benevolent government" hoped for there has been such a confounding of views and thoughts and ambitions and no government at all that it would be the quintessence of charity to ascribe the resultant anarchy to the light-headedness caused by the nation being upon its feet once again instead of dangling head downwards as in the simile employed so long ago by the philosopher of Mang.

The outstanding feature at the moment is that there is not a scintilla of co-operation in the interests of China between the Government and the Parliament. One is pulling against the other and the contest has ranged what, for simplicity's sake, may be called two large parties—although there is really a plethora of parties—on opposite sides who should, if China is ever to be anything but a subject nation, be pulling stoutly together. They are what are known as the Ming Tang (or people's party—which comprises as to its chief bulk the Kuo Ming Tang) and the Peiyang, or Military Party—an old party organized by the Marquis Tseng during the Taiping Rebellion, fostered later by the famous Li Hung-chang, and later still by Yuan Shih-kai, and now passing into the hands of a group consisting of Hsu Shih-chang (one-time Grand Councillor to the Manchus and Grand Guardian of the Emperor, and among other offices, Chief of the General Staff in 1911), General Tuan Chi-jui (the present Premier), General Feng Kuo-chang (the present Vice-President and Governor of Kiangsu Province), and General Wang Shih-tchen (present Chief of the General Staff). It is noteworthy that these four men were all at one time staunch adherents of the late Yuan Shih-kai, though when he struck for the Throne he did so without their support, and, in fact, in the face of their passive resistance.

The cardinal failure of Yuan Shih-kai to conciliate the Young China Party and his arousal of their antagonism by his dependence upon military force to preserve his power, and later his instigation of the movement to establish a monarchy, has left a grave stigma upon certain elements in the military coterie, and this is a legacy which has not only been handed down to General Tuan Chi-jui, but which has apparently and unfortunately been taken up by him. Why General Tuan Chi-jui, having before his eyes all the reasons for the ignominious failure of his patron, Yuan Shih-kai, should not exert his energies to adopt measures to reconcile the various contending elements passeth understanding. For this perhaps, the Young

China Party is in a great measure responsible, since its insistent clamour for "punishment of the monarchists" was undoubtedly the first note of alarm to the military captains to band themselves together for purposes of self-defence. Regarded from the new-point of the exigencies of political strategy the Young China Party undoubtedly made its first grievous blunder when it failed to listen to advice to silence its demands in this direction, and it has lived to see that what it demanded has been of no avail, and cannot be of avail.

But if the Young China Party, in error or through misguidance, contributed the first stimulus to continued antagonism between the factions, General Tuan Chi-jui certainly perpetuated the split when thoughtful procedure on his part could very well have remedied it. Had he learned the lesson which the past few years have taught he would have avoided the boots of his patron as he would a snare. It was in his power to establish the co-operation for the good of China which Yuan Shih-kai in his egotistic blindness failed to do—more especially as the Kuo Ming Tang later on readily enough evidenced recognition of its mistake and expressed a willingness and desire to bring about a basis of co-operation.

A factor preventing this desideratum was, of course, the Chin Pu Tang—a party originally formed under the ægis of Yuan Shih-kai to oppose the Kuo Ming Tang in the first Republican Parliament, and the instrument used by him to discredit the Parliament and hasten its humiliation if not its overthrow. How that party eventually bit the hand that fed it and by turning on Yuan Shih-kai brought about his downfall and his death is well known. In that enterprise it was working in harmony with the Kuo MingTang—always, however, a consistent advocate of constitutionalism and antagonism to the militaristic doctrines of Yuan—and after the successful accomplishment of the revolutionary aim stressed itself while perfecting its own plans, to throw dust in the eyes of the Kuo Ming Tang by persuading the latter to subordinate purely party interests for a united Republican organization. In this it succeeded beyond its expectations, for it found the moderate leaders of the Kuo Ming Tang only too eager to abandon party strife for national unity and progress. Though once again warned strongly that its good intentions were being made the play of political wire-pullers and schemers, whose sense of honor was exiguous in the extreme, the Kuo Ming Tang stood loyally in support of the Chin Pu Tang's declarations of unity, and too late it was disillusioned by the stampede of the Chin Pu Tang in support of a section of the very military whom it had worked with the Kuo Ming Tang to overthrow. This treachery took the Kuo Ming Tang at such a disadvantage that its party standing was jeopardised, but in face of the junction of its pseudo-friends with its old foes the party quickly rallied and in good time managed to establish itself in majority in the Senate if not in the House of Representatives. The result was a straight out fight between the Kuo Ming Tang and the Chin Pu Tang, the latter backed by the Premier and a section of the Peiyang party. With the former was another party headed by Sun Hung-yi, who was appointed by Premier Tuan as Minister of Interior, and later relieved of his post by Presidential Mandate owing to his refusal to comply with the anti-Kuo Ming Tang policy of the Premier. Since his retirement from the Cabinet Sun Hung-yi has made himself a power to be reckoned with and has managed to gather under his banner quite a number of parliamentarians and also a forceful section of military men. With this backing he has allied himself and his party, the Tao Yuan, with the Kuo Ming Tang in their efforts to overturn the Government under General Tuan Chi-jui Without traversing the details of the conflict during the past month or two the present situation may be summed up as an absolute deadlock, the conditions of which have been set out in the Peking Gazette by a writer, who, being a Chinese, might be quoted to illustrate how the Chinese themselves regard matters:

"'There has been a deplorable lack of mutual confidence between the Government and Parliament.' These are the words of a prominent radical leader in Parliament. Coming, as they do from a radical leader who is generally looked upon as the source of trouble in the present political situation, the words are certainly of great significance. And they are doubly important because they strike the key-note of the present deadlock in Parliament as well as that between the Government and Parliament. The Government has always regarded Parliament as the originator of unnecessary embarrassment, while the latter—at least the parties not on the Government's side—have been treating the Government, i.e., the Premier, as a plotter conspiring to overthrow the Republic once more. Hence the latter has been endeavouring to avoid consulting Parliament, while the latter have sought continually to look into the conduct of the Government. The sending of Tsao Ju-lin to Japan to present the Grand Order of Merit to the Emperor of Japan is a good illustration of this tendency. Had the Government taken the trouble to sound the views of the leaders of the various political parties beforehand, the Premier could have saved all the humiliation which has been cast upon China by a friendly government. On the other hand, had Parliament not been so suspicious of the Government as the result of the latter's many strange actions, things might have taken a different course; and the Government might have been spared its existing embarrassment. This has also been true of the nomination of Cabinet Ministers. Instead of consulting Parliament beforehand respecting the person to be nominated for a post in the Cabinet, the Premier has been in the habit of asking the support of a particular party, i.e., the Chin Pu Tang, which always supports the Government, and leaving it to chance to get the nomination confirmed by the cooperation of the Kuo Min Tang. The result has been a continuous 'loss of face' to the Government. In this respect the course the Government seems to have taken is even worse. Instead of enlisting the sympathy of the opposition for the nomination of a certain person, scurrilous attacks are usually published in newspaper organs, believed to be connected with the Kuo Wu Yuan Cabinet against those parties—the Kuo Min Tang and some of the 'Neutral' parties—which are supposed to be opposed to the nomination in the hope that the opposition may be frightened into yielding to the false public opinion thus created. The result has always proved to be just the reverse. The opposition at once jumps to the conclusion that as the 'government organs' are attacking the opposition without good cause, the Government must be up to some new tricks, such as the overthrow of Parliament. When this stage is reached there is no possibility of any nominee of the Government getting through Parliament since the opposition has the majority in the Senate if not absolutely in the House of Representatives.

"This mutual suspicion exists, unfortunately, also in Parliament. As the result of mutual suspicion between Parliament and the Government, the parties supporting the Government have also adopted an attitude of suspicion towards the opposition, Chin Pu Tang vs. Kuo Min Tang. Hence whatever the opposition says or does is interpreted as calculated to damage the Cabinet or embarrass the Premier. Whatever the opposition says in the House is opposed by the parties supporting the Government because it is suspected that it is impossible for the opposition to say or do anything for the good of the Government. A certain member of Parliament has humorously remarked that the best way to get the support of the opposite party is to criticise the view you wish to support. The enemy is sure to fall into the trap. Mutual suspicion is another cause of the deadlock in connexion with the making of the Constitution. The Democrats want the Provincial System included in the Constitution because they believe, and not without good reason, that without it some ambitious man may again tread the road to an Imperial throne as Yuan Shih-kai did. On the other hand the other party fights to exclude it because it believes, also with good reason, that once the provincial line is drawn too clearly there will be the danger of the provinces trying to become excessively "independent." Remember the views of the two great opposing parties are not the result of sober meditation but the conclusion of persons who look on each other as the destroyer of the nation. The Kuo Min Tang want this because if this is not done the Chin Pu Tang may become a dictator to the people. The Chin Pu Tang do not want that because if this is done the Kuo Min Tang may destroy the effective control of the Central Government.

"The remedy is plain. The Government, being in power and therefore in control of the whole situation, must take the initiative. The Government must try to understand the views of the opposition and endeavour to conciliate it and treat it as a

friendly adviser and not as a deadly enemy bent upon destroying the Government. A canvass of the opinions in the opposition ranks shows that there is no substantial truth in the rumour that the Kuo Min Tang are determined to overthrow the present Government whether it is good or bad. On the other hand, it will be sure to obstruct the Government if the latter thinks that it can be baubled or scorned at. The wonder is why has the Government never tried to sound the views of the Kuo Min Tang in matters of national importance?"

What is going to be the outcome of this deadlock cannot be prophesied. The country is full of rumours of a fourth revolution; there is a constant hurry and scurry hither and thither of politicians; there is talk with bated breath of a coup by Premier Tuan to once again abolish Parliament, and most sinister of all is the constant talk of a split of the country and the formation of a South China Republic, this region embracing the provinces south of the Yangtsze. That there is turmoil there is no gainsaying. All that can be hoped is that wiser councils than those now having sway will prevail and that China will be saved from what looks like the inevitable—scilicet, the establishment of a Condominium for at least a generation.

## OPINIONS OF THE VICE-PRESIDENT

The unsettled state of politics is greatly deplored by the Vice-President of the Republic, General Feng Kuo-chang, who, however, is stoutly optimistic and regards the present struggle between the various parties as but a natural development of the democratic idea. In a recent interview with a representative of the Far Eastern Review he so expressed himself, and urged a suspension of judgment on the part of foreigners on the ground that much of the talk of irresponsible Chinese is purely personal and does not represent any particular party or the real ideas or aims of any party. That there is, however, keen party conflict, he readily enough admitted, though he prefers to view the whole situation broadly and tolerantly. In his opinion sensational and conflicting statements are sure to be heard until political parties have settled down and found their level, but these he urges should not be taken too seriously.

"Just now the country is in great difficulty," he said, "because of the necessity of men trained in administrative work. If government is to be good, the Cabinet responsible for it must have talent and power and must enjoy the confidence of the people. Without credit it can do little. Whereas in the old days officials appointed to high positions were widely known in the country, and reached their respective stations after most gradual promotion, the system to-day enables the most unknown man to aspire to the highest office providing that he can secure the necessary political 'pull.' Men educated abroad, and perhaps well educated, though their knowledge of China is small, are able to return and take up Cabinet office or positions in the provinces, without having received any training in the service of their country and without being possessed of the knowledge of China necessary to acquit themselves properly.

"There is one way out of the trouble although it is difficult, and that is to devise means to give potential officials the requisite administrative experience. We have many men of ability in China: the returned students have ability, but they lack one important thing—experience. Before taking up high and important office they must wait and demonstrate to the people that they have the experience and talent necessary to officiate in China. Without confidence there can be no stability. At this critical time great affairs of State require management by experienced officials with prestige. The foreign educated men must serve as assistants until they are qualified by training and by talent to take up higher posts and win the trust of the people. In short the civil service must be placed upon a proper basis if China is to be got out of the difficulty in which she now wallows. Foreign-educated men base their knowledge on what obtains in other countries, knowing little or nothing of conditions in their own. If I, for instance, would only employ new men the old ones with experience and training would not serve under them, and if the new men employed only new men then a condition would arise where the employed would be no less ignorant of China than the employers. It appears to me, then, that the best course to take is for the old experienced officials to decide what should be done and have it executed by the young ones. The whole nation would then soon learn to appreciate the talent of the new men and would ultimately have confidence in them. The high positions in China are very few and these should be filled by trained officials to dictate the policy to be carried out by the lower officials. Within a few years the talented would soon assert themselves and be qualified to step into the higher rank upon a vacancy being created. If this arrangement were continued for ten years then China would be in a sound position so far as officials were concerned. There would be two good results from the adoption of the plan, at any rate. The new people having positions under a proper system would not make trouble because they would be satisfied, and leaders with ambition could not get followers because they would already be employed."

General Feng Kuo-chang, in touching upon general conditions, expressed the hope that matters would soon adjust themselves. He said that he was working for that end, but recognised that the struggle to establish a satisfactory government would be a long one. So far as the future was concerned he emphasised that he was in no way an aspirant for presidential honours, and wished that to be generally understood, since a section of politicians were already using his name in that connexion.

## MARITIME CUSTOMS REVENUE FOR 1916

The Maritime Customs Revenue for 1916 shows an increase of over Haikuan Taels 1,000,000, the total collection reported being in round numbers Haikuan Taels 37,750,000 (at average exchange 3s/3/$\frac{1}{8}$ = £6,262,174) as compared with Haikuan Taels 36,747,000 (at average exchange 2s/7/$\frac{1}{8}$ = £4,765,020) in 1915.

The following are in round numbers the collections at the principal ports:

| | | | | | | |
|---|---|---|---|---|---|---|
| Harbin | Hk. Tls. | 936,000 | a decrease | of | Hk. Tls. | 188,000 |
| Antung | ,, | 742,000 | an increase | ,, | ,, | 120,000 |
| Dairen | ,, | 2,031,000 | ,, | ,, | ,, | 291,000 |
| Tientsin and Chinwangtao | ,, | 4,690,000 | a decrease | ,, | ,, | 40,000 |
| Kiaochow | ,, | 1,698,000 | an increase | ,, | ,, | 1,250,000 |
| Hankow | ,, | 4,011,000 | ,, | ,, | ,, | 143,000 |
| Shanghai | ,, | 11,324,000 | a decrease | ,, | ,, | 80,000 |
| Swatow | ,, | 1,124,000 | ,, | ,, | ,, | 171,000 |
| Canton | ,, | 2,222,000 | ,, | ,, | ,, | 170,000 |

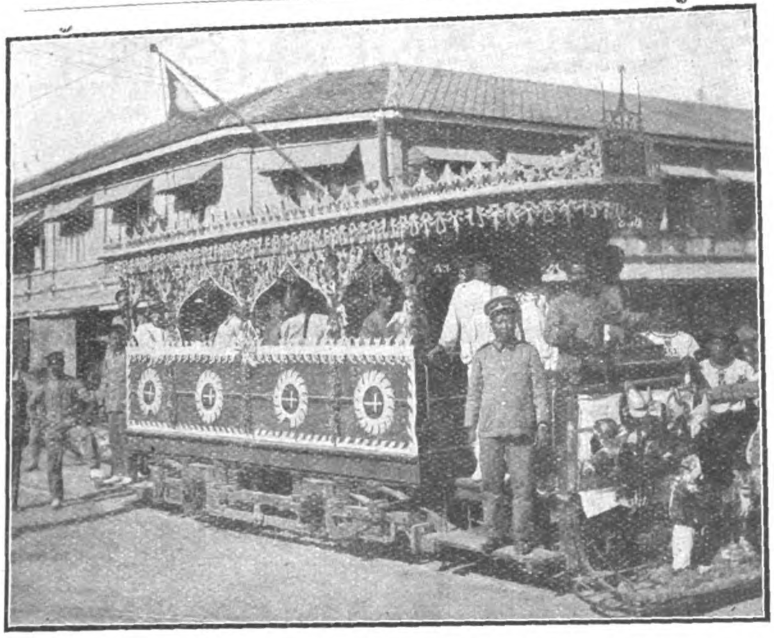
The collections at the following ports form records: Antung, Dairen, Changsha (Hk. Tls. 624,000), Hankow, Nanking (Hk. Tls. 383,000) and Nanning (Hk. Tls. 163,000).

All foreign obligations secured on the Customs revenues have been fully met to 31st December, 1916.

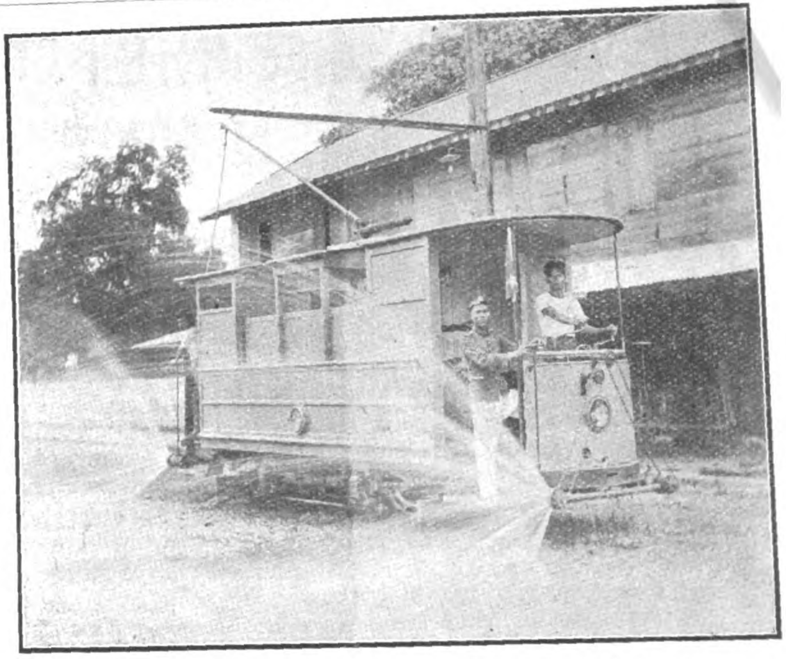
## JAPAN-HAWAIIAN WIRELESS

The new wireless system was opened on November 10 between Tokio, Hawaii and San Francisco when messages were exchanged between the Emperor of Japan and President Wilson; the Governor of Hawaii and Count Terauchi, and the Ambassadors at Tokio and Washington, all expressing good will and hopes of an increase in friendly relations.

The two stations are located at Funabashi, Chiba in Japan and at Kahuku, Oahu, in Hawaii. The commercial rate for messages between the two points is almost thirty per cent less than the cable charges. Messages will be exchanged at two periods—between 6 and 8 o'clock in the evening and between 10 o'clock at night and 2 o'clock in the morning.



TRAM CAR OF SIAM ELECTRICITY COMPANY DECORATED FOR FESTIVAL



CAR EQUIPPED FOR USE IN SPRINKLING STREETS OF BANGKOK

# SIAM ELECTRICITY COMPANY, LTD.

Bangkok is situated on both sides of the River Menam Chow Phya but only the part on the East bank of the river has proper streets and roads. The population is about 650,000. The Tramway system is owned by two Companies but the Siam Electricity Co., Ltd. holds a controlling interest in the other Co. The Siamese Tramway Co., Ltd. and both systems are operated by the Siam Electricity Co., Ltd. The Line is single track, 1 meter gauge, and the total length is 23 miles. One of the lines through the main artery of the business district, the Charoen Krung Road, is exceedingly well patronised. The principal income is derived from native passengers as the Europeans form a too small proportion of the population to be reckoned with. The cars have first and second class compartments and the fares are on the Zone system, the scale being 1 section of 3,000 meters for 6 Tical cents, 2nd class and double for 1st class (1 tical = about 1s 6d.). On the main line are used double motor cars with trail cars. Trucks are partly Brill 21 and partly Peckham 7B with General Electric Co.'s motor equipment. The Siamese Tramway Co.'s cars have Dick Kerr & Co.'s equipment. The total number of cars is 140 Motor cars and 40 Trail cars. There are fixed stopping places along the line and the cars run from 5.30 a.m. to approximately 11 p.m. During the festivals a great strain is put on both cars and personnel, huge crowds having to be accommodated. Most of the streets are narrow and the traffic very congested, jinrickshaws, motor cars and carriages running up and down the whole day. In spite of this few fatal accidents take place. The operating staff consists of natives under a European Traffic Manager. The Company also sprinkle the streets on which their lines are laid to the whole width and provide fire-protection by means of steam and electric pumps mounted on tramcars.

The *Power Station* of the S. E. Co. supplies continuous current (500-550 volts), for the tramways and alternating current for light and power. The alternating current hitherto supplied has been single-phase, 2,000 volts, 100 cycles transformed to 100 volts, when consumed. At present the main part of the alternating current plant is being altered to three-phase, 50 cycles, 3500 volts distributed through a four wire system.

The machinery consists of:—

Two 200 K. W. enclosed, self-lubricating, vertical compound steam engines, 400 r.p.m. Engines built by Browett & Lindley, Dynamos by Dick Kerr & Co., Ltd., 1905.

One 750 K. W. triple expansion engine for steam of 160 lbs. per sq. in. pressure and 300° C. total temperature. 120 r.p.m. Engine built by Burmeister & Wain, Copenhagen and Dynamo by Siemens-Schuckert Werke 1909.

To this engine belongs: one 150 K. W. Motor-generator (Brown Boveri & Co., 1908) for producing single-phase current, when the tramcar load is not sufficient for the engine.

Two four-cylinder Diesels internal combustion motors of respectively 150 and 200 K. W., 187 r.p.m. The fuel is crude earth-oil from Borneo. Burmeister & Wain-Siemens-Schuckert Werke 1908 and 1909. In order to prevent the chambers and channels of the motors from being choked up with mud the same water is constantly circulating through the motors and cooled down in a cooling tower; only specially cleaned water is used for maintaining the proper level in the pond below that tower.

One 150 K. W. enclosed, self-lubricating, vertical, compound steam engine, 375 r.p.m. Bellis & Morcom—General Electric Co. 1907.

One 350 K. W. vertical triple expansion engine, 125 r.p.m. Burmeister & Wain—Siemens & Halske 1903.

One 600 K. W. vertical Curtis Turbine, 2000 r.p.m. Temperature of steam 300°C. General Electric Co. 1906.

Two 1,200 K. W. horizontal Turbo-generators, 3,000 r.p.m. Temperature of steam 350°C.

To this plant belongs:—

One 700 K. W. Motor Generator for producing continuous current for the tramways (running alternatively with the 750 K. W. triple expansion engine).

One 500 K. W. Motor Generator for producing single-phase current (running instead of the single-phase steam engines).

The three-phase plant is supplied by the A. E. G. Berlin 1911.

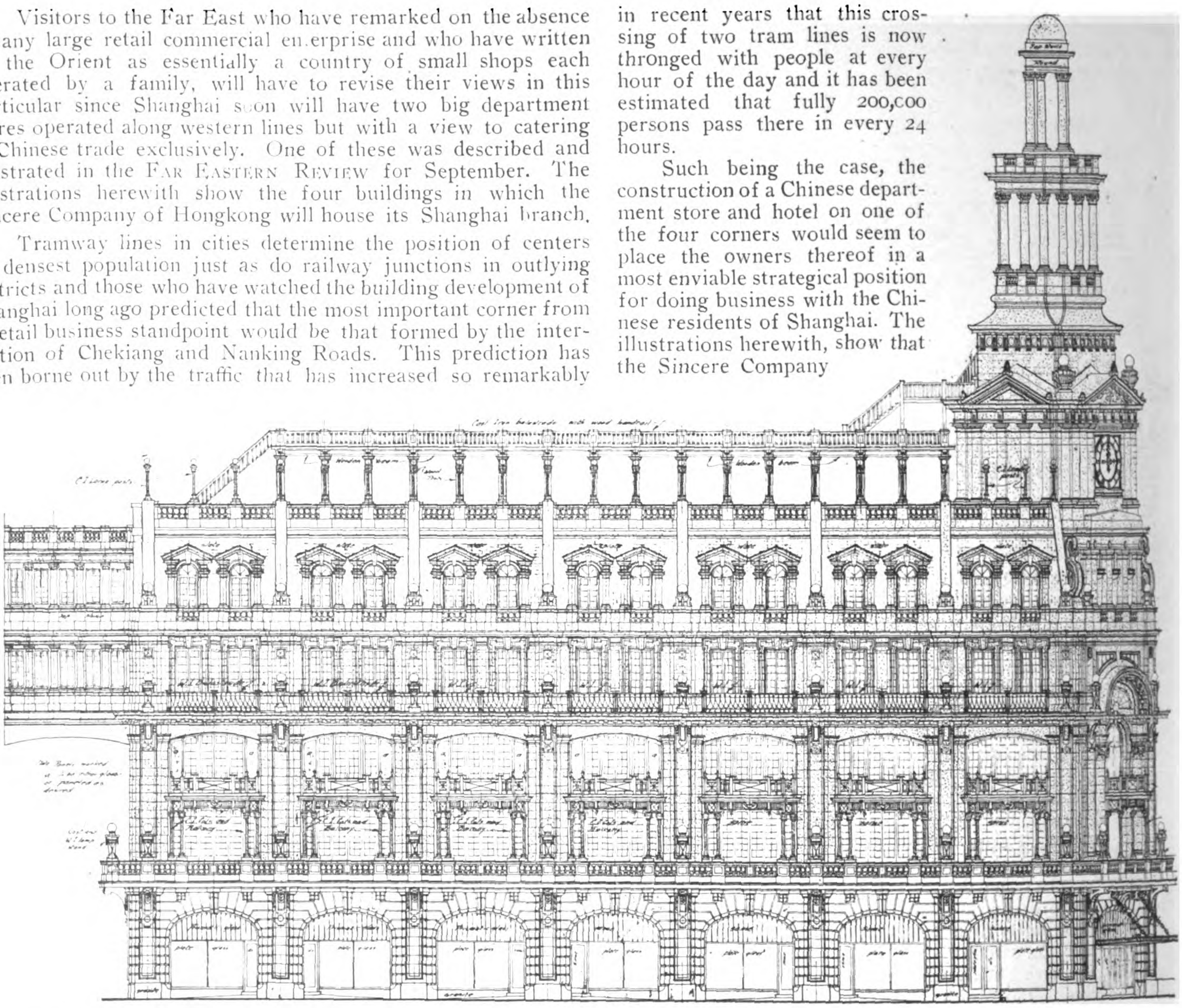
Ten Babcock & Wilcox boilers fitted with internal superheaters for superheating the steam up to 300 or 350°C. Working pressure 160 lbs. per sq. in. Heating surface of each boiler 2,852 sq. ft. Paddy husk is usually burnt in the furnaces.

# NEW DEPARTMENT STORE AND HOTEL FOR SHANGHAI

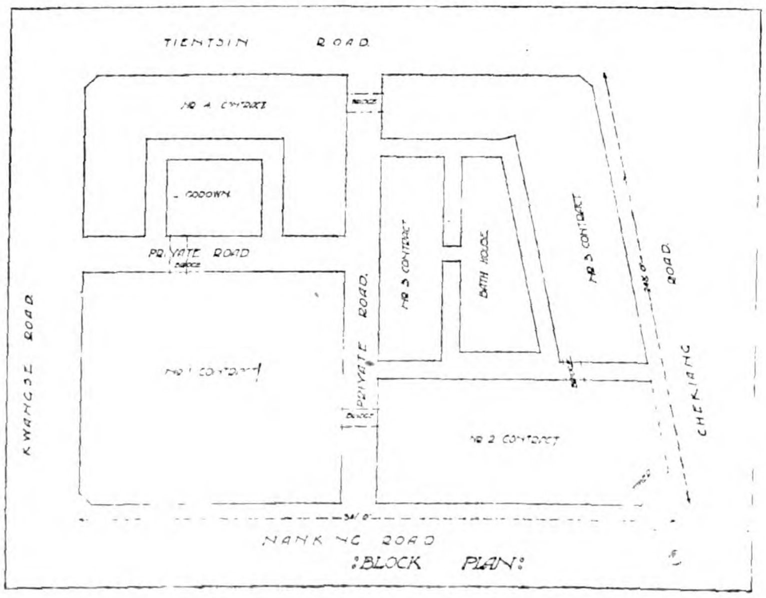
Visitors to the Far East who have remarked on the absence of any large retail commercial enterprise and who have written of the Orient as essentially a country of small shops each operated by a family, will have to revise their views in this particular since Shanghai soon will have two big department stores operated along western lines but with a view to catering to Chinese trade exclusively. One of these was described and illustrated in the FAR EASTERN REVIEW for September. The illustrations herewith show the four buildings in which the Sincere Company of Hongkong will house its Shanghai branch.

Tramway lines in cities determine the position of centers of densest population just as do railway junctions in outlying districts and those who have watched the building development of Shanghai long ago predicted that the most important corner from a retail business standpoint would be that formed by the intersection of Chekiang and Nanking Roads. This prediction has been borne out by the traffic that has increased so remarkably in recent years that this crossing of two tram lines is now thronged with people at every hour of the day and it has been estimated that fully 200,000 persons pass there in every 24 hours.

Such being the case, the construction of a Chinese department store and hotel on one of the four corners would seem to place the owners thereof in a most enviable strategical position for doing business with the Chinese residents of Shanghai. The illustrations herewith, show that the Sincere Company in planning the extension of its business from Hongkong to Shanghai has determined upon having buildings worthy the site. The advertising value of suitable premises doubtless had a part in fixing the determination of the company to have not only the most prominent site in Shanghai, but to erect thereon the most imposing buildings possible to obtain. While no accurate statement has been made as to the probable cost of the buildings, those familiar with building conditions in Shanghai estimate the sum necessary to carry out the company's plan at not less than seven or eight lacks of taels, a matter of close to a million Mexican dollars.



BLOCK NUMBER TWO, NANKING ROAD ELEVATION OF SINCERE BUILDING

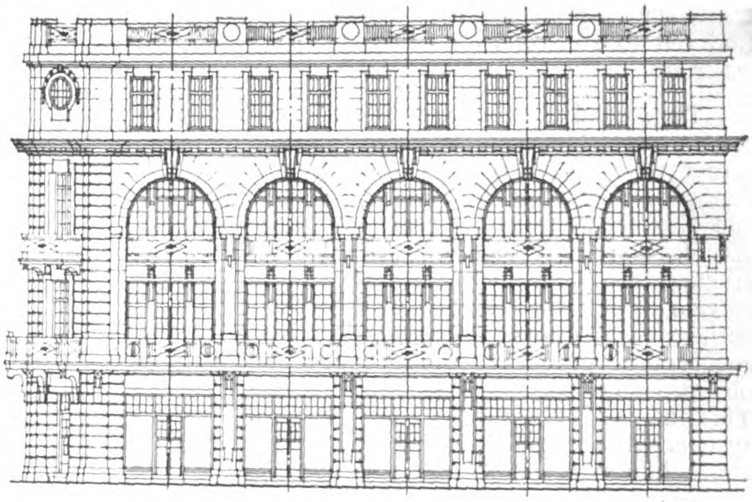



The illustrations are from drawings and show the groups of four buildings which are to stand upon the magnificent site (see block plan) fronting the Nanking, Chekiang, Tientsin and Kwangse Roads in the very centre of the Chinese section of the Settlement, the Nanking-Chekiang Roads crossing being one of the busiest in Shanghai if not the busiest in the Orient. The premises, which are approximately 340 feet on the Nanking Road and 240 feet deep along the Chekiang Road, are divided by private roads into four separate buildings and connected up by bridges at

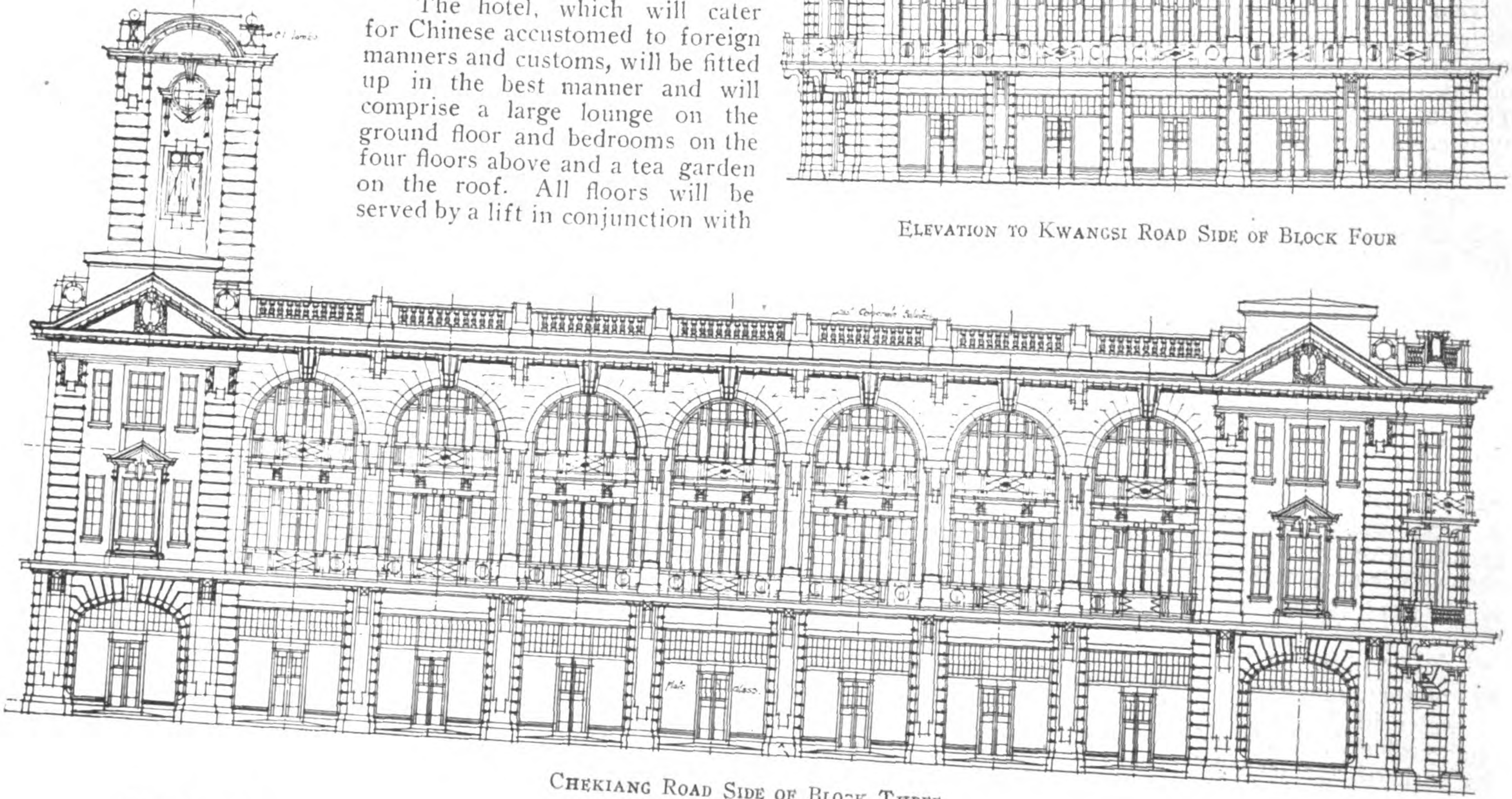
the roof levels to provide a promenade on the flat roofs for interested Chinese. All the buildings will be carried out in reinforced concrete and the architectural style is a free treatment of English Renaissance.

The first contract comprises a building on the south, west corner of the site, 150 feet frontage to Nanking Road and 130 feet deep, part of which is to be the Sincere Store, 94 feet by 120 feet to be four stories high and the remainder a hotel five stories high. The store will be served on each floor by two lifts and provided with ample fire proof staircases and will be fitted in an up-to-date manner in every part.

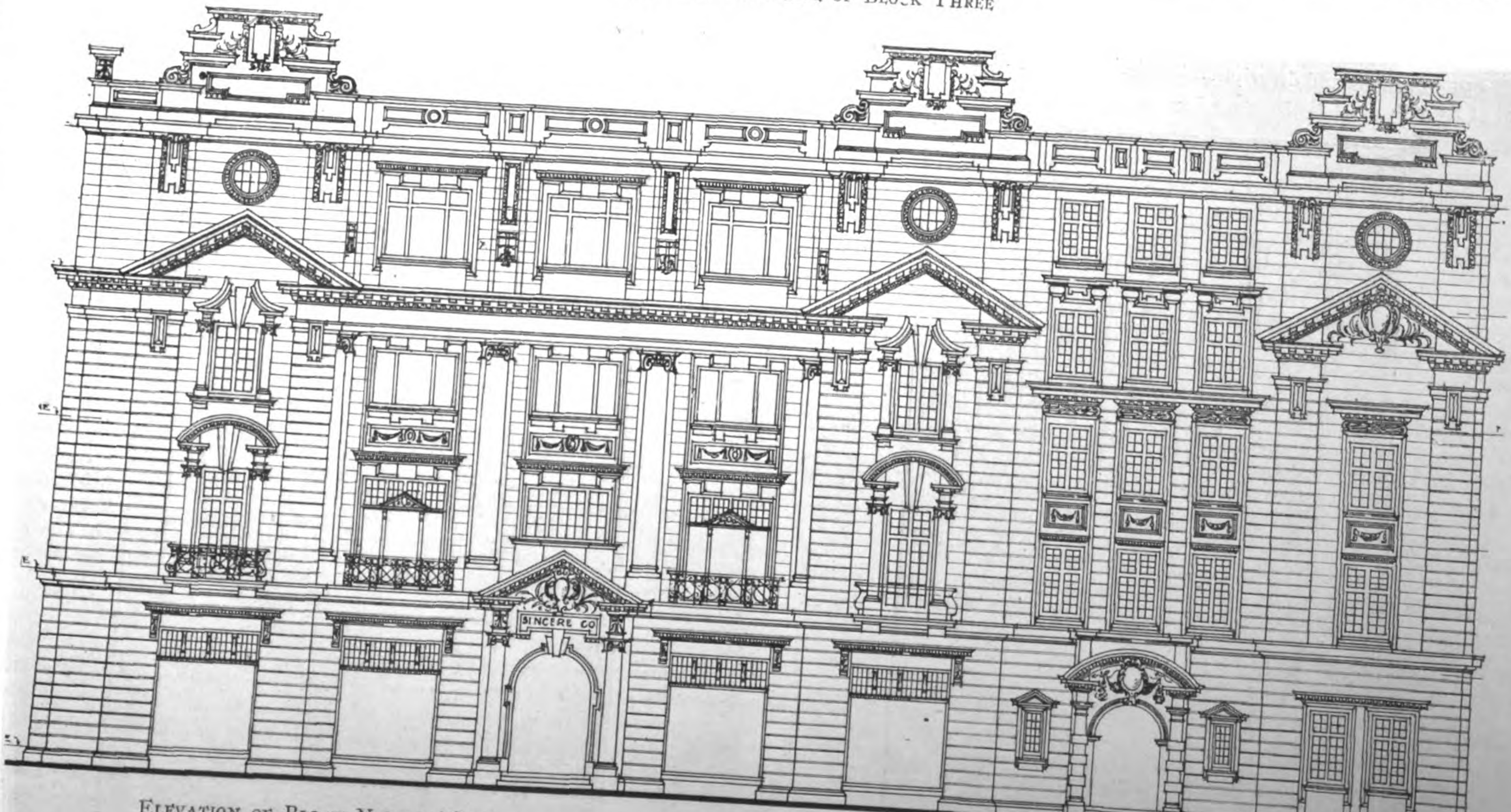
The hotel, which will cater for Chinese accustomed to foreign manners and customs, will be fitted up in the best manner and will comprise a large lounge on the ground floor and bedrooms on the four floors above and a tea garden on the roof. All floors will be served by a lift in conjunction with



Elevation to Kwangsi Road Side of Block Four



Chekiang Road Side of Block Three




Elevation of Block Number One which will be Connected by Bridge with Block Number Two on Opposite Page

a wide staircase. The entrance will be from the Nanking Road. Both the store and hotel are to be heated by low pressure hot water system supplied by the Shanghai Waterworks.

The second contract is on the Nanking and Chekiang Roads corner and is five stories high, having an entrance on the corner which serves a large tea shop on the first and second floors and an annex to the Hotel on the third and fourth floors, and also access is gained to the roof garden and pavilion by two express lifts from this entrance. The remainder of the frontage to Nanking and Chekiang Roads is to be occupied by foreign shops. On this most important corner a tower has been designed to be 150 feet high, having an iron staircase from the roof level to the turret from which a magnificent view may be obtained and which ought to prove popular to the Chinese. This building is also to be heated by the low pressure hot water system. A large clock is to be provided in the tower 80 feet above the footpath level.

The third contract is on the Chekiang and Tientsin Roads and will be three story foreign style for shops and will have a roof garden. Provision has been made for a Cinema exhibition on the roof, part of the auditorium being covered over by a roof, the remainder open.

In the centre of this block a modern bath house is to be erected for Chinese. There will be a staircase tower on this block to be carried up to the level of the roof of the second portion and connected with it by a bridge. The fourth building is to be four stories high, the lower two floors being intended for Chinese shops in the foreign style. The two top floors are to be occupied by the employees of the Sincere Company.

At the rear of this block there is a two storied godown in connection with the store, and the two stories on top are taken up by dinner and recreation rooms for the employees. Adequate kitchen accommodation is provided, all connected up to the store and hotel by enclosed bridges. The lifts to the first portion are to be provided and erected by Smith Major and Steven, Scott Harding & Co., agents.

The marble work and Japanese stucco are to be carried out by Tankai Co. The contractor for the first portion is Koo Lan-chow, second portion Sing Woo-kee, third and fourth portions is Sing Jin-kee. The Architects to the Sincere Company are Messrs. Lester, Johnson and Morriss, Siking Road, Shanghai

# THE PAPER VILLAGE OF TONKIN*

Paper is one of the chief articles of native consumption of French Indo-China. It is burnt in connection with many religious rites and is extensively used in commercial transactions. A great deal of this paper is imported from China; but in several places, particularly in Tonkin, the natives attempt to supply their own market. A little suburb of Hanoi, the capital of Tonkin, owes its name to the fact that nearly all of its two or three thousand inhabitants gain their living by making paper.

The Village du Papier is located on the edge of a marsh two or three miles from the city, and the constant employment of water in the industry of the village, makes it muddy and disagreeable even in the dry season. The paper is made from the bark of a so-called "paper tree," a species of mulberry found on the Black River in upper Tonkin. This bark is soaked in lime made from the limestone of the village, heated by crude furnaces fashioned by hand under natural limestone vats, pounded by a pestle into a fine mesh, washed in special pools to remove coarse substances, then dissolved into a very thin paste. This paste is then dipped by bamboo-screen sieves, about 12 x 24 inches in dimensions. The slight film of paste covering the screen is deposited on top of others similarly collected, and each is taken separately or several films are taken together and spread with a brush on cement radiators to dry. A single sheet is as thin as tissue; but the desired thickness may be obtained by spreading several films on the radiator and drying them together or by pressing together, or pasting together after drying, the requisite number of sheets. The product is then tied up in small bales and carried to the native market in Hanoi.

This curious village may be reached by tramway or by ricksha from the capital. As a study in native industries it is most interesting and instructive and is well worth a visit by those who are not too sensitive to mud and smells.

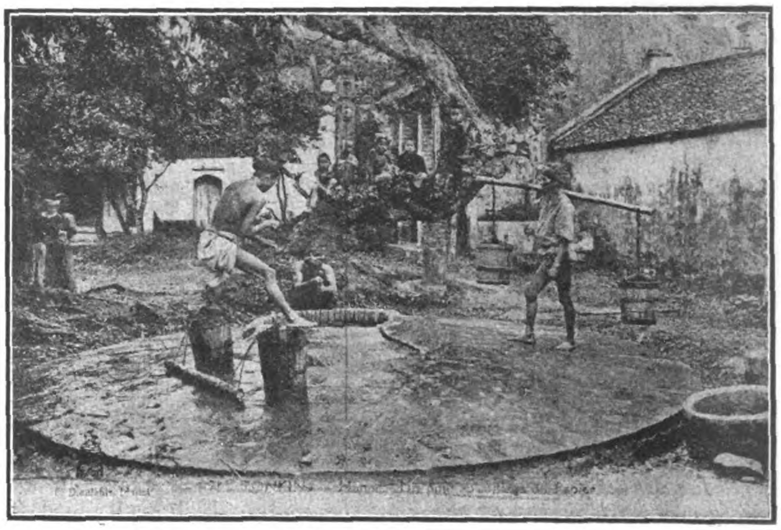
* Photographs and description by Mr. Lawrence P. Briggs, U.S. Consul at Saigon.

POUNDING THE BARK FOR PAPER MAKING

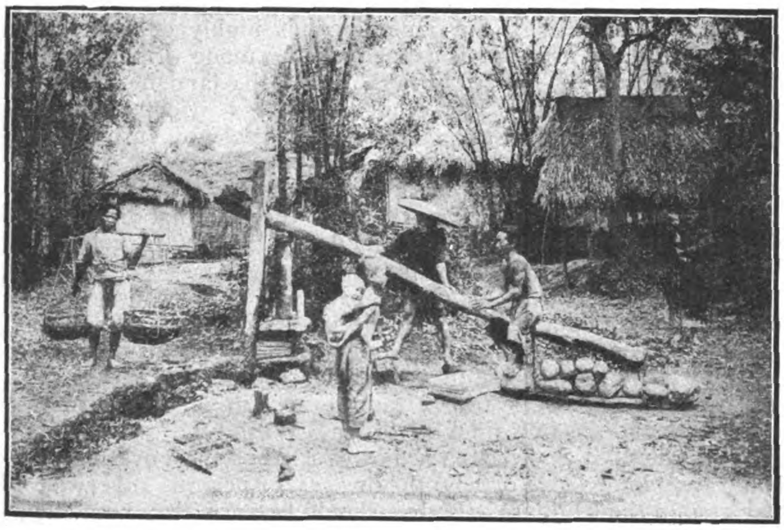
WASHING THE PASTE

# SCENES IN TONKIN'S PAPER VILLAGE

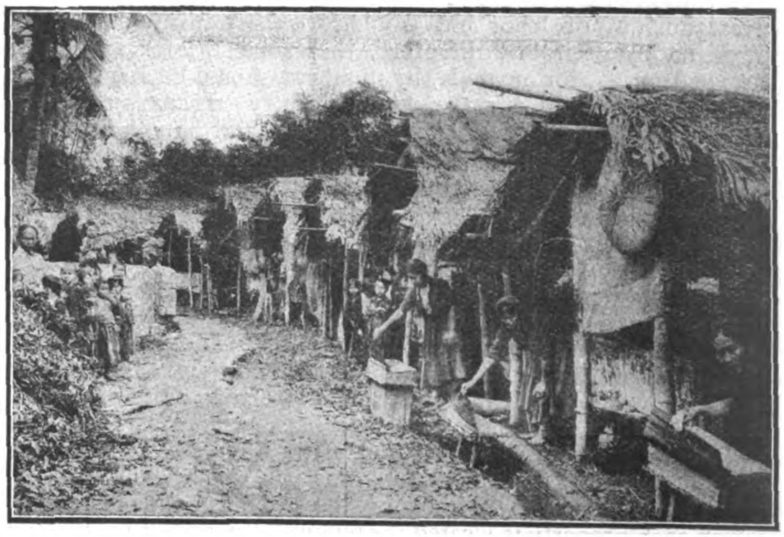
General View of Paper Village



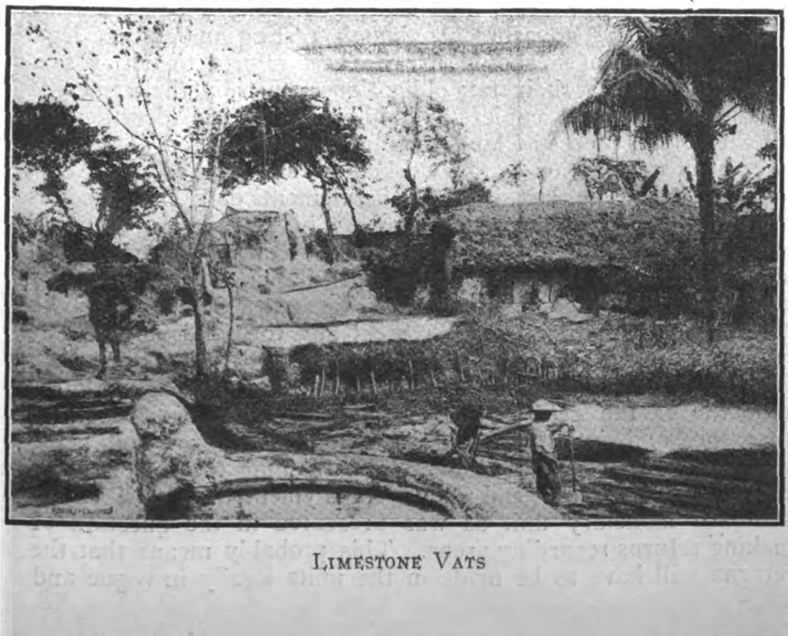
Natives at the Well



Dipping the Pulp



Pressing the Sheets of Paper



Limestone Vats

Furnace for Burning Limestone

# MEMORANDUM ON THE REFORM OF THE LAND TAX SYSTEM IN CHINA

[BY W. F. WILLOUGHBY, DEPUTY LEGAL ADVISER TO THE CHINESE GOVERNMENT]

*Continued from the November issue*

PART. II.—The Assessment of Land: 1. Introductory Remarks. 2. Character of Assessment Data Required.—(a) Identification Data; (b) Location; (c) Area; (d) Use of Standard Unit of Measurement; (e) Character of Land; (f) Name and address of Owner or Occupier. 3. Organization and Conduct of Work of Assessment. 4. Desirability of a Cadastral Survey. 5. System where a Cadastral Survey is not Feasible. 6. Administration Organization Required for Making the Assessment. 7. Organization and Work of the Central Office. 8. Use of Forms for the Description and Valuation of Lands. 9. Adoption of Standards of Value. 10. Organization of the Field Force of Assessors. 11. Adjudication of Disputes regarding Assessments. 12. The Revision of Assessments.

*Identification Data:*—By data for the identification or designation of land is meant some means by which each piece of land may be described for entry on the tax rolls; that is the lists of lands taxed. These data are intended to serve the same purpose as the description of lands that is given in deeds of conveyance. To attempt to enter upon the tax rolls a full description of each piece of land taxed would not only involve a great amount of labor but would give rise to many difficulties. It is highly desirable, therefore, that some briefer system of designation, as, for example, by numbers, should be adopted that should be uniform for the whole country. If, as is desirable, maps are prepared showing the location and boundaries of all pieces of land, it will be possible to give to each piece of land a number on the map and then to make use of these numbers for the designation of pieces of land on the tax rolls. Until the necessary surveys for such maps are made, some other method of designation will have to be employed.

*Location:*—By location is meant primarily the designation of the province, district and sub-division of the district in which each piece of land is located. If feasible, it is desirable to carry this designation of location still further and to give the location of each piece of land in reference to streets in cities or natural landmarks in the country, such as canals, roads, rivers, etc. If sufficiently precise this designation of location will serve as the identification data for individual properties.

The desirability of knowing the province and district in which each property is located is obvious. In preparing the tax rolls the properties should be grouped according to district and provinces. This makes it possible to know the total assessment and the total amount of taxes due for each sub-division. Such a grouping is also necessary in order that the work of collecting the taxes due may be distributed among collectors each having the duty of collecting taxes in a particular district.

*Area:*—The necessity for information concerning the area of each piece of land is evident. Unless this is obtained it is impossible to determine whether the value placed upon a piece of land is a proper one or not, and also whether there has been a complete assessment of the land in a district. In Porto Rico this information was used with great advantage for the purpose of verifying the completeness with which the work of assessment had been done. The total area of a district was known. If the total area of the land assessed fell short of this area to any considerable extent, knowledge was thus furnished that all the land had not been assessed. In the absence of detailed surveys and maps this was the most valuable check that the central office had on the thoroughness with which the work of assessment in the field had been performed.

*Use of Standard Unit of Measurement:*—In stating this area, it is hardly necessary to say that use should be made of a uniform or standard unit of measurement. The writer understands that at the present time units of measurement are not uniform throughout China. This being so, it may be necessary to make use of two units, the local unit and the one adopted as the standard unit by the central office. Thus the original return made by the assessor may be in terms of the local unit and the work of converting this into the standard unit be performed by the central office. In this connection the suggestion is made that the making of this assessment may furnish an opportune time and occasion for the introduction or application of a standard unit of surface measurement throughout the Republic.

*Character of Land:*—By character of land is meant the nature of the use for which the land is adapted. This, of course, together with the area, are the factors determining the value. In securing information concerning character it is important to make a distinction between the use to which the land is best suited and the use to which it is actually put. Thus, for example, valuable farm land may be allowed to remain idle, land suitable for building purposes may be devoted to crops, etc. This distinction is important since the use to which land is best adapted, rather than the use to which it is actually put, is the element which determines, or should determine, its value. At the same time it is highly desirable to know what is the use that is actually being made of the land. The presumption, of course, always is that the land is used in its most effective way. The securing of this information in detail is very essential, not merely for the purpose of furnishing information which is of great value to the government, but to enable the central office to check and control the work of the assessors, and to give to the central office the information which will enable it to pass upon protests made by landowners against the valuations placed upon their properties.

*Name and Address of Owner or Occupier:*—It has been pointed out that, under the principle of taxing the land rather than the landowner, it is not necessary for the government to concern itself with who are the owners of the several pieces of land assessed. This is true after the system is once firmly established and in full running order. While the system is being installed, it is necessary, however, that the government should have knowledge of who the owners, or persons otherwise interested in the land, are. It thus should know with whom the matter of disputes arising out of the work of assessment should be taken up. Some years, moreover, will lapse before landowners will recognize that the responsibility rests upon them to come forward and pay the taxes assessed against their lands without being notified that such payments are due. During this period, the government, though resting under no legal obligation to do so, should use its best efforts to notify taxpayers regarding their tax obligations. Finally the names of the landowners or occupiers will aid greatly in the identification of the several pieces of land, pending the time when a uniform scheme of designation can be worked out and applied.

*Value:*—The last item of assessment data indicated as required is the value of the land. This is the information constituting the real purpose of the assessment. The rest is but collateral data to the end that this information may be obtained and properly utilized. As indicated, the return should show both the value per unit of measurement and the total value. The value per unit is necessary, not only as giving information which in itself is of value, but as furnishing the information absolutely essential if the central office is to check the work of the assessors and determine whether lands are or are not being assessed at their proper value. In furnishing this information there arises the same need for the employment of a uniform or standard monetary unit as was presented in the question of making returns regarding areas. This probably means that the returns will have to be made in the units locally in vogue and

these figures subsequently converted by the central office into some standard unit such as the dollar.

*Organization and Conduct of Work of Assessment*:—Having determined the character of the information that must be obtained, in making an assessment of land for purposes of taxation, the next step consists in devising the means by which these data will be obtained. This work may be divided into two tasks:—(1) that of securing a complete list of all lands and their areas, and (2) that of describing and valuing the lands so listed.

*Desirability of a Cadastral Survey*:—There is but one way by which this first class of information can be secured in a complete and thoroughly satisfactory manner—that of having a complete cadastral survey made of the whole country. By a cadastral survey is meant a survey which will determine and locate the boundaries, not only of political subdivisions of the country, but of all individual holdings of land into which the country is divided. Where this is accurately done it is impossible for any piece of land to escape being listed or its area to be inaccurately stated. It moreover becomes possible definitely to identify each piece by assigning to it a number or other designation on the maps giving the results of this survey.

*System where a Cadastral Survey is not Feasible*:—Though it is well to have in mind the theoretically desirable, it must, however, be recognized that this ideal can not at once be attained. The making of a complete cadastral survey is a monumental undertaking. For a country such as China it would require many years to complete and would involve expenditure of millions of dollars. To await its completion would thus mean postponing for years the putting into execution of a reformed system of taxation. Such a postponement would be in the highest degree regrettable. This being so, China while recognizing the desirability of this work, and taking steps for its ultimate accomplishment, should seek other means of securing this information which though less effective, would represent methods that may be immediately applied.

In the assessment of land in Porto Rico this same problem had to be faced. There it was decided to postpone for the future the making of a cadastral survey, and to proceed at once to the making of as complete a list of lands as could be secured by personal investigation on the part of the agents entrusted with the work of making an assessment proper, that is, of describing and valuing the several pieces of land. This involved the division of the country into districts corresponding to the political sub-divisions of the country and the subdivision of these districts into smaller districts of such a size that a single assessor or a chief assessor with his assistants, could travel over the district and, by personal inspection, note, list, and assess all lands situated within it.

Though these assessors did not have the task of surveying their districts they were instructed, when feasible, to prepare sketch maps, or sketch maps were prepared for them, on which were to be entered, with as approximate accuracy as circumstances would permit, the several properties as they were assessed. These sketch maps were prepared in outline from such maps of the provinces and their subdivisions as might be in existence. They were of course made on a much larger scale than the maps from which they were prepared. On these sketch maps were then entered as accurately as could be done all natural and artificial features, such as roads, rivers, canals, etc. Especially was the effort made to note all roads whether public or private. Equipped with these maps, the assessors were in a position to traverse each road and indicate, at least roughly and approximately, all properties abutting on, or reached by these highways. In doing this work every possible use was also made of such records of pieces of land and of landowners as were in existence, and of the knowledge possessed by local authorities.

This, or some similar method, is the one which will have to be employed in China, unless the work of installing a new system of taxation is to be indefinitely postponed. It is not pretended that this system is in all respects satisfactory. It is certain that under it there may be a failure to get track of many pieces of land, and that in many cases the exact area of such pieces as are listed will not be obtained. It is, however, the best that can be done. Its results will represent a fair approximation to accuracy and will thus constitute a basis to be revised as progress is made in conducting the work of a formal, accurate cadastral survey.

*Administration Organization Required for Making the Assessment*:—We have now outlined the problem, both theoretical and practical, of the introduction of a land tax. The next point requiring consideration is that of the organization that will be required to carry these plans into execution. This problem presents two phases: the organization of a central office that shall have general direction and supervision of the work, and the organization of a field force that shall perform the actual work of listing and valuing the lands.

*Organization and Work of the Central Office*:—At best great difficulty is going to be encountered in securing a proper corps of assessors and in ensuring that they perform their duties properly. This being so, it is of the utmost importance that, as far as possible, the field work be carefully planned, and detailed instructions to the assessors be formulated before any work in the field be begun. The object aimed at should be that of performing all work possible in the central office and of reducing the work of the assessors to that of carrying out instructions emanating from that office. A prime requisite of the work of assessment is that it shall be done in a uniform manner. Such uniformity can only be secured when all the assessors are working under instructions which leave the minimum of opportunity for the exercise of purely personal opinion.

To illustrate what is here meant let us take the matter of the description and valuation of lands. If the assessors were simply given the general instruction to describe and value lands, their returns would be of so varied a character that it would be impossible to harmonize them in the central office. To avoid this two things are necessary: (1) the preparation of forms, use of which must be obligatory in describing lands; and (2) the formulation and adoption by the central office of standards of value.

*Use of Forms for the Description and Valuation of Lands*:—The only effective way of ensuring that the returns made by the assessors shall be at once uniform and give the information required by the central office is that of requiring the returns to be made on prescribed forms. This means that the same information will be given about each piece of land and given in the same way. A separate form or sheet should be used for each piece of property. In Porto Rico it was found desirable to have different classes of land. There was then a form for the description and valuation of tobacco land, one for coffee land, one for sugar-cane land, etc. This was found desirable in order that certain details regarding each class that were peculiar to that class might be secured. The object aimed at in determining the character of these forms was not only that the central office should secure descriptions of the properties in a uniform way but that this description should be of a character that would enable the central office to carefully scrutinize each return for the purpose of assuring itself that the assessor had performed his work properly, and that the valuations arrived at were justified by the description of the properties to which they related. The theory in a word was that the assessor must in all cases justify his figures. We will have occasion in another place to emphasize the absolute necessity that provision be made for the exercise of the most rigid scrutiny and supervision on the part of the central office over the work of the assessors in the fields. The assessor must know that his work is being so passed upon.

*Adoption of Standards of Value*:—The placing of values upon land might seem to be one that could only be done by the persons actually inspecting the properties. In one sense this is true. In another, however, it is imperative that they should not be left entirely free in arriving at a decision. Unless some restraint is put upon them, their individual judgments will show wide variations and result in great inequalities in respect to the values fixed. This difficulty can be avoided by the central office fixing certain standards of value to be followed by the assessors. This means that before the work of assessing individual properties in a district is begun the central office should cause to be made a careful general inquiry regarding conditions and values in such a district. On the basis of the information thus obtained the effort should be made to classify the lands of the district

according to their character and to assign to each class the range of values within which the value of any particular piece of land in that class should fall. Thus to illustrate, one class may be that of "pasture land" and provision may be made for 3 sub-classes, "No. 1," "No 2" and "No. 3" according as land of this class is of first, second or third grade as determined by its quality and location. For each of these three sub-classes a general standard range of values may be fixed, as from $100 to $200 per unit of measure for class No. 1, from $50 to $100 for class No. 2, and less than $50 for class No. 3, these figures being arrived at as the result of preliminary inquiry above referred to.

The mere statement above given will show the great advantages to be obtained from making this preliminary study of conditions and of fixing the standards that must be followed by assessors in doing their work. If it is carefully done, not only will the results be more uniform and far more satisfactory than would otherwise be the case, but the actual work of assessment will be enormously facilitated. To the assessors it will mean that they will know exactly what they are to do, and they can thus proceed with far greater speed and certainty than they could if they were left more largely to their own devices. To the tax payers it will mean that their interests are not being left to the whim or judgment of an individual who may not be fully qualified to perform the delicate duties with which he is entrusted. To the central office it will mean that it will have the means of passing judgment upon the work of its agents in the field.

A further advantage of this system of forms and standards is that it will greatly lessen the protests that will be made against the action of the assessors and will give to the central office the means by which it can pass upon such protests as are made.

So important is this matter that the whole success of the undertaking may almost be said to depend upon the care and thoroughness with which this preliminary work is done. The writer had the experience of participating, as Assistant Director of the Census, in the taking of the great census of population, manufactures and farms of the United States in 1910. In this census a detailed description and valuation had to be secured of every farm in the United States, and use was made of over 70,000 enumerators, corresponding to assessors, in securing the data for transmission to the central office. The success of this great undertaking was absolutely dependent upon the extreme pains that were taken in carefully preparing for the work, in drafting the forms upon which the returns were to be made and the instructions setting forth the manner in which the forms were to be used, and in fixing definitely the standards to be observed in arriving at values. Several years and the expenditure of thousands of dollars were required in carrying through this preparatory work. The problem confronting China in carrying through an assessment of the land of the Republic is not dissimilar, from the administration standpoint at least, in both scope and character from this undertaking of the United States. Here, as there, success will as stated depend upon the care that is taken in planning the undertaking and in performing the necessary preliminary work before actual field operations are begun. Every dollar and hour spent on this work will mean a saving of many times the number of dollars and hours that will be required for the performance of the field work itself.

*Organization of the Field Force of Assessors:*—It is unnecessary for us to point out the extreme importance of securing competent men for this important work. It is due to the recognition of the difficulty that will be encountered in securing such men that so great emphasis has been placed on the desirability of carefully planning in advance for the work, of prescribing in all possible detail the duties of such a force and of fixing definitely the forms and standards that shall be employed by them. In view of the magnitude of the undertaking it will be essential that the country should be carefully divided into districts and each district be treated as an administration unit. It is suggested that a director or supervisor of assessments be placed in charge of each district and that upon him be placed the responsibility of selecting, in accordance with the regulations prescribed by the central office, the force of assessors and assistant assessors, and of thereafter exercising a direct supervision and control over the manner in which they perform their duties.

For the performance of the field work it is further suggested that each district be further sub-divided into assessment districts with a chief assessor in charge of each. Such chief assessor will be assisted by a certain number of assistant assessors who will work under his immediate direction. The idea is that the chief assessor and his assistants will be in constant daily contact with each other; that each day the assistant assessors will turn in the forms filled in by them, representing the assessment of individual properties, to the chief assessor. He will carefully scrutinize them, determine whether they have been properly made, and when in proper shape forward them to the director or supervisor of the main district. Each form should bear the signature of the Assistant Assessor doing the work and that of the Chief Assessor. A careful record should be kept of the work of each assistant assessor so that the superior authorities can keep an accurate check on the work of all employees in the field. It should be the duty of the chief assessor himself to make assessments when practicable and especially to attend to the assessment of the more important properties or those presenting unusual difficulties. Especially is it desirable that responsibility should be definitely located. The chief assessors should be held responsible for their own work and that of all their assistants, the directors or supervisors for all the work of the chief assessors in their districts.

It starting the work it may be desirable for the work of assessing in each district to be begun gradually; that is, a beginning may be made by appointing only a few chief assessors and their assistants and undertaking the work at once in but a few assessment districts. Then as the assistant assessors acquire experience they may be promoted to the position of chief assessors and placed in charge of new districts with assistant assessors under them. A great advantage resulting from this policy will be the incentive that will be given to assistant assessors to work energetically and properly through the knowledge that if they do so they can expect promotion to the more important posts of chief assessors. A further incentive might be furnished by providing for a grading of the chief assessors and the assistant assessors and from making promotion from one grade to another as proficiency in their work is displayed or as they continue in the service for certain lengths of time. Coupled with this as has been pointed out, should go the knowledge on their part that their work is being carefully scrutinized by their superiors, and that whether they do good or bad work will be known by such superiors and that they will be rewarded or penalized accordingly.

*Adjudication of Disputes:*—An essential feature of the scheme for the assessment of land must be the provision of means through which disputes arising between landowners and assessors regarding the description and valuation of their lands may be heard and adjudicated before the final fixing of assessments is had. This means three things:—first, that full information will be given to landowners regarding the description; that is, statement of area, and grade or class, and the valuation on their lands by the assessors; second, that the landowners will be given an opportunity, if they believe that any mistake has been made in stating the area of their holdings, or in grading the land, or in valuing it, to file a formal protest against such action and to support such protest with such statements or other documentary evidence as they may think proper; and, third, the constitution of some tribunal for the hearing and adjudication of such claims.

The necessity for action of this character rests upon a number of considerations. In the first place, it is of extreme importance, from the political standpoint, that this great body of citizens, the most influential in the Republic, shall feel that the government is making every effort to treat them fairly and equitably, and that the fullest possible protection is being accorded to their property rights. The great problem now confronting China is, on the one hand, the political education of her people, and, on the other, the securing of their loyal support of the government. To many persons the only direct relation that they have with the government is as taxpayers and the character of this relation will thus exercise a profound influence upon their attitude towards the government under which they are living.

In the second place the provision of a system for the receipt and adjudication of complaints constitutes by far the most effective check that the central office will have upon the work of the individual assessors. The knowledge by them that appeal can be made from their decision and that any improper action on their part will be brought to the attention of their superiors cannot but prove a powerful deterrent to misconduct and ensure the best effort on their part to make their action such as will be supported by their superiors.

In Porto Rico, where the population to be dealt with was very hostile to the change, and extremely suspicious of the motives and acts of the government, great care was taken to cover this point in a satisfactory manner. Following is the system that was there provided. For each property assessed the assessor had to fill in the appropriate form describing the property in detail, that is giving its area, the character of land as determined by the use to which it was adapted and to which it was actually put, the class or grade to which the land was assigned and the value per unit and in the aggregate. This form was made out in duplicate. The original was turned into the office as the official record of the assessment and the duplicate was delivered to the landowner if possible and if he could not be found to the occupier or other person in charge. The owner or occupier was then given full information regarding the manner in which it was proposed to treat his land for taxation purposes. This duplicate furthermore had printed upon it precise instructions regarding the right the owner had to file a protest against the action taken, if he desired to do so, the time within which such protest should be made, the person with whom the protest should be filed, etc. With this duplicate was also furnished an official form on which the protest was to be made. This was necessary in order to ensure that the protest if made should be of such a character and in such a form that it could easily be considered.

It might seem that a procedure such as this would invite the filing of protests and that the number of protests would be so great that it would be impossible for the government to pass upon them. This would have been true but for the fact that certain standards of classification and valuation were fixed in advance with the result that it was possible in the majority of cases to make taxpayers see that the treatment accorded their lands was in conformity with such standards and that consequently it was hopeless for them to expect that their protests would receive favorable consideration. It must be recognized, and the statement should be put upon the form, that it is a physical impossibility to give the properties their exact value, even supposing that properties have a fixed value, which is not often the case, and that consequently no change will be made except when it can be plainly shown that a very material error has been made. The assessors were instructed to use the utmost tact in treating with taxpayers to explain to them the difficulties inherent in the undertaking and to secure their acquiescence, if possible, in the decisions reached by the assessors. In Porto Rico these efforts met with a large measure of success. The taxpayers for the most part felt that an honest attempt was being made to treat them fairly and protests against the action of the assessors were relatively few.

For the hearing of such protests as were made there was organized a Board of three persons, of which the writer, as head of the department of finance, was *ex officio* the Chairman. The protests were arranged by districts. Each case was examined on its merits. The papers in each case consisted of the original assessment form as turned in by the assessor, the protests and supporting documents filed by the taxpayer, and often a reply made by the assessor where the statement made by the taxpayer had been referred to him for comment. As each district was taken up the chief assessor in charge of the district was kept in attendance upon the Board in order that he might give explanations as required. The other two members of the Board were persons specially selected for the position on account of their personal knowledge of land conditions and values in the Island.

A careful record was kept of the action taken upon each case. For this purpose use was made of a special form upon which the decision was entered. This form when filled in was attached to the other papers. The office then had on file a complete record of the action taken in respect to the assessment of each piece of land. In the great majority of cases this record consisted only of the assessment return describing and valuing the property. In other cases it included the papers bearing upon the protest against the assessment as first made and the decision arrived at which we have just described. This record was of incalculable value when in after years the matter of revision of assessment was taken up.

This general system, with certain modifications to meet special conditions would, in the opinion of the writer, be adaptable to conditions in China. One of the modifications that would be required would be that a Board of Revision would be required for each province and possibly for each major division of a province, instead of a single Board for the whole country.

*The Revision of Assessments* :—In the foregoing we have described the steps that have to be taken in the making of an assessment of land for the first time. It is evident that this problem of making an original assessment presents difficulties which are not present, or at least are present only in an attenuated form, in all subsequent assessment work. The great difficulties encountered in making a first assessment are :—the securing of a list of the properties to be valued; the establishment of standards of valuation, and the organization, instruction and supervision of a force of assessors from among persons having had no experience in this class of work. These difficulties once overcome are largely overcome for all time. Thereafter in all assessment work attention may be almost wholly concentrated upon the single problem of revaluing properties already listed.

Notwithstanding these facts it is important to note that with an original assessment of property once made, there will still remain much to be done. It is well to realize that even though the best efforts be put forward to make the original assessment as perfect as possible the results will not be thoroughly satisfactory. It is inevitable that pieces of land will escape assessment; others will be assessed twice; mistakes will be made in stating the areas and character of the land; and the valuations placed on the several pieces will in some cases be too high and in others too low. These defects are bound to occur on account of the inherent difficulties of the undertaking, the lack of maps, records and other data from which to work, the fact that the work has to be done by a force which has had no prior experience in such an undertaking and with no precedents to guide them; and the further fact that the work be performed with great expedition.

For these reasons and because certain changes in the way of new land being reclaimed, other lands being destroyed through floods, individual pieces of land being consolidated or subdivided, and values changing as public improvements are made, it will be necessary for the government, immediately upon the original assessment being completed, to undertake the work of its revision. This work of revision, as has been pointed out, will be a far simpler undertaking than that of the original assessment. In addition to the advantages that have already been pointed out, there are the additional advantages that this work will be done by persons who have gained experience in the work, and can be prosecuted more deliberately and carefully.

The principle upon which the government should proceed is that of making a careful selection of a comparatively few assessors from among those who performed their work on the original assessment most efficiently; and of assigning to this small and select corps of expert assessors the work of systematically examining into, and, when necessary, of revising, all the assessments as originally made. If necessary, this work can be spread over a considerable number of years. It is important to have it known that this work of revision of assessments will be undertaken. Such knowledge will constitute an incentive to the assessors engaged on the original assessment to perform their duties properly since they will know that the more proficient among them will be retained for subsequent employment upon revision work. It will tend to allay the fears of the landowners since it will make known to them that they will have a further opportunity to have considered any just grounds of complaint that they may have.

[*The Memorandum will be concluded in the next issue of the Review, when parts III and IV will be published—Ed.*]

# THE FAR EASTERN REVIEW

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## A WARNING TO CHINESE POLITICIANS

[BY AN AMERICAN]

The revolution of 1911 was an attempt upon the part of the Chinese people to secure representation in the Government for the protection and promotion of the interests of the people, and the question is often asked by intelligent foreigners, and Chinese as well, whether such representation has been gained as a result of this and the two successive revolutions.

Revolutions occurring in China cannot have the slightest degree of success unless supported by at least a fraction of the moneyed interests among the Chinese themselves, and after five years of so-called Republican Government it is questionable if the Chinese politician has as yet realized the reason why he has been supported, first in his successful overthrow of the Manchus, and later in the elimination of Yuan Shih-kai and his immediate following. To those Chinese who are not directly concerned in the stability of their Government it is apparent that little has been done for their immediate welfare. The Government at Peking in 1911 and 1912 was split owing to the constant wrangling among the professional politicians of the North and South in their never ceasing contention for power. The revolution of 1913 was a direct result of a political faction—having lost in its combat with the Northern political faction—resorting to armed force; but, failing to succeed against Yuan Shih-kai, its leaders were compelled to retire to various foreign countries to prepare for another revolution.

In 1915 the Chinese people were again called upon to support a revolution against Yuan Shih-kai because of his attempt to assume an Imperial Crown. Whether Yuan Shih-kai was right or wrong history alone can decide for us, and it is beyond this article to consider the merits of the case. Yuan Shih-kai died on June 6, 1916, and since then six months have gone by without anything having been done for the good of the people. Parliament, since its revival, has met daily, but the needs of the people have never been considered. In the sessions of the two Houses of Parliament we find permanently upon the agenda paper names of individuals who are to be impeached, and it seems to those most interested in Chinese politics that the personal phase of politics is far more exaggerated than that which should be the sole object of Parliament—the good of the people.

In the building up of a stable Government the one thing needed is the confidence of the people, and without this nothing can be had. It is patent to all that the masses in China to-day are absolutely without faith in the various Governmental Departments. This article is not written in any other sense than with the desire of calling to the attention of the Chinese politician that unless the politicians are willing to consider the feelings of the people, the people will of their own accord overthrow the present Government or will voluntarily allow agencies other than those of native origin to work in their behalf.

The main object of the Government should be to protect and promote the interests of the Chinese business man, without which China can never hope to succeed. In the Houses of Parliament to-day, business interests are in nowise represented, nor are they represented in the various Boards of the Government. The Chinese business man has for the past five years gradually drawn his capital out of various commercial enterprises and has sought to conserve his little saving by hoarding it in foreign banks or burying it in some hidden spot. In travelling over China to-day it is impossible for one to find a single Chinese business man who is willing to invest his money. The professional politician now constantly avers that the battle has been successfully fought for the people against a corrupt Government, and that to-day the Chinese are willing to risk their money because they feel the Government is now in a position to give them sufficient protection. It is needless to say that if this were really the case the Ministry of Finance would have but little trouble in securing by the method of internal bond issues sufficient money to carry on the Government without the necessity of contracting foreign loans. As it is, the Provinces

cannot collect the amount of revenue derived from the same sources previous to the Yunnan rebellion simply because revenue producing resources are gradually decreasing in value owing to the inactivity of the business man.

It is high time that the Central authorities came to the realization that China is now fighting her last fight against foreign domination, and unless the interests of the people are considered there is no hope of there being a united China under Chinese control. The one thing that Chinese must have is a safe-guarding of their own interests, which is a protection of a permanent nature. The professional politician can afford to promote revolutions whereby financial gains are made that will support him in time of exile, but this privilege is not one which the average business man is allowed to enjoy. In looking over the names of the various heroes of the three revolutions, it is extremely difficult to find one that has not profited financially by the revolution with which he was connected. The money that has gone to the support of the various political leaders and their following has been paid from the pockets of the businessman, and he has begun to weary of the constant drain upon his decreasing income owing to the instability of the Government.

Foreign financial aid is undoubtedly necessary, but this aid should be given in such a way that it can be turned to the good of China and her millions. Foreign nations have, during the last five years, profited by the misfortunes of the Government, and vast concessions have been made in exchange for money that has been expended upon political agitation and revolution. This should cease, for the foreigner as well as the Chinese will suffer in the end. It would be far better for the foreigners to come into China and take charge of the administration of the Government than that the indebtedness of the Republic should be increased to such an extent that China should be forced into a state of inextricable bankruptcy and foreign Nations be unable to come to a definite understanding among themselves. The total indebtedness of the Chinese nation is approximately $960,000,000, and it can be safely said that the total sum expended for revolutions has been approximately three billions of dollars. The Central Government has squandered the money derived from foreign loans, but that, in fact, has been a mere pittance when compared with the millions squandered by the professional politicians throughout the country. To-day we have the Bank of China and the Bank of Communications with practically no assets, but with liabilities amounting to not less than $250,000,000. We have in China to-day approximately 6,000 miles of railroad under operation, and these lines have been drained to the very last cent for political purposes, and rolling stock cannot be bought because of this fact. There is not a single source of revenue that has not been mismanaged or the funds mis-appropriated by the politicians, and the Chinese people have been in every instance the sufferers.

A clean and intelligent administration of Chinese affairs must be had, or China will fail to exist much longer as an independent nation. The constant attacks made upon the individual and the Government by the crowd of "rice-eating" politicians to be found in Parliament is doing nothing more than undermining the very foundation of the country. If personal bickerings could be set aside and the sole aim of Parliament be the creation of a stable and efficient Government, China would succeed.

Spheres of influence in China are the direct result of China's own mismanagement of Government affairs, and these spheres of influence, held by various foreign powers, can only increase in proportion under the weakening of the Central Government. And foreign investors are now beginning to realize that the safe-guarding of their interests in China will mean a thorough reorganization of the Chinese Government along lines that will insure permanent peace. It is safe to say that China to-day is in a weaker position than she has ever been before. The foreign Banker has no confidence in the Government, as has been evidenced by an unwillingness to advance money. While many will contend that the European war prevents England and France from assisting China financially, yet those who understand the situation readily realize that a paltry twenty-five or thirty millions of gold dollars is nothing.

For the first time the United States has taken an active interest in Oriental affairs, and both the Democratic and Republican parties are waking up to the fact that China is a field for investment unparalleled in the world, and it is certain that a foreign policy, especially as regards Far Eastern affairs, will be developed by the Washington Government. However, owing to the large losses incurred by the American investor in Mexico the Chinese will find the American business man rather shy in investing his capital in China under the present Government. The United States will have to advocate a strong foreign policy, or otherwise American capital will not find its way into China. The Wilson administration withdrew from the Six Power Group on the ground that it was not the intention or the desire of the United States to interfere with the internal machinery of the Chinese Government. This is a most laudable reason for the withdrawal, and the Government, as well as the people of the United States, felt at the time that the Chinese, after the overthrow of the Manchu Government, would establish an efficient administration; but after five years it has been found that China is weaker than at the time she entered upon the formation of a Republican Government. The American business man realizes this situation, and will be influenced by reports coming from China when he considers the investment of his money here.

The European war and the consequent surplus of capital in the United States is causing a keener interest in Far Eastern affairs by the average American business man, and this interest can have but one object, namely, to assist China in the formation of a stable Government under which native as well as foreign finance can find permanent protection.

This article is written with the hope that the Chinese people will not overlook the fact that the American investor is as careful as the European, and that unless the Chinese Government will bring into its administration competent Chinese business men to administer the affairs of the nation, that the United States will have to resort to the same plan of action as advocated and put into effect by the Five Power Group at present in China.

To-day China is split into various political organizations, and the will of the people has been entirely ignored. The time has come when a reckoning must be made, and with the close of the European war, unless China has succeeded in giving some sort of stability to the administration in Peking, the foreign powers will undoubtedly unite in the control of China's financial administration, which will strike at the very root of all Government institutions. The whole matter now resolves itself into the simple question: *Do the Chinese wish to reform their own country or have it reformed for them by foreign powers?*

## MARSHAL FENG KUO-CHANG AND CHINA'S FUTURE

Of late the voice of the pessimist has been loudly raised in China, especially among foreigners, and it is, therefore, cheering and reassuring to read that the Vice-President of the Chinese Republic has a robust confidence that the clouds will pass away and his country enjoy a sunny future. Marshal Feng Kuo-chang can properly speak as one having authority. Never an extremist, he kept his head during crises that confused the understanding and betrayed the judgment of less well-balanced men, and, as a result, the views that he takes on any particular question are accorded considerable weight both by foreigners and his own nationals.

In the interview with the Vice-President published elsewhere he does not attempt to deny that superficially the political

situation in China is not reassuring. He urges, however, that it is inevitable that during a state of transition difficulties should present themselves, and certainly, if he had cared to, he could have quoted history to support the contention. Neither France nor America succeeded in instantaneously creating a harmoniously working Republican government and five years in the history of a country such as China is too brief a period for a satisfactory readjustment to be effected. Marshal Feng is on sound ground when he urges that the experience of old China must co-operate with the theory and enthusiasm of Young China to perfect the system of government. Progress cannot be made if the highest administrative positions are filled by men who may have the clearest idea of what they desire to accomplish, but not the remotest idea how to set the administrative machinery at work to achieve the result sought. The plan that General Feng suggests of placing men of experience in the highest positions and allowing Young China, under their direction, to carry out reforms is an excellent one. In some degree that system operates in Siam. The official head of each Ministry in that country is an experienced Siamese, but his chief executive officer and adviser is a foreigner. The foreigner, who is, of course, thoroughly well equipped theoretically, makes recommendations to the Minister and the latter weighs the recommendations in the light of his experience and his knowledge of the psychology of his fellow-countrymen. This experience and knowledge frequently enables the Minister to point out to his foreign adviser that, while a proposed reform might be theoretically desirable, there existed practical difficulties of which the theorist had no knowledge. In the case of China the young men who had gained theoretical knowledge abroad could place their suggestions before an experienced chief for consideration, and he would be able to point out those which were practicable. Were this done no time would be wasted in impracticable schemes whose failure would discredit others, by the adoption of which the country would greatly benefit. There are in the ranks of Young China many men who will in time render great service to their country, but this time will arrive the more speedily if Young China is willing to gain experience under the direction of those who already possess it. There is no suggestion on the part of Marshal Feng that a policy of reaction should be adopted. He advocates real and cordial co-operation between those who know theoretically what should be done and those who know what it is possible to do. An automobile will carry passengers to their destination infinitely more rapidly than a stage-coach, but a driver, who while understanding how to handle an automobile knew nothing of the road to be traversed, its dangers and difficulties, would be likely to land his passengers in disaster. Were he to have an old stage-coach driver who knew the road thoroughly sitting next to him ready to advise him when to slow down, to turn an awkward corner, and so on, progress would be speedy and safe. Marshal Feng's advice is sane and sound and it is sincerely to be hoped that it will be followed.

## JAPAN TRIES TO PERSONALLY CONDUCT AMERICA TO CHINA

It has been reported in several Japanese journals, and in at least one of an official character, that the Japanese Government is about to attach to its embassy in Washington Japanese experts upon Chinese affairs for the enlightenment and assistance, if not actual instruction of American diplomats, executives, and financiers in their dealings with China. As the Japanese Government neither has, nor claims, a reputation for altruism, it is naturally to be assumed that this very unique move is planned to benefit Japan. America has not asked Japan for any information about China nor for any guidance in the direction of her China policy. Neither has China asked Japan for any free advertising in America, but Japan, noting that American interest in China is growing rapidly, with an alarming rapidity as many Japanese view it, seems to have decided to volunteer what is described as "reliable information" to the American Government and people.

However the American people may receive this unsolicited assistance in the management of their foreign relations, commercial and political, China, if she ever comes to hear of the matter at all, and if she received the news with anything more than indifference, will be vastly surprised and will be at an utter loss to understand why one of the ever-troublesome outside nations, which constantly worry and perplex her, should take sufficient interest in her affairs to send envoys to another of these ulterior lands to convey information and possibly influence political policies. Whatever one may think Japan's commercial and political motives are in preparing such a mission to Washington, as a mere matter of enterprise it contrasts so strikingly with anything which China has done in the immediate past or has even thought of doing, that one might expect the Chinese to take the lesson to heart and do a little advertising on their own account instead of leaving it to their neighbor, whom they fear and suspect with rather good reason, to present their political and commercial present and future to the heads of the nation upon whose moral support they depend for the maintenance of their national integrity. It would be a pleasing surprise however, to those interested in China if the Chinese were even concerned or slightly resentful of a Japanese effort to depict China and Chinese conditions to the Americans as the Japanese would have Americans view these things. China after several hundred years of intercourse with foreigners, which has been painful and humiliating to her during her last century, still insists upon regarding herself as a detached national entity to which foreign relations are the most negligable feature of national life, until she gets into really serious trouble and is forced to realize for a time that she does not stand alone, the center of a little Mongolian cosmos to which the other powers of the world are only detached fringes. In seasons of comparative peace and immunity from external annoyance she invariably reverts to this latter traditional conception of herself and in this state of mind she would no more think of taking advantage of an era of placidity to improve her foreign relations than of setting out on a campaign of world conquest.

The present war in Europe has greatly enriched Japan, and has given her what her publicists describe as the "opportunity of a thousand years" to expand politically and commercially, to develop new industries at home and to establish new and firm trading relations abroad. A fair proportion of the raw materials which Japan has used in building up her old and new industries during the past two years has come from China, yet China on her own account has done nothing towards enriching herself in these two years other than yield up passively such crude products as Japanese and other foreigners saw fit to come and take from her. Japan gurgles with joy, and rightly so, over the prosperity which the war has brought her, while in China the only evidence that there is a war in progress is the chorus of groans from merchants whose trade in long established lines has been affected by the shortage of shipping or the high freight rates. With an almost unlimited supply of minerals, and animal and vegetable products and a sufficient number of mills and industrial plants to form a basis for industrial growth, the Chinese Government could have stimulated its merchant class and its proletariat into an industrial expansion which would have left them at the end of the war with a manufacturing capacity, and with shipping to carry their products, to which they cannot hope to attain in several decades of ordinary commercial routine. But the Chinese government has been most conspicuous during these war years for its kaleidescopic changes and the political gymnastics of its too numerous leaders, while the merchant class has been wondering what the war was all about, why the things that used to be bought could not be bought, and the things that used to be sold could not be sold, and the proletariat has been paying a little more and thinking nothing in particular. As the result of two years of unprecedented commercial opportunity, China is a little

poorer than ever and has lost a little more credit and political prestige, while Japan is getting out of debt, heaping up a gold reserve, building a commercial fleet which will do credit to any European nation, and establishing a real, substantial claim to her coveted political hegemony of East Asia.

This Japanese educational mission to Washington will be interpreted by the friends of Japan as a progressive move in the projected American-Japanese co-operation in the development of China. Those who are suspicious of Japan and doubt the honesty of her co-operation project, will see in it an attempt to force America to see all Far Eastern questions through a Japanese lens. There is undoubtedly a political faction in Japan which looks upon all American enterprise in China as a menace to Japanese interests on the continent of Asia, and which voices through its press vague warnings of impending trouble if American commercial interests and Japanese politico-commercial interests in China should happen to conflict. To this faction it is essential that American official opinions should be swayed by information about China with a Japanese interpretation and commentary attached. By the enemies of Japan and by those who are even slightly suspicious of her the Japanese committee of experts upon China, which is to be attached to the embassy in Washington, will be regarded as a Board of Explanations, which will sit upon each bit of news that comes out of the East, Nipponize it as far as possible, or deny it with all fervour, and pass it on with a verdict to those whose opinion and influence in Washington are likely to be of weight. It is reported in the *Jiji* that S. Yoshida, at present consul at Antung in Manchuria, will be one of the first appointees to this unique office abroad, and that several others, thoroughly familiar with China will follow him shortly.

Whether Japanese efforts in America have the effect of creating a pro-Japanese bias in the country or whether they simply succeed in centering suspicion upon their promoters, their thoroughness is worthy of thought and is a striking contrast to the massive inertia of China. To the activities of their individual propagandists and merchants who have been feverishly active of late, they add a system of press agency which is Teutonic in its efficiency, and to the press agency they now add an official bureau of information upon Chinese affairs which will confide to the ears of those in the high places the thoughts and sentiments about the Orient which the press agency conveys to the masses.

## EXPLOITATION OF RUSSIAN RESOURCES BY JAPAN

The plaint of the Novoe Vremya published in the November issue of the FAR EASTERN REVIEW called attention to the foreign invasion of Russia and to the danger that the vast undeveloped resources of the country would pass into foreign hands and be lost to the Russian people after the war. The Japanese side of this exploitation was merely mentioned in passing by the Russian journal, but the following notes from Japanese sources, described as the "Observations of a Government Expert," shed considerable light on what the Japanese hope to accomplish in Russia and more especially in Siberia.

After detailing the conditions that permitted the Germans to secure such a strong hold on the import trade of Russia, the expert discusses the need of a Japanese-Russian joint bank, and asserts that if Japan and Russia, co-operating, have not enough money for proper economical development they can borrow it from a third power, presumably the United States, although that country is not mentioned by name.

In 1903, the Japanese Honorary Consul at St. Petersberg obtained the Czar's permission to establish a Russo-Japanese Bank at the Russian capital. The scheme came to naught owing to the subsequent war between the two countries. The conditions then were such as to offer little inducement for the establishment of a bank, but now such a bank is declared to be an absolute necessity owing to the extraordinary length of credit obtaining in Russia, a factor so successfully utilized by German merchants, which is an obstacle which cannot be overcome by Japanese traders except with the assistance of a powerful bank. The British merchants are backed by the Anglo-Russian Bank, and merchants of other nationalities in Russia are likewise supported by financial organizations of their own.

A Russo-Japanese Exhibition in Western Russia is of urgent necessity for disseminating ideas of Japanese products among the possible Russian consumers. Towards the end of 1913 there was talk at Petrograd of opening such an exhibition immediately after the close of the war, and last year the public of Kief took up the proposition and approached the Russo-Japanese Association for its support.

The observer asserts that joint undertakings by the peoples of the two countries are the ground work on which to construct the economic rapprochement between them, and are conducive to their permanent friendly intercourse in a political sense. Objects for such undertakings are to be found in large numbers in Russia, and in China, especially Manchuria and Mongolia, but are by no means lacking in Japan. The tea trade, for instance, can be carried on under the joint management of the Russian and Japanese traders.

Russia, rich in natural resources and Japan, says the observer, with capital and technical skill to spare, must needs be able to co-operate to their mutual advantage. If more capital is required than they have at their command, they can draw it from a third country.

The first enterprise that suggests itself to the expert for their joint management is the fishing industry along the coasts of Kamchatka and Saghalien. This industry has formed a perennial subject of disagreeable negotiations between the authorities of the two countries, and although their cordial relations are never likely to be disturbed through any differences on the same subject, occasional publication of disturbing news by the unscrupulous papers of both countries lends a peculiarly delicate colour to the whole affair. It is to be desired in the interest of the "higher politics" of both countries that this source of conflict, even at the southern extremity of Kamchatka, should be eliminated.

The Japanese are advised to use moderation from first to last in settling each and every difference, for the Russians after all have it in their power to refuse to renew the existing treaty on its expiration. The products of the Russian littoral will yield a greater profit if exported to Europe, China and India in a finished state, than in a half-finished state as they are now.

Mining and pasturage in Manchuria and Mongolia are no less attractive undertakings for joint enterprise of the two peoples. The construction of a trans-China Railway to connect the Korean or the South Manchuria Railway with the Russian Central Asiatic Railway or the South Siberian Railway now building, will sooner or later become a practical question, and forms one of the numerous works addressing themselves to the co-operative enterprise of the Russians and Japanese.

The rich natural resources of Russia hitherto comparatively unexploited afford most promising fields for Japanese enterprise, and the following are mentioned by the expert as in the order of their importance: (1) mining, (2) manufactures, (3) electric works, (4) brokerage, and (5) retail trade. Russia, in order to replenish her exhausted capital and to revive the value of her currency, will naturally strive to increase the production of her mines, some of which are the richest in the world in platinum, gold, silver and copper, but whose operation hitherto has been relegated to foreign capitalists. Japanese capitalists, the expert has no doubt, will be accorded the same rights and privileges as other foreign investors by the Russian Government, which will welcome developers of Russian riches from the land of its political ally. There are any number of other enterprises fit for Japanese exploitation in Russia which would be as profitable to the exploiter as they are essential to the best interests of Russia.

Electric lighting and traction in the many towns of Siberia, have long attracted the attention of foreign capitalists and must

appeal with special interest to Japanese business men. The Russian trader is content with exhibiting his wares at his store, and rarely ventures abroad to seek his customer, which is the reason why the business of commission broker is so paying in Russia. The Germans thoroughly understood and utilized this secret. They did most of the selling of Russian goods abroad for the Russians and imported foreign goods for them.

Foreigners of smaller means, especially Chinese, have created lucrative businesses by acting as middlemen among Russians. The Japanese retailers in the littoral provinces of Russia are following the example of their Chinese confreres, though their profits are infinitesimal. If they had sufficient means, or if they could so combine their capitals as to lay in stocks from European Russia in decent quantities for distribution among themselves, they would do better, but their insular spirit and mutual jealousy have so far deterred them from doing what their Chinese competitors have been doing for so many years with perfect satisfaction to themselves.

The Japanese tradesmen are mostly content with satisfying the wants of Japanese residents for rice, soy, *miso*, and the like, or, says the expert "to use a vulgar slang," with squeezing their own nationals. "Of course," the expert observes, "it is better that the squeezing should be done by Japanese than by Chinese, who would have easily filled the place of Japanese but for their presence."

It is deemed most important that Japanese business houses should be represented in Russia by really capable men whose character is above reproach. This action is calculated to have a far reaching effect upon the trade relations between the two countries. It is recommended that they should form a society having a man of character as their representative, to act as intermediary between the Japanese and Russian authorities and come into social and business contact with the representatives of Russian officialdom and industry.

It is also asserted that Japanese Consulates must be established first at Odessa and Irkutsk and later at Riga and Kief. According to statistics for 1913, Germany led the list of foreign Consulates in Russia with 51, followed by Britain with 50, Sweden with 44, and by Turkey in the fifteenth place with 20, while Japan had only four, of which two were in Siberia and only one other had an honorary Consul as its official. Commercial attaches are indispensable adjuncts of Consulates, says the expert, and the importance of their manifold duties cannot be underrated.

# CHINA'S SALT REVENUE

We publish herewith a comparative statement of the revenue collected by the Chinese Salt Administration and deposited in and withdrawn from the foreign banks interested in the Reorganization Loan (and known as the Group Banks), during the years 1913, 1914, and 1915. From this statement it is more than apparent that the reformed administration introduced since the signing of the loan agreement, whereby the tax is collected upon salt at the time of issue, has resulted in a considerable increase in the revenue collected and accounted for. The increase in the figures between 1913 and 1914 gives a very clear indication of the gradual reform introduced. Out of the total revenue collected the Chinese Government have been able to meet all the obligations in connection with which salt revenue has been pledged in any way, and at the same time they received during the year 1914 a clear surplus of $31,304,818.22, and during 1915 a sum of $27,523,066.47, money which they were free to use without any interference or control by the foreign banks. At the end of 1915 there was also a balance of $24,385,191.22, which would have enabled the Chinese Government to have had at least another $10,000,000 for their requirements if it had been necessary. There should now be no question in the minds of the Chinese of the absolute necessity of having a proper system of accounting of their revenues which will enable them to tell exactly what revenue they are receiving and how it is being disposed of. It may be added here that the total revenue which has been handed over to the Chinese Government up to November 30, 1916,—which is not shown in the table herewith—amounted approximately to $60,300,000 to which has to be added the balance of $24,385,191.22 of 1915 revenue still on deposit with the Group Banks on January, 1916. From the total sums available from salt revenue, all the obligations secured under Salt Revenue were met in full, and the sum of $10,071,000 was paid towards meeting the Boxer Indemnity payments for 1916. The total sums handed over to the Chinese Government amounted to the large total of $50,230,258 which makes an average of nearly $4,150,000 per month available for the use of the Central Government.

These results are highly satisfactory when it is remembered that the greater part of the Salt Administration is still being run practically with Chinese assistants, with a very thin red line of foreign supervision. If the Government would only realise it they could, by having an enlarged and efficient foreign service, inoculate into the Chinese staff that spirit of discipline that seems to be lacking in all Chinese organizations that have no foreign control. With an increase in foreign assistance too, for the purposes of prevention of illicit traffic in salt, it would seem possible still further, and immediately, to increase the revenue. It is well known that the quantity of salt taxed according to the published accounts of 1914 (recently issued) is not favourable when compared with the great consuming population of China, which in itself indicates that illicit trade is being carried on to a larger extent perhaps than is believed. Until efficient means for prevention of smuggling and a well organized enlarged service can be established a considerable increase in revenue can only be the result of several years of exertion against odds on the part of the small foreign staff at present employed. In this connexion reference must be made to the state of affairs in Manchuria where active and open smuggling of salt in large quantities is being carried on by Japanese. A Mukden correspondent to the *Peking Daily News* describes how Japanese are now smuggling salt into the very interior by the car load. From the last week in November to the middle of December, he says over 100 train car loads were sent to Penchi station, and the principal salt smuggling stations in South Manchuria, for sale. "On December 10," he writes, specifying an incident, "31 big carloads of salt, covered by hay and other stuffs, and escorted by Japanese smugglers, were sent into the interior districts for sale. They were discovered by Chinese salt police who drove all these cars to their office, but in a few hours the smugglers returned with more than a dozen Japanese policemen, creating trouble in the Preventive Office and smashing everything there." This seems to be a common sort of thing in certain parts of Manchuria, while throughout China proper smuggling is also carried on extensively, a state of affairs that can only be remedied by the organization of an effective preventive service under strictly foreign supervision.

The total quantity of salt taxed during 1913 amounted to 13,581,198 piculs, Ssu Ma scale, and the total revenue receivable amounted to $16,649,625.34. For the year 1914 the total quantity of salt taxed amounted to 28,926,603 piculs, Ssu Ma scale, and the total revenue receivable amounted to $50,459,793.86. The expenses for 1913 came to $3,532,316.52, while during the year 1914 they amounted to $6,773,226.94 against a total deposit with the Group Banks of $11,480,026.83 during the period for the year 1913 and $60,409,675.75 during 1914, which deposits include payments made by the Transportation Offices to the Group Banks, amounting to $3,074,349.37 during 1913 and $15,961,532.80 during 1914.

A phase of the 1914 accounts which seems to show better results than 1913 is the working of the transportation offices, but

it cannot be said that they illustrate success from a purely business point of view. The actual receipts in proportion to the quantities of salt handled show a poor result in comparison with the direct system of taxation which exists under the system of District Inspectorates, the transportation offices being conducted, of course, by the Chinese on Chinese lines. While the total revenue received by them amounted to but $15,961,532.-80, the District Inspectorate offices collected the huge figure of $50,908,402.77. The sum owing to the Government by the transportation offices ($17,281,000) seems unduly large and more than justifiable if efficiency were shown in the system of collection. The accounts of one of the transportation offices shows an enormous loss on the conversion of notes into silver for remittance to the Group Banks, amounting to the huge sum of $2,450,382 out of a total sum collected amounting to $7,856,757.79. This would appear to indicate that the acceptance of depreciated provincial currency notes was not a financial success and practically was a method of merely giving a rebate on the fixed taxes. On the other hand the transference of the total silver collected during the year 1915 was, in the circumstances, highly satisfactory. The loss under "transfer charges and by exchange" was only $272,000 on a total sum moved about the country of some $70,000,000. Incidentally, as all the accounts of the Salt Administration are kept in dollars, this is a scathing commentary upon the argument of the bankers that the Tael is necessary for the purpose of conducting financial operations in China! The Salt Administration, which handles money from all over the country, finds that they never require to consider the Tael until they come to deal with the foreign bankers. This is an experience that is worthy of note by all who would have a change made in the local currency.

Since the above was written we have been able to obtain the following figures for the year 1916:

| | |
|---|---|
| Balance with Group Banks on 1st January, 1916 | $24,385,000.00 |
| Revenue paid into Group Banks during the year 1916 | 71,530,000.00 |
| Interest, etc., received during the year 1916 | 423,400.00 |
| | $96,338,400.00 |
| Contributions towards payment of Boxer Indemnity .. .. .. .. .. .. .. .. .. .. | $10,071,400.00 |
| Interest paid on loans secured against Salt Revenue | 14,928,800.00 |
| Refunds to Central Government during 1916 | 52,226,300.00 |
| Sundry Payments, losses in exchange, etc. | 369,900.00 |
| Balance with Group Banks on 31st December, 1916 | 18,742,000.00 |
| | $96,338,400.00 |

The following table is from the 1914 report:

## Statement of Receipts and Disbursements of Salt Revenue.

*For the year ended 31st December, 1914.*

### RECEIPTS

| | | |
|---|---|---|
| 1.—Balance at 1st January, 1914:— | | |
| Cash in various Offices .. .. | 544,918.23 | |
| Cash in Bank of China .. .. | 756,745.09 | |
| Transfers in transit to Group Banks | 1,137,070.29 | |
| Cash in Group Banks.. .. .. | 11,002,219.78 | |
| | | 13,440,953.39 |
| 2.—Revenue Collections per District Inspectorates.. | | 50,908,402.77 |
| 3.—Remittances from Government Transportation Offices .. .. .. .. .. .. .. .. .. | | 15,961,532.80 |
| 4.—District Inspectorate Suspense (Advances on account of Duty, etc.) .. .. .. .. .. .. | | 1,045,888.24 |
| 5.—Interest Credited by Group Banks .. .. .. | | 231,825.03 |
| Total Dollars | | 81,588,602.23 |

### DISBURSEMENTS

| | | |
|---|---|---|
| *A.*—Administration Expenses Defrayed .. .. | | 5,148,039.46 |
| *B.*—Transfer Charges and Loss by Exchange * .. | | 3,024,745.67 |
| *C.*—Special Government Withdrawals .. .. .. | | 73,793.53 |
| *D.*—Charges and Obligations Secured on Salt Revenue.. .. .. .. .. .. .. .. .. .. | | 21,106,572.99 |
| *E.*—Releases to Government .. .. .. .. .. | | 31,304,818.22 |
| *F.*—Miscellaneous Withdrawals .. .. .. .. | | 10,228.80 |
| *G.*—Balance at 31st December, 1914:— | | |
| Cash in various Offices .. .. | 2,720,875.08 | |
| Cash in Bank of China .. .. | 834,717.29 | |
| Transfer in transit to Group Banks | 186,600.48 | |
| Cash in Group Banks .. .. .. | 17,178,210.71 | |
| | | 20,920,403.56 |
| Total Dollars | | 81,588,602.23 |

* Mainly due to acceptance of depreciated Canton Notes.

## Comparative Statement of Salt Revenue deposited in and withdrawn from the Group Banks during the years 1913, 1914 and 1915

| DEPOSITS | THE YEAR 1913 | 1914 | 1915 |
|---|---|---|---|
| Balance at Commencement of the Year... | | 11,480,026.83 | 17,328,485.81 |
| Interest Credited by Group Banks......... | 8,784.07 | 231,825.03 | 197,052.89 |
| Proceeds of Salt Revenue Received by Group Banks......... | 11,471,242.75 | 60,409,675.75 | 69,277,536.42 |
| Total Dollars...... | 11,480,026.83 | 72,121,527.61 | 86,803,075.12 |

| WITHDRAWALS — Charges and Obligations Secured on Salt Revenue:— | 1913 | 1914 | 1915 | THE YEAR 1913 | 1914 | 1915 |
|---|---|---|---|---|---|---|
| Anglo-German Loan of 1898.................. | | 2,700,024.61 | | | | |
| Boxer Indemnity of 1901 .................... | | 13,505,833.75 | 23,787,463.37 | | | |
| Chihli Provincial Bonds of 1910...... | | 725,973.90 | 731,128.00 | | | |
| Chinese Government 5% Gold (Crisp) Loan of 1912......... | Nil | 4,075,179.58 | 2,998,885.11 | | | |
| Chinese Government 5% Reorganization Gold Loan of 1913 | | ...... | 6,932,262.68 | | | |
| Hupeh Provincial Bonds of 1909...... | | 99,561.15 | 140,343.22 | | | |
| | | 21,106,572.99 | 34,599,082.38 | | 21,106,572.99 | 34,599,082.38 |
| Miscellaneous Withdrawals............... | | | | | 10,228.80 | 22,991.00 |
| Releases to Government .................. | | | | | 31,304,818.22 | 27,523,066.47 |
| Transfer Charges and Loss by Exchange | | | | | 2,371,421.79 | 272,744.05 |
| Balance at End of the Year............... | | | | 11,480,026.83 | 17,328,485.81 | 24,385,191.22 |
| Total Dollars ...... | | | | 11,480,026.83 | 72,121,527.61 | 86,803,075.12 |

# KOWLOON-CANTON RAILWAY (BRITISH SECTION)

[Annual Report for 1915]

The building of the new Terminal Station at Kowloon has made satisfactory progress during the year, the Building itself being practically finished; though owing to the war unforeseen delays in the arrival from England of fittings and fixtures have held up the completion of the interior, it is yet hoped that it may be possible to open the Building for the Public early in the coming year.

A thoroughly up-to-date mechanical interlocking signal system has been installed at the Kowloon Terminus by the Railway Signal Company, Limited, all signals and points within station limits being now operated from a cabin situated at a point overlooking the yard and approaches. The cabin contains 80 levers, 18 of which control 27 points, and 55 are for working 53 fixed signals, ground discs and the gates at Holt's Wharf level crossing, the remaining 7 levers being spare. The new installation was brought into use on November 25th without any interference with traffic. In view of the large number of pedestrians using the above mentioned crossing, it was found necessary to provide an overhead way, and a steel footbridge, originally ordered for a wayside station but afterwards not required, has since been erected here and opened for use of the Public.

Before the Station as a whole can be considered complete, the platforms require to be partly roofed over and the circulating area in front of the west face surfaced, curbed and and metalled. Designs were prepared during the year for the platform roofing and a contract entered into by the Crown Agents for the supply of the necessary materials. In March an order was placed through the Crown Agents for one Avery duplex printing and weighing machine and in July for a Pooley weighbridge.

The repairs to the embankment pitching on the coast line between miles 7½ and 14 mentioned in the last Report have now been completed in a substantial manner and no more trouble may be expected at these points from storms or typhoons.

Quarters for the European staff were commenced in March, one row of three two-storied houses facing south, and one row of five facing east. The former were occupied in September, and the latter in October. The permanent way materials required for the extension to the locomotive yard not arriving till late in the year, very little work could be done on this project. The conversion of the paint shop into a locomotive shed was however commenced and brickwork carried up to roof level in readiness for the steelwork ordered from home, but as this did not arrive a temporary palm leaf roof was erected to enable the building to be used. The erection of the new running shed has been delayed as difficulties were experienced on account of the war in obtaining satisfactory tenders for the steelwork, and further, because possession of the necessary land could not be obtained until recently. New designs for this shed are in course of preparation and probably timber roof trusses on reinforced concrete columns will be adopted. The platform at Sheung Shui station was increased by a width of fifteen feet and the station accommodation doubled. Very extensive repairs were also carried out to the manager's house which has now been put in a state of thorough repair, the cost of the above being charged to working expenses.

The three new Main Line locomotives ordered from England in 1914 arrived in the Colony in May and were erected and have rendered satisfactory service. These engines are fitted with Wakefield's mechanical lubricators to the valves and cylinders and also with tail end rods to the pistons, which is an improvement on those previously purchased. Locomotives Nos. 1, 2, 3 and 4 have all been thoroughly overhauled during the year but no painting could be carried out as the paint shop had to be used as a running shed; this however will be done as soon as the paint shop is completed. During March eight new coaches were completed and put into service, and underframes for four additional coaches were received from home on which two third class coaches have been erected; the remaining two, a first and second class composite and a restaurant car, are well in hand.

On August 7th and 8th an aviation meeting took place at Lok Lo Ha by a Chinese aviator. A most efficient service of special trains was instituted but unfortunately the meeting did not attract the Chinese public to the extent anticipated, largely due to the rather high charge for admission made by the aviator to third class passengers. In August a live fish traffic commenced between Shek Lung and Canton, and in order to deal with this two 30-ton wagons were fitted with special tanks.

All tracks have been maintained to a good standard though in a few places the sleepers are still being attacked by white ants despite constant attention. The Expenditure chargeable to Construction Account to December 31st, 1914, was $14,095,660.69, and during the year further expenditure was incurred on works detailed in this report amounting to $638,995.11, which after deducting a sum of $22,829.97, being receipts on account of sales of plant, etc., leaves a total of $616,165.14 for the year.

The Revenue Statements of Earnings and Expenditure take the usual form. The receipts on account of local coaching traffic amounted to $114,360.34. an increase of $5,961.76 as compared with 1914, while the local goods and sundry traffic show decreases of $2,069.67 and $6,178.67 respectively. The Revenue from through and joint sectional coaching traffic was $21,304.10 less than the previous year mainly due to a fall in the number of through and joint sectional passengers carried as compared with 1914, which was an abnormal year owing to the depreciated Chinese Government notes being for some time accepted at face value by the Railway (Chinese Section). The Working Expenses amount to $297,265.97 or $22,899.58 more than the previous year. The excess is due to the inclusion of expenditure incurred in repairs to manager's house, improvements at Sheung Shui station, and to a payment of rent to the Chinese Section, amounting to $10,478.81, for the station accommodation at Shum Chun from October, 1911 to June 30th, 1915. The Gross Earnings for the year were $343,769.08 as against $364,608.32 for 1914. The balance after paying working expenses stands at $46,503.11.

During my absence on short leave from August 28th to 7th October, 1915, Mr. Robert Baker (Engineer of Way and Works) acted as Manager. The repairs to embankments and erection of the various new buildings necessitated additional engineering staff and in November, 1914, the services of Mr. A. S. MacKichan were obtained. Mr. W. G. Clark, Traffic Assistant, was granted 8 months leave and returned to duty on December 22nd. Mr. W. S. Cuff, Guard, left with the Hongkong Police Contingent on 19th November to join His Majesty's Forces.

H. P. Winslow,
*Manager.*

### Revenue Account for the Year ending 31st December, 1915

| 1914 | Per cent. on Gross Receipts | Expenditure | Amount 1915 | Per cent. on Gross Receipts |
|---|---|---|---|---|
| $ c. | % | *Main Line* | $ c. | % |
| 42,857.71 | 11.75 | To Maintenance of Way and Works | 53,665.32 | 15.61 |
| 129,861.27 | 35.61 | „ Loco. Carriage & Wagon Expenses | 130,184.01 | 37.87 |
| 46,234.00 | 12.68 | „ Traffic Expenses | 47,840.08 | 16.82 |
| 40,422.17 | 11.09 | „ General Charges | 45,006.00 | 13.09 |
| ... | ... | „ Special & Miscellaneous Expenditure ... ... ... | 52.00 | .02 |
| | | *Branch Line* | | |
| 6,369.43 | 1.75 | To Maintenance of Way and Works | 2,828.42 | .82 |
| 7,394.28 | 2.03 | „ Loco, Carriage & Wagon Expenses | 6,380.14 | 1.86 |
| 1,227.53 | .34 | „ Traffic Expenses | 1,310.00 | .38 |
| ... | ... | „ General Charges | ... | ... |
| ... | ... | „ Special & Miscellaneous Expenditure ... ... ... | ... | ... |
| 274,366.39 | 75.25 | | 297,265.97 | 86.47 |
| 90,241.93 | 24.75 | „ Balance (Net Earnings) | 46,503.11 | 13.53 |
| 364,608.32 | 100.00 | | $343,769.08 | 100.00 |

| 1914 | Earnings | Amount 1915 | Total |
|---|---|---|---|
| $ c. | *Local* | $ c. | $ c. |
| 108,398.58 | By Coaching Traffic | 114,360.34 | |
| 10,121.25 | „ Goods Traffic | 8,051.57 | |
| 12,861.59 | „ Sundry Traffic | 6,682.02 | |
| | | | 129,094.83 |
| 131,381.42 | | | |
| | *Foreign* | | |
| 215,045.63 | By Coaching Traffic | 193,741.47 | |
| 10,690.98 | „ Goods Traffic | 13,665.73 | |
| ... | „ Sundry Traffic | 215.00 | |
| | | | 207,622.20 |
| 225,736.61 | | | |
| | *Branch Line* | | |
| 7,018.14 | By Coaching Traffic | 6,593.09 | |
| 472.15 | „ Goods Traffic | 458.96 | |
| ... | „ Sundry Traffic | ... | |
| | | | 7,052.05 |
| 7,490.29 | | | |
| $364,608.32 | | | $343,769.08 |

J. Morris,
*Chief Accountant.*

H. P. Winslow,
*Manager.*

*Kowloon, April 14th, 1916.*

# FEDERATED MALAY STATES MINING, 1915

The official report of the mining industry of the Federated Malay States for last year does not reveal any feature of note. The output continued to fall, and this decline has now been continuous for the past three years, as the following table shows:—

| | 1913. *Pikuls. | 1914. Pikuls. | 1915 Pikuls. |
|---|---|---|---|
| Perak ... ... | 493,753 | 479,621 | 467,346 |
| Selangor ... | 252,765 | 244,665 | 222,298 |
| Negri Sembilan | 36,821 | 35,900 | 29,049 |
| Pahang ... ... | 58,791 | 63,723 | 66,977 |
| Total ... ... | 842,130 | 823,909 | 785,760 |

These figures correspond to the following tonnages: 1913, 50,127; 1914, 49,042; 1915, 46,766. Coincidently with this decline in output there is a corresponding falling off in the labour force employed, which totalled 225,404 in 1913, 171,689 in 1914, and 164,457 last year. The mechanical power has increased, to some extent offsetting the decline in manual labour; but there can be no doubt that the decline in output is closely connected with the diminution of the labour force employed, as has always been the case in this field, where so large a proportion of the work done is hand labour. It is interesting to notice that the proportion of output from purely Chinese mines continues to show a decline. Last year it is estimated that the proportion was 72 per cent. of the total output, compared with 76 per cent. in 1914 and a considerably higher proportion in earlier years. No doubt a gradual change is taking place in the conditions of the industry. We have constantly looked forward to the time when the alluvial deposits must begin to show definite signs of exhaustion, and though the industry has shown marvellous power of adaptability, the experience of the last fifteen years forbids us to hope that the conclusion of the Ipoh Conference as to reserves of ground was a mistaken one. The great feature of the last two or three years has been the success of bucket dredging, and the declining proportion shown in the yield from purely Chinese concerns is an indication of how the introduction of suitable machinery may enable the field to develop by treating previously worked ground profitably. The average price obtained for tin locally was $78.17 a pikul or £153 4s. 3d. a ton, as compared with $73.44 a pikul, equal to £143 18s. 10d. per ton in 1914. The decline in output of 2,276 tons again testifies to the fact that around £150 per ton is a critical price for the industry. It is noticeable that the State which has chiefly suffered in respect of its native force is Selangor, where the exhaustion of the tin deposits is more advanced than elsewhere. This year we have to note a further continuance of the decline, in spite of the improved prices which have been ruling. There was a considerable increase in the horse-power employed in the mines, though probably not so great as would have been the case in peace time. The total shown was 56,197 h.p., compared with 41,623 h.p. in the preceding year. The chief increase was shown in hydraulic, owing to the entry of the Gopeng Consolidated plant into commission, and the re-working of a steam driven electric plant in Perak was the chief cause of the improved showing for steam driven plants.

As regards dredging, seven companies were in operation, accounting in all for 38,585 pikuls. The Malayan Tin Dredging Company, with four dredges, produced 11,966 pikuls from 2,412,860 cubic yards; the Tronoh Mines, with one dredge, obtained 4,338 pikuls from 790,869 cubic yards; the Kamunting returned 8,966 pikuls from 929,000 cubic yards: and the Kampong Kamunting dredge 4,768 pikuls from 640,000 cubic yards. This latter company expects to start a second dredge in the current year. The Ipoh Tin, on a four months' run, obtained 1,760 pikuls from 300,000 cubic yards, while the Chenderiang obtained 4,248 pikuls from 754,000 cubic yards on a nine months' run. Finally, the Tekka Taiping, which ran a little over two months, obtained 1,498 pikuls from 201,500 cubic yards. These figures indicate what the grade of the re-treated ground is, and how it compares with tin dredging propositions in other parts of the world. The amount of tin handled by the European smelters was somewhat less than in 1914—even so, it amounted to considerably over 90 per cent. of the whole, a marked change from earlier years in the direction of increased European influence in the field.

Glancing at the output of individual mines, the following table gives the producers in excess of 5,000 pikuls. The ground treated is also given, to afford some data as to current values. In most cases the figures given in the report include much dead work, and in consequence the yardage is only included when it is stated to be payable wash:—

| Mine. | Output. Pikuls. | Ground Worked. Cu. yards. | Labour. |
|---|---|---|---|
| *Pahang Consolidated ... ... ... | 46,461 | 1,596,000 tons | 3,974 |
| Tronoh ... ... ... | 26,913 | 1,096,334 ,, | 2,592 |
| French Tekka ... | 18,750 | 1,277,500 ,, | 936 |
| Gopeng Consolidated ... ... ... ... | 13,310 | — | 783 |
| Man Fatt Kongsi ... | 11,532 | 228,200 | 1,688 |
| Chan Thye Lee's Mines ... ... ... | 10,746 | 237,610 | 1,480 |
| *Rahman Tin Co. ... | 10,404 | 83,437 | 692 |
| Sungei Besi ... ... | 10,304 | 274,000 | 471 |
| *Titi ... ... ... ... | 7,544 | — | 975 |
| Tan Chia's Mine (Batang Kali) ... | 6,888 | 360,240 | 1,200 |
| Eu Tong Sen's Mine (Kampar) ... | 6,858 | 285,325 | 490 |
| Tekka ... ... ... | 6,603 | — | 454 |
| Tong Hong Kongsi | 6,502 | 222,803 | 775 |
| Chung Thye Thin's Mine (Tronoh).. | 6,379 | 147,245 | — |
| Rahman Hydraulic | 6,026 | 192,000 | 555 |
| ThongHeng Kongsi | 5,501 | 349,910 | 850 |
| Tronoh South ... | 5,366 | 123,000 | 560 |
| Kinta Tin ... ... | 5,353 | — | 520 |
| Kramat Pulai ... | 5,012 | 620,000 | 145 |

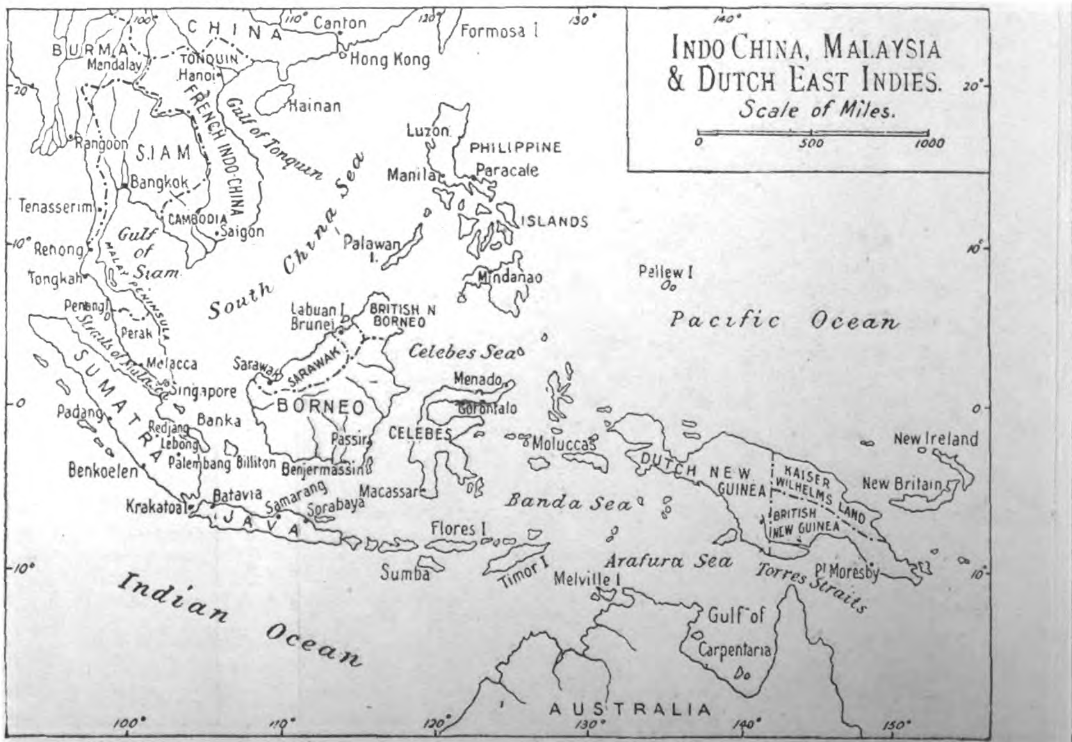
*Lode mine.

In lode mining there is little fresh to record. The Pahang Consolidated had a good year and are feeling the benefit of their additional plant, which included an air compressor and electrically driven pumps, Babcock & Wilcox's boilers, James' concentrating tables, and a Dorr Thickener. Among other lode mines the Ulu Bakau turned out 3,602 pikuls. The Menglembu was worked on a smaller scale for an output of 3,124 pikuls. The Sungei Gau treated 4,734 tons of stone, with a total recovery of 2,898 pikuls. Bibby's mine at Chin Chong, also in Pahang, obtained altogether 1,766 pikuls from 6,151 tons, but the grade fell off. As regards lode working in the hill country, increased experience of the irregularity of and variable value of the ground tends to show that the richness of some of the alluvial ground on the lower levels was due to natural concentration extending over long periods of time more than the derivation from a rich source.

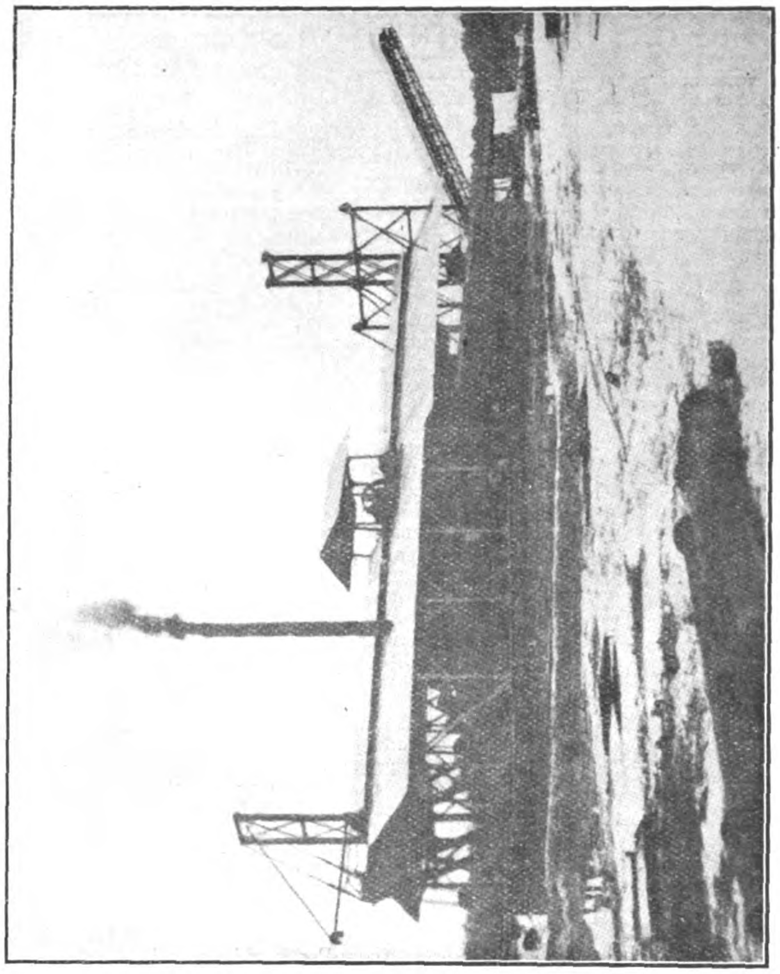
The wolfram output shows little change from recent years, the total being 3,940 pikuls last year, as against 3,897 pikuls in 1914 and 3,471 pikuls in 1913. The output of scheelite was higher at 961 pikuls, giving a total of 4,901 pikuls of tungsten ores, or 291 tons in all. These ores do not occur in defined deposits, but are found generally in small quantities irregularly mixed with the tin ore and gangue; the ore, too, is mainly low grade.

A recovery was shown last year in the gold output, the amount returned being 18,641 fine ozs. valued at £72,234, compared with 14,272 fine ozs. in the previous year. This increase was mainly due to the larger return from the Raub, where 16,103 ozs. were recovered from 172,295 tons of stone. The balance was small contributions from Perak and Negri Sembilam, probably alluvial.

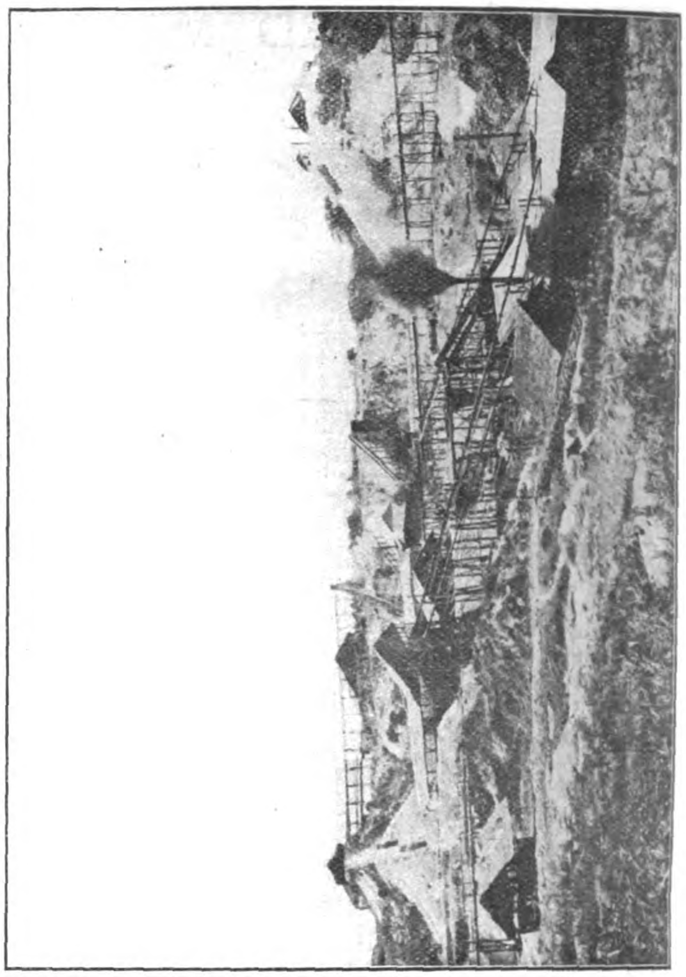
Progress with the Rawang Colliery has been much delayed by the war. Two incline shafts have been sunk about 800 ft., and the production was commenced in September, 11,523 tons being raised to the end of the year. At present there is no suction gas plant suitable for the local coal. Experiments are also being made with a view to ordering a briquetting plant, but so far two mines have adopted the use of the coal. The area of land under mining lease was 275,399 acres, about the same as the previous year.



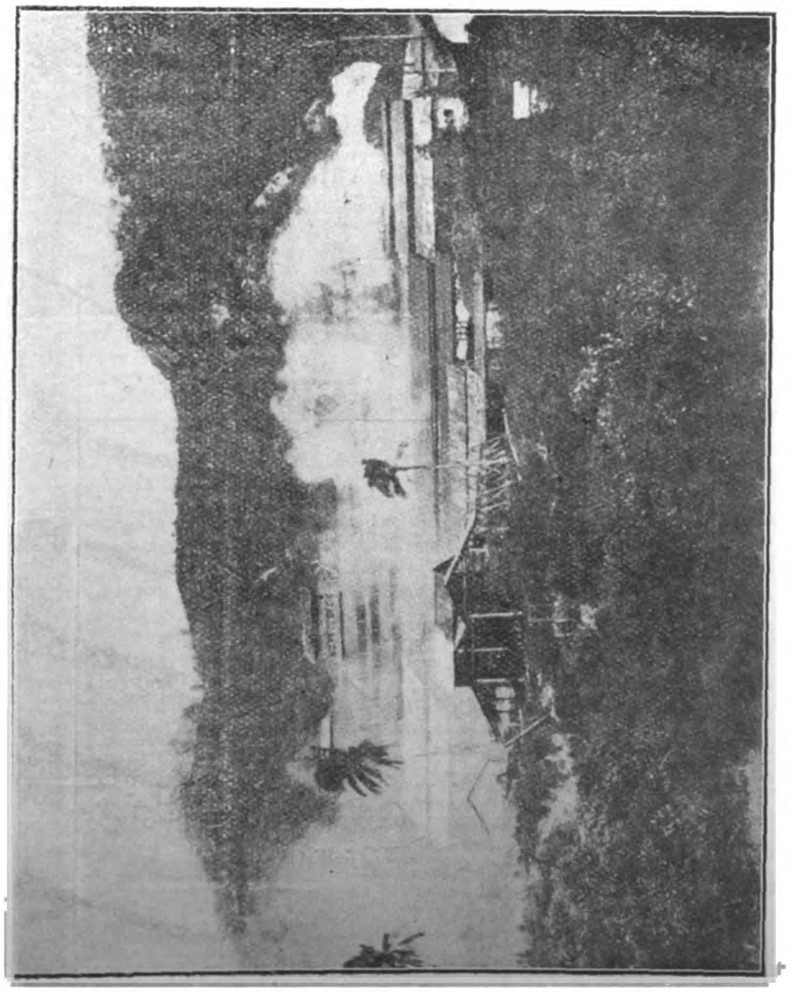

*Piculs of 133⅓ pounds; Straits Dollars of 57 cents gold.



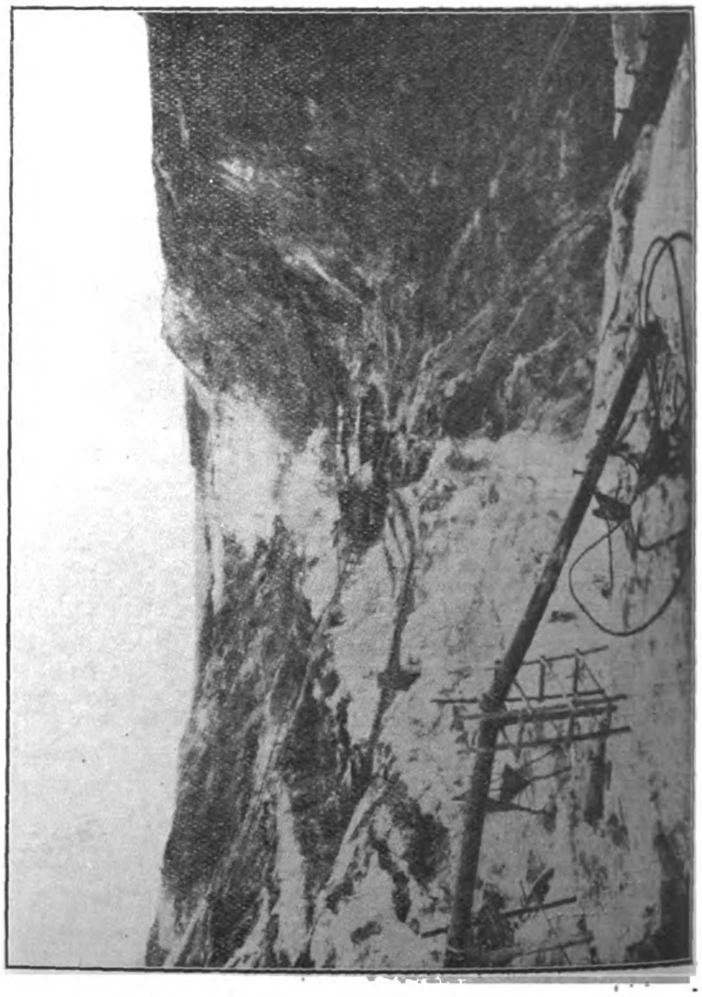
MALAYAN TIN DREDGING LTD.'S NO. 1 DREDGE



TAMBUN MINE



PAHANG CONSOLIDATED COMPANY'S MILL AT SUNGEI LEMING, PAHANG



TRONOH – MAIN OPEN-CAST LOOKING SOUTH

The experience of the working of 1915 confirms the conclusion often expressed in these columns that the industry is too mature to evince rapid fluctuation. A sustained fall in the price of tin will always bring about a diminution in the labour force and gradually a declining output, but the effect is not usually fully seen for one or two years. The high price which tin has reached recently does not appear to have existed long enough to stem the tide of emigration. If the present decline in price continues the probability of a shortage in the output again this year is definitely increased. As against this probability, however, must be set the undoubted fact that the closing of the markets of Central Europe and the inactivity of our own tinplate trade must certainly diminish consumption.

## RAWANG COALFIELD

The Rawang coalfield of the Malayan Collieries, Ltd., was recently inspected by members of the F. M. S. Chamber of Mines. The "drives" appear to run right through the heart of a huge seam of coal for there is coal on each side, coal overhead and coal underfoot. The main seam alone contains 10,000,000 tons of marketable coal. At Rawang the management have gone down 3,000 feet and found more coal than they can handle, their output being 400 tons a day.

From fire damp, the Rawang coal mine is quite free.

Rawang coal is of a pitch-black colour and breaks with a conchoidal fracture. Being fairly hard, it does not soil the fingers. It has a specific gravity of from 1.2 to 1.3 and is non-caking, while it burns with a long flame. The ash is white pulverulent and does not clinker.

Experiments show one ton of Rawang coal is equal to three tons of firewood, while one ton of Indian coal is equal to 1.06 ton of Rawang fuel. Against this slight difference, however, is one report that Rawang coal keeps up steam better and leaves no slag. There is also no heavy black smoke with Rawang coal, and, while it is slightly inferior to Japanese coal in other directions, it has a smaller ash and smaller sulphur percentage. Rawang coal freshly screened direct from the mine, and capable of being burned with close firebars despite its slightly lower evaporative powers, is said to have many advantages, quite apart from the question of price, over Japanese and Indian fuels. The demand for Rawang coal even now exceeds the supply.

The capital of the Malayan Collieries, Ltd. is $2,000,000, of which $1,500,000 has been issued and 1,433,250 paid up, while the Board of Directors comprise Messrs. J. A. Russell (Chairman), A. D. Allan, R. P. Brash, A. A. Henggeler, Loke Yew, C.M.G., and A. Grant Mackie, the Mine Manager being Mr. T. L. McCall. The Consulting Engineers are Messrs. Forster Brown & Rees, of London and Cardiff, and the London Agent is Mr. F. J. B. Dykes, late Warden of Mines, F.M.S

The mine is located at Batu Arang, in the mukim of Rawang, district of Ulu Selangor, Selangor, F.M.S. and the railway line to Batu Arang joins the main line of the F.M.S. Railways at Kuang Station. The area of the mine is 1,800 acres held under lease and 20,000 acres under prospecting licence, while the surface plant comprises a boiler house with two Babcock and Wilcox boilers with patent step-grate furnaces giving a heating surface of 2,531 square feet, to each boiler, and having an induced draught Sirocco fan, 40 inches in diameter, direct coupled to high speed steam engine, this fan being capable of giving two inches draught with three boilers under full power. The feed tank capacity is 30,000 gallons. The main engine house, comprising the haulage engine section, has two double-drum haulage engines, with loose drums, geared 3 to 1 for fast haulage and each engine has cylinders 12 in. diameter by 24 in. stroke while the electric generator section has two 100 kilowatt sets, 500 volts direct current, compound wound, interpole dynamos, by Mather and Platt, Limited, these being direct driven by high speed compound steam engines. The switchboard contains two generator panels, with overload and reverse current circuit breakers and equalising switches, and one feeder panel, with four distribution switches, while the motor-generator is 500 volts to 100 volts and is for electric lighting.

All cables carrying current to the mines, fan, and shops are special tropical twincore paper-insulated, lead-covered, laid in bitumen in stoneware troughing; but those carrying current in the mines are armoured, and suspended from the timbers.

The ventilating fan is 30 in. diameter and is of the "Turbon" mining type capable of passing 20,300 cubic feet of air at 4 in. water gauge.

The headstead or loading stage is a temporary structure of timber and the coal after being weighed is tipped on a screen which produces two sizes of coal while the mine has one-and-a-half miles of track connected with the F.M.S. Railways near Batu Arang Station. The sidings near the Heapstead have a grade of 1 in 90 to facilitate handling of waggons and a 60 ton weighbridge was installed by the F.M.S. Railways.

## THREE COAL SEAMS DISCOVERED

There are three seams so far discovered; the main-seam, middle-seam, and north-seam, the main seam being divided into upper and lower leaf.

Mining at present is confined to the main-seam and its approximate section is as follows:

| | | |
|---|---|---|
| Roof... ... | Shale. | |
| Coal ... | ...17 feet 6 inches. | Upper Leaf. |
| Clay ... | ... 1 foot to 2 feet. | |
| Coal ... | ...12 feet to 18 feet. | Lower Leaf. |
| Grit ... | ... 1 foot to 2½ feet. | Lower Leaf. |
| Coal ... | ... 4 feet to 6 feet. | Lower Leaf. |

Two haulage inclines, designated north and south mines respectively, follow the coal at a grade of 1 in 4¼ in the upper leaf of the main seam, and the system of working is pillar and stall, in panels.

In the south mine the present length of the incline is 900 feet, the vertical depth at face 260 feet, and the length of No. 1 level 1,100 feet, while in the north mine the present length of incline is 1,030 feet, and the vertical depth at face 262 feet. The present plant and mine capacity is 800/1000 tons daily, but as already said, the output at present is about 400 tons daily. The coal is at present marketed in three sizes, round, smalls and through coal, and a recent analysis made by Mr. Benedict Kitto, F.I.C., F.C.S., gave:—

| | | |
|---|---|---|
| Moisture... ... ... ... | 14.00 | per cent. |
| Ash ... ... ... ... ... | 2.70 | " |
| Fixed Carbon ... ... | 43.00 | " |
| Volatile Matter ... ... | 40.30 | " |
| | 100.00 | |
| Contains Sulphur... ... | 0.31 | per cent. |
| Calories ... ... ... ... | 6.160 | " |
| B.T.U. ... ... ... ... | 11.088 | " |
| Evaporative value ... | 11.4 | lb. |

## MIJNBOUW MAATSCHAPPIJ REDJANG-LEBONG

This silver-gold producing company's property is in Sumatra, Dutch East Indies, a few hours from Singapore. The report of the general manager, F. C. Frey, is for the year 1915.

Development amounted to 1675 metres (5580 ft.) The ore-body was cut on No. 7 level of the middle shaft during May, but water makes further work slow. Possibilities of opening ore at depth are sufficiently encouraging to warrant sinking the shaft to No. 10 level; but with the electric power available this cannot be done yet. Drought interfered with operations last year. Two new power schemes have been investigated. Mine ventilation was improved. Old stopes were filled with 48,630 tons of waste. Ore reserves are estimated at 220,000 tons, assaying $8 gold and 2 oz. 8 dwt. silver per ton. During the year 13,094 tons of $9.50 gold and 2 oz. 17 dwt. silver ore was recovered from old stopes. This was formerly regarded as unprofitable. The value of the ore gets less with depth.

There were 70 stamps operated 293 days, and 6 tube-mills 248 days, crushing 83,329 tons of ore. This averaged $8.78 gold and 2 oz. 15 dwt. silver per ton. There was no amalgamation done. Pulp was classified into 67.5% for slime and 32.5% for sand treatment. The slime plant gave 94.83% gold and 84.59% silver recovery, and the sand plant 86.99% gold and 75.64% silver. Cyanide percolates with ease through sand averaging 80% passing 200-mesh. The total extraction of value was 90.69%. Metal recovery was 34,204 of gold and 186,678 oz. of silver, worth 1,951,500 florins (1 florin=40 cents). The cost was $6 per ton. Dividends absorbed 431,250 florins or $172,500. Employment was given to 45 Europeans and 1747 colored people. Among the experiments done during the year were included how to economize in cyanide and zinc, also the local treatment of slag.

## TIN MINING IN SIAM

H.M. Minister at Bangkok has forwarded the following particulars, furnished by the Acting British Vice-Consul at Puket (Mr. G. A. Vesey Fitzgerald) after a tour undertaken by him in the Takuapa and Pangnga districts of Southern Siam in February last:—

At present operations in Takuapa are in the hands of the Chinese. The output from the district has for the last few years slightly exceeded 500 tons annually, but it has declined since the commencement of the war owing to the low price the metal has at times commanded. During the year ended March 31, 1915, 497 tons of metallic tin were recovered, while the amount for the succeeding nine months was 252 tons.

Some years ago a Danish company obtained a concession at Pong, some 500 acres in extent, for mining purposes. A subsidiary company was formed in London to work this area and others at Huey Yawt in Monthon Puket and at Nong Pet near Ronphibun in the adjoining Monthon of Nakon Sritamarat. The company expected its bucket dredge to arrive at the end of April, 1916, but owing to difficulties of transport between Takuapa and Pong it will not be possible to commence mining operations before April, 1917. The ground is said to average 1 lb. of tin oxide to the cubic yard.

Pangnga, like Takuapa, is mainly devoted to the production of tin, of which over 800 tons have been recovered during each of the last two years. For the nine months ended Dec. 31 last over 950 tons of metallic tin were produced, a considerable increase thus being shown.

Taimuang, some 40 miles from the town of Pangnga, is peopled almost entirely by Chinese, who are engaged in mining operations. The output of tin from the Muang of Pangnga is likely to increase in the future, whilst that from Taimuang is expected to remain stationary for the next three years, after which a rapid decline is anticipated. Considerable attention is now being given to the development of the tin-mining industry at Tung Maprow, which is also comprised in the Muang of Pangnga.

# FOREIGN TRADE OF CHINA FOR 1915

[By F. E. Taylor, Statistical Secretary Chinese Maritime Customs]

The interference with commerce of the European war was very marked during 1915, principally owing to the scarcity of tonnage and to the rise in freights. But for this drawback it is quite plain that the year would have been one of very brisk trade, notwithstanding the unrest caused by the Japanese demands early in the year and the fears of possible disturbances when the announcement was made that a change in the form of Government was contemplated. The indignation aroused by the demands led to a campaign against Japanese goods that lasted for four months in some provinces, in spite of the steps taken by the Chinese Government to stop it, and must have resulted in serious loss to Japan, as the people not only refused to purchase Japanese goods, but shippers refrained at some ports from sending cargo by Japanese vessels. By the end of September the agitation had died out, but in the meanwhile Chinese manufacturers of certain goods similar to those imported from Japan, such as candles, soap, cigarettes, matches, towels, cotton underclothing, cotton cloth, boots and shoes, mirrors, sugar, and umbrellas, took advantage of the situation to push the sale of their goods.

The Chinese dealers did very well in tea, silk, antimony, and in aniline dyes which rose enormously in value and were resold at immense profit. The scarcity of chemical dyes and of synthetic indigo led to a revival of the cultivation of natural indigo, an interesting example of the rapidity with which Chinese farmers meet the demands of the market.

One of the features of the trade of the year has been the increased production and ready sale of cotton yarn and cotton piece goods manufactured in China. There are now over 30 cotton mills working, with 1,029,218 spindles and 4,610 looms, and further extensions are projected. The capacity is estimated at 800,000 bales of yarn and 1,383,000 pieces of 40 yards. The Ministry of Commerce reports that there are in Honan and Shantung 16,400,000 *mou* under cotton, in Szechwan, Kwangtung, Kwangsi, Hupeh, and Chekiang 11,100,000 *mou* making a total of 27,500,000 *mou*, with an estimated crop of 1,630,500 piculs of clean cotton.

The Japanese mills are said to have working 2,414,544 spindles and 24,223 looms. From which it will be seen that while the Japanese have one loom to 99 spindles, the Chinese have one to 223 spindles. The increase in the demand for Chinese machine-woven cloth seems certain to lead to the installation of more looms, and there is little doubt that the cotton spinning and weaving industry will show rapid and extensive development in certain lines.

The impossibility of obtaining money for railway building naturally resulted in an almost complete cessation of work. The influence of railways in extending trade was pointed out in the Report written last year, and it is greatly to be regretted that the difficulties should have arisen just when the importance of improving means of communication had been so clearly recognised that great extensions had been decided upon, and when so much was being done to carry out quite an imposing programme of construction. In the absence of funds to build railways, much might be done in the way of providing roads suitable for motor traffic, the value of which has been startlingly proved during the war. Such roads will, in any case, be needed to feed the railways when built, and meanwhile they would be of inestimable value in facilitating trade and in bringing all parts of the country into closer relations.

## Lunkow Opened to Trade

Lungkow in the province of Shantung, was formally opened to foreign trade on the 1st November. It lies about 70 miles to the west of Chefoo, on the Gulf of Pechili, latitude 37°40′ N. and longitude 120°20′ E. The moneys in circulation consist of Mexican, Peiyang, and the new Republican dollars, marks, roubles, yen, and a variety of subsidiary coins. The Bank of China and the Bank of Communications have opened branch offices and issued banknotes. There is, in addition, a Japanese bank called the "Lungkow Bank," which has also issued notes. During the two months the importations were sufficient to show that foreign goods, especially Japanese cotton goods, are in demand, but no exports had yet appeared likely to find a market abroad.

Details concerning the course of trade during the year have been derived from the quarterly memoranda on trade sent to this Department from the ports, and it will be seen that most of the factors exercising marked influence on the trade were subsidiary to the disturbance caused by war. In addition to the dearth of tonnage and high freights, which were felt at all ports, the Manchurian ports were also affected by a fall in the rouble exchange, the large withdrawal of troops from the Amur province, the scarcity of railway stock, which was chiefly engaged by military traffic, and by the prohibition by the Russian Government in June to export many kinds of foodstuffs, as well as salt, tobacco, hay, straw, leather, hides, and copper.

The winter was one of unusual severity and heavy snowfalls, which interfered with traffic, while an exceptionally wet spring and a violent gale in September ruined the cart roads and damaged the crops. Imports were checked by the low value of the rouble but there was a noticeable increase in American and European medicines from Japan destined for Russia. The prices of many medicines rose enormously, some as much as 500 per cent., and metals were very much dearer. Zinc was three times as dear, galvanized iron sheets doubled in price, while galvanized iron wire rose 50 per cent.; iron plates and sheets, 40 per cent.; iron wire nails, 30 per cent.; copper, 40 per cent., and brass, 60 per cent. Japanese cotton goods lost in value owing to a decreased demand for a time, and were to a great extent replaced by similar goods manufactured in China, while Japanese medicines, so ably and energetically pushed by thousands of travelling Japanese pedlars throughout Manchuria, were not favoured by the Chinese. Notwithstanding the supply of natural indigo, the demand for artificial indigo was so great that a rise to three times the normal price did not check importation.

Belgian window glass was largely replaced by American and Japanese substitutes, and English galvanized iron by American. Flour milled in Shanghai and Hankow very largely replaced American flour, which formerly almost monopolised the Manchurian markets, as the Manchurian-milled flour, which is considered better, was not available in any quantity. Russian piece goods of certain classes were reported to be rapidly gaining favour in the districts served by Newchwang. Chinese matches, owing to the unpopularity of Japanese goods which gave them an opening, appear to be now ousting Japan matches. Kerosene oil from the Yechigo district in Japan has made its appearance in the Manchurian markets, and is likely to enter into severe competition with the other kinds.

As regards exports, there was a good demand for beans, beancake, bean oil, wheat, and barley, but the fall in the rouble exchange and poor crops made the price of wheat almost prohibitive and checked the outflow to the Russian mills at Habarovsk and Blagovestchensk. The effects of the 1914 floods were still felt, and the constant high water interfered with the crops, while there was an outbreak of rinderpest, which led the Japanese authorities to prohibit the crossing of the Tumen River by Korean ox-carts during the continuance of the outbreak. The demand for silk cleared off the accumulated stocks, and trade in this staple was brisk throughout the year, showing a marked improvement over 1914. The timber trade was greatly assisted by the high freights prevailing, which operated against Japanese and American importations, and the general tendency of sellers was to hold out for better prices.

The crop of beans is reported to have been less by 20 per cent. than that of 1914, and export was very seriously impeded by lack of tonnage and high freights. Japan bought large quantities of beancake to be used as a fertiliser to remedy a scarcity of sulphate of ammonia and other chemical manures wanted for the rice fields. Bean oil was wanted by America in consequence of a sudden rise in the price of cotton seed there, and there was also a good demand from Europe and Japan, but great difficulty was experienced in getting away the increased production.

## Steamers on the Amur

A daily service of two small steamers along the Chinese bank of the Amur, from Taheiho to Nikanka (below Aigun), interfered considerably with the junk trade. Immigration is increasing and more land is constantly being brought under cultivation. The Russian Government not only stopped many exports into Chinese territory, but also commenced the levy of import duties on goods formerly imported free from China. In November the British Government, in view of the fact that, while the export of beans and bean oil from Vladivostock to neutral countries had been forbidden, no such restrictions were imposed on similar goods exported from Dairen, proposed that, pending the conclusion of satisfactory arrangements to prevent such goods from reaching enemy countries, the Japanese Government should prohibit the export of beans and bean oil from Dairen to neutral countries unless they first touched at an English port. There were various objections to this proposal and it appears to have fallen through but the prohibition by the British Government of the re-export of cereals, etc., from England overstocked the market there and acted as a check on exportations from Manchuria.

The Dairen Commissioner reports that the first pig iron was turned out by the Penkifu Colliery and Iron Mining Company on the 9th January. The annual output is estimated at 30,000 tons, valued at 1 million gold yen, and will be shipped to Japan from Dairen in the winter and from Newchwang at other seasons. The South Manchuria Railway Company made a call on the shareholders of 4 millions of yen, to capitalise various new enterprises. The passing by the Japanese Imperial Diet of a bill for the establishment of a special bank to finance Japanese enterprises in Manchuria and Mongolia was warmly welcomed in commercial circles. The Dairen Savings Bank increased its capital and was reorganised as an ordinary bank, and there is a general tendency to expansion in all banking activities. One of the pits at the Fushun coal mines was destroyed by fire.

The South Manchuria Railway experimental mill for extracting oil from beans by a chemical process has been sold to Suzuki & Co., of Kobe. The process has proved to give profitable results, and the new owners contemplate the enlargement of the mill and doubling the output. It is quite evident that the trade of Manchuria will, when normal conditions prevail, show a large and constant increase

and the probabilities are that the increase will be very rapid.

Considerable interest was aroused by the announcement of the Haiho Conservancy Board that it was intended to keep the Peiho River open to navigation during the winter by means of ice-breakers, and the efforts made were completely successful until the middle of January, when the abnormally low temperature blocked the entrance and thick ice was encountered 60 miles outside the bar. Unfortunately, the shipping companies did not anticipate such a measure of success as was secured, and the number of steamers sent up was quite insufficient to cope with the amount of cargo offering. Given a moderate winter of normal conditions, the Board is confident that it will be entirely successful in future. When the season opened there was a strong demand for foreign goods, and higher freights and prices did not much affect arrivals except in the case of cotton piece goods. As the year went on prices continued to rise from the causes already sufficiently indicated; many kinds of piece goods could not be supplied at all for want of the requisite dyes, Chinese dealers were slow to realise that as long as the war continues there can be no hope of more favourable conditions, and importers found it impossible to obtain firm prices for forward delivery or to guarantee any specified time of arrival.

Work on the breakwater at Chefoo* commenced on the 2nd August. It is worth noting that cargo such as silk and straw braid formerly sent to Kiaochow for shipment was diverted to Chefoo, but this is hardly likely to continue now that the Chinese Maritime Customs are again established and the port is once more subject to regulations with which shippers are familiar. At Kiaochow the currency is Japanese silver yen, but coins are rarely seen in actual circulation, Japanese war notes and Yokohama Specie Bank notes being legal tender to unlimited amounts. Business is at present almost monopolised by Japanese, since the uncertainty about the future status of the port prevents Chinese and European capitalists from undertaking business on any large scale.

### Trade on the Yangtze

On the Yangtze the year opened with dull trade, but there was on the whole progressive improvement, chiefly due to good crops. The campaign against Japanese shipping and goods was for a time felt rather severely at some of the river ports, but at Hankow the authority of the Government rendered it practically abortive. Had it not been for the shortage in tonnage which hampered imports by the extra cost and made it difficult to send away exports, it is evident that the year would have been one of exceptional prosperity, especially as, with the exception of Szechwan, all the districts served by the river ports were free from serious disturbance or brigandage. Extraordinary profits were made by dealers in tea and other produce, and the rice crop was plentiful, while beans and beancake, groundnuts and seeds of all kinds, as well as oils, were in demand.

In Szechwan brigandage was unfortunately still rife and restricted the movements of cargo and silver, a condition that lasted throughout the year; and drought so seriously injured the rice crop that the price was more than doubled. From the 1st June the Salt authorities ceased to accept the depreciated military dollar notes in payment of dues, which led to a further depreciation in the exchange value of the notes, and on the 1st September the Government commenced to redeem Szechwan military notes of 5 dollars denomination at a discount of 50 per cent., the 1-dollar notes to be redeemable at the same discount from the 1st November.

The preliminary surveys of the Ichang-Kweichowfu section of the Ichang-Chengtu Railway were completed, but construction work awaits the provision of the necessary funds. The steam traffic between Ichang and Chungking has proved so profitable that more vessels will be added to the run. The demand for antimony sent the price up rapidly. Before the war antimony regulus paid an *ad valorem* export duty on a conventional value of Hk. Tls. 80 per ton, whereas it paid during the December quarter at Changsha on a value between Hk. Tls. 800 and 900 per ton. The export of quicksilver, required for making fulminates, was greatly stimulated. There was a brisk demand from London for sesamum seed up to the 10th March, but the prohibition against all re-export of seeds, followed by an advance in freight of 75 per cent., completely stopped all business and stock accumulated until in the autumn improved shipping facilities to Genoa cleared off the stocks, which holders were anxious to get rid of and parted with at cheaper prices than prevailed in the spring.

Imports showed the same symptoms as were mentioned above regarding trade in the North; that is to say, during the campaign against Japanese goods there was a temporarily increased demand for British and American piece goods, while Chinese manufactures made considerable headway. In the South the piece goods trade was, as elsewhere, hampered by delayed deliveries and by the difficulty of obtaining colours to suit the market, while the shortage of dyes hindered the clearance of white and grey shirtings. There was an active demand for fancy goods at enhanced prices, but woolen goods were too dear and were also difficult to obtain from Europe, so that old stocks were gradually cleared off. Metals, also, went up very much in price. Flour was in short supply, and American prices were up in consequence of high freights. No flour came from Australia, and Chinese-milled flour found a ready sale. In cotton yarn Japanese 20's seem to have driven out the Bombay count. The campaign against Japanese goods seems to have been more effective in the South than in North and Central China, but it did not last long.

Piracy on the Canton River was not quite so frequent, owing to the policy of establishing patrols and garrisoning dangerous localities, but the North River was still so unsafe for native craft that most of the freight has been diverted to the railway. Junks only travel in fleets, and engage "soldiers," who are supplied by agents guaranteeing a safe passage. The junks pay, it is said, a fee of 5 per cent. of the value of their cargo, and the agents pay the pirates to leave them alone, both agents and "soldiers" being part of the pirate organisation.

The disastrous floods in July, the worst ever recorded in the West River basin, destroyed the whole of the first rice crop and in some districts reduced the amount of the second crop, and also caused great loss of life. All the dikes along the West River and most of those bordering the North River were broken, and it is estimated that it will cost 7 millions of dollars to repair them. The bursting of a dike on the North River about 23 miles above Canton caused the destruction of 2,000 houses in the city of Canton, and another 400 houses were destroyed by a conflagration said to have been started by incendiaries. The silk districts suffered enormous damage and the production was greatly lowered. A few direct shipments of hides from Wuchow to London were so successful that this trade seems likely to develop. Although the principal market for cassia—Germany—was closed, there was an increased demand from Great Britain and America.

Antimony, which is found all along the upper part of the West River, was called for in very large quantities, and steps were taken to encourage the establishment of smelting works. The frontier ports in Yunnan also report the export of antimony. From Kiungchow there was a small export of rubber, grown in the island, and coffee is being experimented with. Some 3,900 tons of manganese ore were exported from Pakhoi to Japan, and the deposits are said to be extensive but rather reduced in value by the presence of phosphorus.

The heavy rainfalls that caused the floods in Kwangtung province were also responsible for serious damage to the Amichow-Yunnanfu line by causing immense landslips. In the narrowest part of the Namti Valley a whole mountain side of 10,000 cubic tons rushed into the river, and the total damage was so great that traffic was for a time completely suspended. The whole Tonkin delta was inundated, and Hanoi was threatened, so that at one time all communication with Tonkin was stopped. Trade naturally suffered from these conditions.

The total collection during 1915 was Hk. Tls. 36,747,706, a decrease of Hk. Tls. 2,169,818 as compared with 1914, but better than any year previous to 1912. Of the decrease, Hk. Tls. 926,694 was due to reduced receipts from opium duty and likin, and Hk. Tls. 296,900 to a loss in tonnage dues, leaving only Hk. Tls. 946,134 as the fall in the amount of dues and duties collected from general merchandise. Import duties were lower by Hk. Tls. 3,571,825 and transit dues by Hk. Tls. 32,303; but export duties increased by Hk. Tls. 2,395,990 and coast trade duties by Hk. Tls. 262,004. From these figures it is clear that, while the Chinese bought fewer foreign goods on account of their dearness and the difficulty of procuring them, the trade in Chinese produce was better than ever, as is proved by the fact that the export duties of Hk. Tls. 15,439,709 were the highest on record.

The value of the direct foreign trade was Hk. Tls. 873,336,883, a falling off of Hk. Tls. 52,131,128 as compared with the value in 1914, but was still higher than in any year previous to 1913. The value of the direct foreign imports was less by Hk. Tls. 114,765,663, but exports increased by Hk. Tls. 62,634,535, and the value of Hk. Tls. 418,861,164 was higher than any previous record. The statistics from Kiaochow cover only four months, from the 1st September, when the control of the Custom House was restored to the Inspectorate General of Customs, and it is possible that about 14 millions of taels should be deducted from the recorded loss of trade.

### Opium Stocks Decrease

The net quantity of opium imported, that is, released from bond for consumption after payment of duty and likin, was 4,447 piculs, as against 7,484 piculs in 1914. At the end of 1914 there were 5,381 chests and 23 half-chests in bond in China, 1,917 chests in Hongkong, and 18 chests afloat between Hongkong and Shanghai, and 1915 closed with 2,488 chests and 12 half-chests in bond in China (all in Shanghai) and 973 chests and 1 half-chest in Hongkong. The price at the commencement of the year was approximately *Shanghai* Tls. 7,000 to 7,400, which by the 31st December had risen to Tls. 8,700 to 9,000. During the year the provinces of Kansu and the New Dominion (Sinkiang) were added to the provinces into which, as being free from poppy cultivation the importation of foreign and Chinese opium is forbidden under the Anglo-Chinese Agreement of 1911.

Two events of interest in connexion with the opium trade took place during the year. The first was that opium merchants agreed to pay to the Chinese Government a voluntary contribution of $5,500 per chest on a stock of 6,000 chests. The second was the sale by the opium merchants to the Kwangtung authorities of 1,200 chests at the rate of *Shanghai* Tls. 7,100 per chest: delivery to take place by monthly instalments during a period not exceeding 18 months. On the 1st November the Kwangtung authorities established an official department, known as the Government Prepared Opium Examination Department with sub-offices in every district, where opium was sold at the rate of $15 per tael weight. The merchants having resigned their right to ship any further stocks to Kwangtung, this department practically constituted a monopoly, but

* A full account of the progress on the Chefoo Breakwater appeared in THE FAR EASTERN REVIEW for April, 1916.

the price charged was too high to attract the general public, who found it more economical to procure supplies through less legitimate channels.

As was to be expected, the prohibition of import and the difficulty of obtaining the drug led to smuggling on an extensive scale. Large seizures have been made in Hongkong and Shanghai on British vessels, but the immense rise of the price in China yields profits that more than cover the loss of a good proportion of the consignments. The result has been that regular traders have found some difficulty in disposing of the stocks remaining on their hands. Another and more serious result of the prohibition of opium has been the spreading of the morphia habit, which has led to the development of one of the most profitable trades in the country.

The importation into China of morphia and instruments for its injection is absolutely prohibited, except by foreign medical practitioners and foreign druggists for medicinal purposes and under special rules, but the drug is so easily smuggled that the prohibition is practically a dead letter. Morphia is manufactured chiefly in Great Britain, Germany, and Austria, and is sent to Japan by registered post *via* Siberia. It is released by the Post Office in Japan after payment of import duty, which is refunded on re-export to Korea or Dairen, and now presumably to Kiaochow. No refund of duty can be claimed on re-export to China, because the importation into China is forbidden.

Large quantities of morphia are introduced into Manchuria, where the evil habit is spreading rapidly, and Shantung is now in a favourable position to obtain the drug; while the commencement of morphia manufacture in Formosa leads to the expectation that the province of Fukien will not be neglected. In Harbin the Russian authorities take rigorous steps to prevent the sale of the drug, any Russian subject found in possession of the poison being sent to prison, while Chinese offenders are handed over to the Chinese authorities. But the Russian police cannot arrest Japanese without the consent of the Japanese Consul. In the Japanese Railway Settlement of Changchun the traffic goes on quite openly.

The Japanese dealers employ Chinese agents, who carry a quantity of filled syringes and give injections in quiet corners and back streets for 3 or 4 cents. In this way the deplorable morphia habit is being rapidly spread, and its effects are much worse and much more quickly apparent than those caused by opium smoking, as the victim soon becomes incapable of work of any kind. It has been estimated that the annual profits of this disastrous traffic do not fall far short of £1,000,000.

## Cotton Goods Imports

The value of cotton goods imported fell from Hk. Tls. 183,328,473 in 1914 to Hk. Tls. 149,300,513 but this comparison gives quite an imperfect impression of what the actual diminution in trade amounted to and of the embarrassments with which importers had to contend, since higher prices hide the comparatively greater falling off in quantities. White being the symbol of mourning in China, all white clothes for external wear must be dyed, and dyes were either entirely wanting or only to be had at almost prohibitive prices. Rising freights and the impossibility of fixing forward prices or time of delivery added to the difficulty of doing business, and the result is shown very plainly in the statistics of imports. Plain grey shirtings fell from 3,675,241 to 3,282,510 pieces; plain grey sheetings, from 5,766,232 to 3,046,372 pieces; white shirtings, from 4,498,304 to 3,232,273 pieces; drills, from 2,384,015 to 1,717,704 pieces; jeans, from 1,988,267 to 1,813,058 pieces. High freights from America and Europe assisted the Japanese trade, and we find a marked increase in Japanese shirtings, jeans, T-cloths, cotton flannel, cotton cloth, and handkerchiefs, the increase in jeans amounting to 500,000 pieces. While white goods were hampered by the lack of dyes in China, coloured goods were handicapped by the difficulty of procuring shades wanted by the market, and the same decrease in arrivals is found throughout the list, with the exception of the Japanese goods mentioned.

It may be interesting to show the way in which the dearth of dyes has reacted upon the piece goods trade. Before the invention of synthetic indigo the Chinese used vegetable indigo for dyeing white cloth; but the results obtained were not so satisfactory as those derived from the use of the chemical product, as colour and quality were variable and cloth required to be dipped at least twice before anything approaching a uniform tint was secured. The synthetic indigo, proving not only more efficient but cheaper in use, gradually drove indigo out of cultivation, and although a certain quantity was grown last summer to meet the insistent demand, the supply was far from sufficient and the price was high. There were some stocks of aniline dyes in the country when war broke out, and the lucky holders have made handsome fortunes. The following is an approximately correct statement of the difference in the cost of dyeing per piece of 20 yards before the war and at the present time:—

| | Before the War. | At Present. |
|---|---|---|
| | $ | $ |
| White Shirtings: blue... | 0.25 | 2.70 |
| ,, ,, pink and scarlet ............... | 0.10 | 1.50 |
| Grey shirtings: blue...... | 0.25 | 3.00 |
| Grey sheetings: blue...... | 0.50 | 4.00 |
| ,, ,, black ... | 1.00 | 3.00 |

It is said that the cost of dyeing cotton cloth woven in the country from imported cotton yarn is equal to the cost of yarn and of the labour employed in weaving. Woollen and cotton mixtures and woollen goods, as also miscellaneous piece goods, show still more serious decreases, and metals were almost worse. Among sundries we notice the disappearance of aniline dyes and artificial indigo, and a falling away in needles from 2,566,599 to 399,457 mille. The Chinese shops are now charging 10 cents for two needles. Sugar was very dear and the consumption was checked, the total importation of all kinds falling from 6,266,002 to 4,776,581 piculs. American kerosene oil, owing to dearness caused by high freights and lack of tonnage, fell from 162 to 129 millions of gallons, and Russian from 7,200,700 to 857,155 gallons. Sumatra oil lost 7 millions of gallons, but Borneo oil improved by a million. Japanese kerosene oil rose from 514,470 gallons in 1914 to 1,226,263 gallons. This oil is said to be of inferior quality, but it is cheap, and as the sale will be vigorously pushed, the importation is likely to increase rapidly. The growing industry of match-making is responsible for a smaller importation of matches by 3 million gross. The import of timber, owing to high freights from America, fell off considerably, softwood falling from 204,075,845 to 88,372,228 square feet. Speaking generally, the import trade in all classes of goods suffered heavy diminution, not because the demand was wanting, but because the war sent up prices and reduced the amount of tonnage available for cargo.

## Exports Make New Record

As said above, the value of the exports was the highest ever recorded, and it would have been higher but for the shortness of cargo space and greatly increased rates of freight. Chinese cotton goods showed a remarkable advance, and metals were in great demand. Antimony rose from 327,727 to 380,200 piculs; copper ingots and slabs, from 1,829 to 45,084 piculs; pig iron, from 991,266 to 1,596,180 piculs; tin, from 119,225 to 132,379 piculs; zinc, from 5,123 to 38,490 piculs; and unclassed metals, from 32,634 to 148,090 piculs. Beans of all kinds were taken freely, as were other foodstuffs. Fibres did well. Liquid indigo rose from 13,830 to 53,660 piculs. Bean oil advanced from 607,477 to 1,017,922 piculs, and peas from 277,350 to 403,469 piculs. Cotton seed, rape seed, and sesamum seed were shipped in greatly increased quantities. There was a brisk demand for tanned and untanned goat skins, and for other skins and furs.

As regards silk, wild silk found a ready sale and all stocks remaining over from the previous year were rapidly cleared off owing to demands from Japan and elsewhere. The crop in Manchuria was rather seriously affected by the heavy rains, which made the cocoons lighter and dearer, and the production was less, but the year was profitable as the market was strong and good prices were realised. The total export amounted to 34,004 piculs, as against 21,072 piculs in 1914. There was a distinct revival in the demand for white and yellow raw silk, the exports being 100,003 piculs, as against 87,517 in the previous year. This result is the more satisfactory as from all the producing districts reports came of short crops of cocoons. In the Canton districts floods caused immense damage, and the price of silk was forced up to $900 per picul. While the war caused a diminution of consumption in Europe, and brought about a scarcity of skilled workmen and also of dyes, which prevented orders for silk piece goods from being filled, the entry of Turkey into the war cut off supplies from the Levant and Central Asia, and the participation of Italy also checked business. Demand from America was strong, and it was only due to unfortunate climatic conditions that the export was not greater. All the Chinese merchants connected with the trade did extremely well.

The tea market opened in Hankow on the 15th May, a week later than in 1914, and the season proved the most profitable one in the history of the port. Buyers were anxious to secure as much as possible, and quantity was more considered than quality. The commonest teas that brought from Tls. 12 to 17 in 1914 were eagerly taken at Tls. 32, and the largest profits were made in the lower grades, the best qualities yielding more modest gains. It is said that the Chinese dealers made 100 per cent. on their purchases of the first crop, and the second crop also fetched handsome prices. Quality was above the average. The same remarks apply to the Kiukiang and Foochow markets. In July the adverse effects of the low rouble exchange began to be felt, and there was a cessation of buying for Russia, which reduced prices considerably, until in November a renewed demand for the balance remaining in stock somewhat raised them again. The total exports from China were: black tea, 771,141 piculs, as against 613,2[illegible] piculs in 1914; green tea, 306,324 piculs, as against 266,738 piculs; brick tea, both black and green, and tablet tea also showed satisfactory advances. The Chinese dealers are very hopeful about the prospects of the trade for 1916, but if they would insist on an improvement in cultivation and manufacture they would find it yield more profitable results than even the cessation of the war, upon which they base their hopes. As a matter of fact, the size of the stocks in London, and a lowered consumption, together with the great rise in the silver exchange and in freights, make it very improbable that the 1916 season will be as prosperous for them as its predecessor, and they are likely to be rudely disappointed in their expectations of equally good prices and to find, on the contrary, that their profits will be on a much more moderate scale.

## Shipping Shows Decrease

The tonnage of steamers entered and cleared amounted to 84,641,227 tons, being 6,485,[illegible] tons less than in 1914. Sailing vessels showed a total of 6,021,778 tons and a loss of 83[illegible] tons. These figures include the tonnage of Chinese shipping, which amounted to 18,055,[illegible] tons for steamers and for sailing vessels of foreign type and 5,503,598 tons for junks. Throughout the year there was more cargo offering for foreign ports than could be accommodated by the available tonnage, although a certain number of Japanese, Norwegian, and Chinese steamers were diverted from the coasting trade to the more profitable employment. The Indo-China Steam Navigation Company removed a few of their regular coasting steamers to southern trades, but the

China Navigation Company and the China Merchants' Company ran their steamers mostly on the usual routes, while the China Navigation Company employed several additional vessels on the coasting trade. All steamers on the coast and on inland waters were kept very busy, and rates of freight advanced. The demand for tonnage for Europe, America, and Australia was much in excess of the supply, and the export trade was, in consequence, considerably curtailed. There was a diminution in American tonnage of about 200,000 tons, in British of about 1,500,000 tons, in Danish of 24,000 tons, in French of 337,000 tons, in Japanese of 120,000 tons, in Russian of 32,000 tons, in Portuguese of 150,000 tons; while the Austrian flag disappeared and German tonnage fell from 4,026,493 to 58,203 tons, represented by small steamers plying on inland waters. The Dutch flag improved by 100,000 tons and the Swedish by 29,000 tons. Norwegian and Chinese remained about the same, except that there was a falling off in the junk trade.

Exchange ruled low at the commencement of the year, opening in Shanghai at 2s. 2¾d. for the tael. It gradually rose to 2s. 4d. until July, when a drop of one penny took place until the middle of August, when it stood at 2s. 3d. From that date it rose steadily, with a sudden jump of threepence in the last half of November, and the year ended with the tael at 2s. 7¾d., a rise of nearly 20 per cent. during the year. It will be noticed in the table of treasure imported from and exported to foreign countries that the export of treasure was greatly in excess of the import, which was hardly to be expected in view of the fact that the value of the export trade was the highest on record. This may be partly explained by the fact that in the early part of the year, when trade was still dull, treasure was going away in consequence of the falling off of the exports in 1914. But towards the end of the year conditions had changed and, in spite of the higher exchange, exports were so brisk that money was required to pay for them. There was in consequence a great diminution in the stocks held by the banks, which on the 31st December had fallen to Tls. 30,439,000 and $17,500,000 in Shanghai, as the money had been drawn out to go up country to pay for produce. The plausibility of this solution is supported by the fact that gold has been returning since the close of the year, and at the time of writing is still coming in. As regards gold, which in China is not used for currency and is bought and sold like any other commodity, there was a profit to be made by selling owing to the demand caused by the war, and Chinese speculators bought largely. It is said that there was a considerable exportation both from China and Japan to supply a shortage in America. Russia took Hk. Tls. 8,388,224 in silver for coining purposes. Half the movement of treasure was between Hongkong and Chinese ports, and treasure held in Hongkong may be regarded as remaining in China. The copper coins mentioned in the table as exported were Japanese copper cash, sent back from Hankow.

About 15 years ago a training college was established in Shanghai by the Japanese, known as the Tungya T'ungwen Shu-yuan, which was assisted by Government funds. The students, of whom there are at present about 300, are specially trained for work in China. The college course lasts for three years, and 900 students have already passed through and are now at work in different parts of China, pushing their country's commercial interests. A large site has been secured at Siccawei, and new and suitable premises are to be erected shortly. In 1908 the value of Japan's direct trade with China was Hk. Tls. 89,620,908, and in 1915 it amounted to Hk. Tls. 197,926,331, without including the unrecorded trade at Kiaochow during eight months of the year, probably worth another 14 millions. From which it would appear that results have fully justified Japanese methods of developing trade.

## COTTON SPINNING IN JAPAN

One of the leading industrialists in Japan, Mr. Yamaji Muto, managing director of the Kanegafuchi Spinning Co., the largest concern of the kind in Japan, has an interesting article in the Koshi Keizai, the following being a translation:

The cotton spinning trade generally believe that the industry is now in a state of greater prosperity than any other industry in Japan. This might be so when we make comparison only among those that exist within the empire, but if we once compare it with the spinning industry throughout the world, we cannot but feel pessimistic.

In reviewing the cotton spinning industry, we find only 2,800,000 spindles, which consume 2,500,000 tons of raw cotton, the product amounting to Y220,000,000. Of this the quantity that is exported to China and India in finished and half-finished goods—thread and fabrics—is estimated at about Y100,000,000. Compared with other Japanese industries it might perhaps be the greatest and most profitable, but it cannot be compared with the scale abroad. As the total number of spindles in the world is now believed to be over 150,000,000, Japan's is only a little over one hundredth of this aggregate. Russia is regarded as the most rudimental country in this particular industry among the nations, yet she has 9,000,000 spindles which work day and night incessantly. In other words Russia is over three times greater in this respect than Japan, and even India has twice the number we possess. Thus making our position clear, we cannot help feeling somewhat ashamed of our dull growth in spite of the fact that our island country is matchlessly adapted for this industry.

### The Value of Cotton Thread in Oriental Markets

The time when Japan can really compete with western countries in foreign trade is still remote. As to the present state of our trade, the raw cotton that we import costs one-third of all our imports, and the finished export goods from this raw material renders as much as one-sixth of the entire income from the export trade. Consequently, it cannot be denied that cotton is one of the most important elements in our foreign trade. The only market for our cotton goods, however, is limited to a narrow section of China. China imports annually Y250,000,000 worth of cotton thread and fabrics; Great Britain alone commands over Y100,000,000 of this huge trade and other western countries also share in the trade. Japan has wonderfully increased her export there in recent years, but it amounts to only about Y80,000,000.

India pays the surprising sum of Y400,000,000 per year for cotton thread and cotton goods, of which Japan's share is not more than three per cent and the remaining ninety-seven per cent is practically monopolised by Great Britain.

Thus our cotton industry is still in an embryonic state, and if Japan hopes for its development she must endeavour to expand the market in these gigantic countries. It is all very well to say that our goods have been securing a foothold more and more in India while Great Britain has not been able to import as much as she usually does owing to war. But if Great Britain attempts after the war to impair our trade, putting heavy import duties on our goods in India our efforts will be fruitless. Thus the British attitude in fixing customs duty upon our goods after the war will have a life-and-death effect. Since that is to be the prospect of the trade can our manufacturers produce goods as excellent in quality as those of Manchester? As Britain's future policy will have the heaviest influence upon our cotton-spinning industry in future, our manufacturers must secure the best possible machinery on the one hand and on the other, place the most skilled, the ablest artisans at the looms, in order to improve the quality of our goods.

### Future of Chinese Customs—Duty Question

It is well known that China has been suffering from financial difficulties; she now plans to put heavy import duties on foreign goods so as to seek salvation by increasing her revenue. This is another most important question that all our cotton produce merchants must face in the near future. If China takes a friendly, generous policy toward this question of import duty, our nation must also show the people of China a good, generous example. But contrary to this, if Japan enforces a severe protection policy for her products and demands that the Chinese abandon a similar policy Japan is unreasonable and partial.

### Cotton-mills in China

When China increases her import duty there is no other course for our industrialists than to move into China, build new cotton mills, and thus escape the heavy burden. In erecting such mills in China, however, is not only the difficulty of securing the skilled labour but innumerable inconveniencies will arise, and the situation must be studied very carefully. It is not yet settled among the Chinese authorities whether that nation adopt the protected or free trade policy, and of course, it might be a hard task for her at this moment to abandon her protection policy entirely. When one considers impartially and thoughtfully about the relations between these two nations—the benefit that this commodity offers to many million consumers—and understands the loss that will arise from excluding Japanese goods, he must shun the protection policy and adopt that of free trade. Then it is most important that our nation should also adopt the free trade policy and offer equal chances for China.

### For the sake of Japan and China

It is quite natural that the world powers should persistently endeavour to acquire rights in China, since the country is a sealed warehouse of immense potentiality. Here, it is grievous that the economic relations between Japan and China are not gratifying, in spite of the fact that the two nations have very intimate relations, historically and geographically. What the past may have been, the two must cherish the closest co-operative relations in future, so as to ensure the safety of this giant republic and to ensure Japan's economic independence. The present war has taught us a valuable lesson: that no nation can make war without first of all ensuring her economic independence.

Japan alone can never make sure of her economic independence as she lacks the raw material. But, fortunately, China can supply what we need and thus create our independence. In this relation, Japan can develop her colonies as producers of raw material and at the same time open up the source of concealed wealth in China, thus securing the latter's advancement. For all these reasons, it is best that Japan and China should go hand in hand as free traders, and that is the foremost question awaiting decision between the two nations. This, therefore, is not only a question concerning cotton spinners but our nation at large. —The Far East.

# RECENT BALDWIN LOCOMOTIVES FOR EXPORT

Among the locomotives recently built for export by the Baldwin Locomotive Works, are 10 for the Canton-Hankow Railway of China (Hupei-Hunan Section), which are of more than ordinary interest because of the conditions under which they will operate and the details of their construction.

The Chinese locomotives are divided into three classes. Four of the engines are of the Ten-wheel type for passenger service, four are of the Consolidation type for heavy freight service, and the remaining two are tank engines of the 0-6-0 type, for switching service. These are all standard gage locomotives, built with interchangeable details where practicable. The materials conform to specification issued by the American Society for Testing Materials. The drawings were prepared by the builders, but the designs are strongly suggestive of foreign practice.

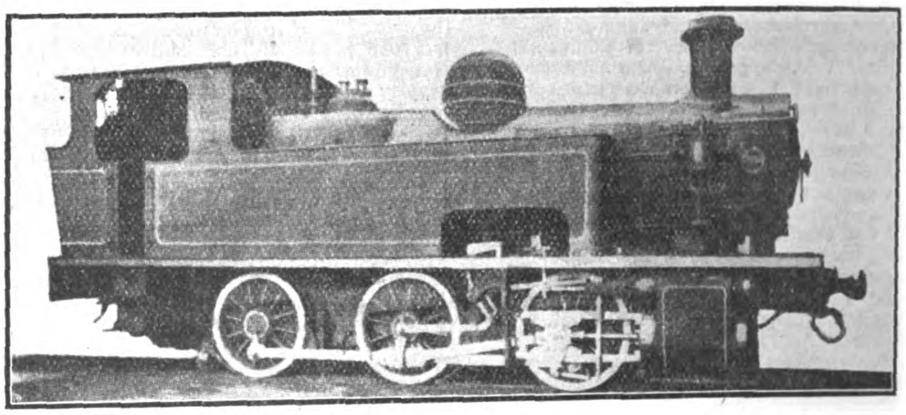
The passenger locomotives exert a tractive effort of 23,600 lb., based on a mean effective pressure equal to 85 per cent of the boiler pressure. The boiler is of the Belpaire type, with a steel firebox, rocking grate and Schmidt superheater. The frames consist of steel plates, 1¼ in. thick. Each frame is made in one piece, and a substantial system of cross bracing is applied to insure lateral stiffness. This bracing includes a long steel plate, placed in a horizontal position between the first and second pairs of driving wheels. The driving springs are underhung, those of the second and third pairs of driving wheels being connected by equalizing beams. The engine truck has a swing bolster and plate frames. The truck springs are not equalized, as the frames are suspended directly from them.

The cylinders are cast separately from the saddle. Piston valves 11 in. in diameter control the steam distribution, and the valve gear is of the Walschaert type with screw reverse mechanism. The equipment includes Westinghouse air brakes, one Weir's feed-water pump and heater, and one Metcalf's vertical restarting hot water injector. The driving journals and cylinders are lubricated by mechanical oil pumps. The design is so arranged that the Lockyer balanced throttle valve, manufactured in Great Britain, can be installed. However, as these throttles could not be secured in time, Baldwin throttles were temporarily fitted and Lockyer valves will be installed subsequent to the arrival of the engines in China.

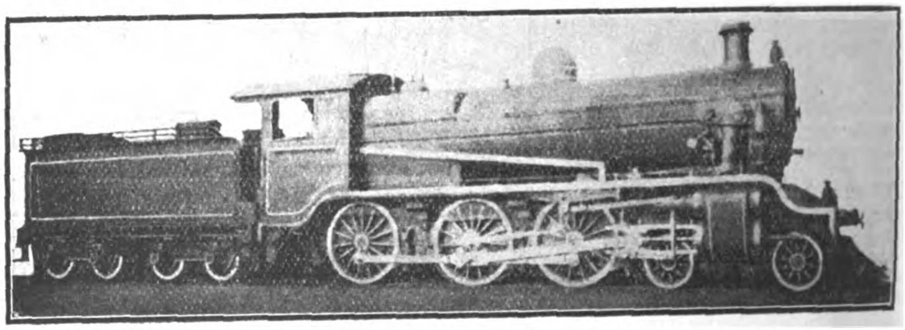
In general construction and equipment the Consolidation engines are similar to the Ten-wheelers. In order to obtain sufficient grate area, the firebox in the Consolidation type is placed above the rear pair of drivers, while in the Ten-wheel type it is between the frames. The Consolidations exert a tractive effort of 33,500 lb.

The switchers exert a tractive effort of 19,600 lb. The water supply is carried in side tanks, and the fuel in a coal box placed back of the cab. In general construction, these locomotives are similar to the road engines.

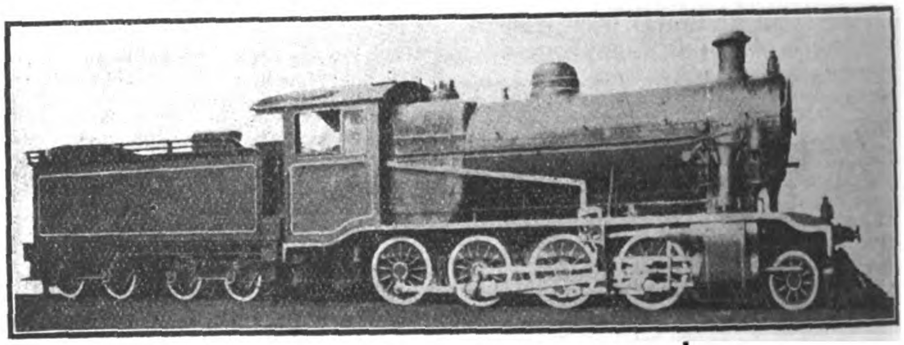
The leading dimensions of the locomotives for the Canton-Hankow Railway are given in the following tables:



Six-Wheel Tank Engine for Switching Service, Canton-Hankow Railway



Ten-Wheel Locomotive for the Canton-Hankow Railway



Canton-Hankow Railway Consolidation Type Locomotive

| | | | |
|---|---|---|---|
| *General Data* | | | |
| Type | 2-8-0 | 4-6-0 | 0-6-0 |
| Gage | 4 ft. 8½ in. | 4 ft. 8½ in. | 4 ft. 8½ in. |
| Service | Freight | Passenger | Switch |
| Fuel | Bit. coal | Bit. coal | Bit. coal |
| Tractive effort | 33,500 lb. | 23,700 lb. | 19,600 lb. |
| Weight in working order | 159,600 lb. | 159,700 lb. | 100,500 lb. |
| Weight on drivers | 143,400 lb. | 113,900 lb. | 100,500 lb. |
| Weight on leading truck | 16,200 lb. | 45,800 lb. | ........ |
| Weight of engine and tender in working order | 261,000 lb. | 261,000 lb. | ........ |
| Wheel base, driving | 16 ft. | 14 ft. 9 in. | 12 ft. |
| Wheel base, total engine | 24 ft. 3 in. | 28 ft. | 12 ft. |
| Wheel base, engine and tender | 52 ft. 4¼ in. | 55 ft. 7¼ in. | 12 ft. |
| *Cylinder* | | | |
| Kind | Simple | Simple | Simple |
| Diameter and stroke | 22 in. by 26 in. | 21 in. by 26 in. | 17 in. by 24 in |
| *Valves* | | | |
| Kind | Piston | Piston | Piston |
| Diameter | 11 in. | 11 in. | 8 in. |
| *Wheels* | | | |
| Driving, diameter over tires | 51 in. | 66 in. | 48 in. |
| *Boiler* | | | |
| Style | Belpaire | Belpaire | Belpaire |
| Working pressure | 160 lb. | 160 lb. | 160 lb. |
| Tubes, number and outside diameter | 161—2 in. | 137—2 in. | 182—2 in. |
| Flues, number and outside diameter | 24—5⅜ in. | 22—5⅜ in. | ........ |
| Tubes and flues, length | 14 ft. 4 in. | 15 ft. 7½ in. | 10 ft. 6 in. |
| Heating surface, tubes and flues, sq. ft. | 1,682 | 1,596 | 993 |
| Heating surface, firebox, sq. ft. | 157 | 185 | 103 |
| Heating surface, total, sq. ft. | 1,836 | 1,781 | 1,096 |
| Superheater heating surface, sq. ft. | 420 | 404 | ........ |
| Grate area, sq. ft. | 39.7 | 31.8 | 19.5 |

# ENGINEERING, FINANCIAL AND INDUSTRIAL NEWS

## RAILWAYS

**The Wuchang-Changsha Railway.**—Construction work on the Wuchang-Changsha section of the Hankow-Canton railway, has been seriously interfered with by the financial stringency caused by the war, and by the great difficulties experienced in the purchase of necessary material. Track has been laid for eighty miles from Wuchang, and an additional thirty miles have been ballasted and are ready for the rails. Gangs are working on 25 miles of permanent way northward from Changsha and another 25 miles is being built northward from Yochow. Work has been obstructed throughout owing to transportation difficulties, costs in connexion with which constitute the largest item of expenditure, all rivers being useless for navigation except at high water.

Necessary buildings in connexion with the railway have not been built owing to shortage of finance, and supplies of materials which should have come to hand eighteen months ago are just being delivered, while some foreign contracts have had to be cancelled. Owing to the war prices have increased one hundred per cent., estimates having, of course, been based upon pre-war conditions.

Efforts are being made to have the line in operation between Wuchang and Changsha by April of next year, but the railway officials will be pleased if they can link up by June, seeing how great are the unlooked for delays. What these are is indicated by an incident which occurred in connexion with a shipment of locomotives. The steamer carrying them arrived at Wuchang without adequate means for discharging them and after considerable delay was compelled to return to Shanghai and there transfer them to another vessel. In his report for the September quarters of this year the British Consul-General at Changsha further illustrated some of the trials and tribulations attending the work. He stated:

But for an unfortunate occurrence to one of the well-curbs of the Liu Yang River bridge, the Changsha section of the line would be open, for a distance of twenty-six miles, to construction trains. The previous district engineer, Mr. Boothby, had no compressed-air plant, and had to work with pumps and dynamite for sinking the wells. The explosive provided was nitrogelatine, the exact power of which was not accurately known to the engineers, who were accustomed to ordinary dynamite. Owing to alternating strata of hardish clay and loose sand, the well has had to be sunk some 65-ft. below the river bed.

An air plant was at last available. Mr. Medlock, the present engineer, brought it to Changsha and installed it on this well, thereby accelerating the work considerably. Unfortunately, within one day of reaching hard bottom, the air pressure cracked the cemented sides of the well, which had been weakened by the use of explosives. The work can now only be completed by divers, involving a delay of about one month.

Meanwhile steel bridge materials are arriving, and twelve miles of rails have also arrived from Hanyang in steel lighters drawing 5-ft. to unload which only four days were allowed, after which demurrage at the rate of Tls. 250 a day per lighter was to be paid. The watermark at Changsha was, at the time, somewhere between three and four feet above Customs zero. Somehow or other the lighters were able to be towed to the mouth of the Sin-ho creek, and by strenuous work the rails were landed ashore in small junks within the time allowed. The shipping arrangements, in this case, were made by the Hanyang Steel Works Authorities, who supply the rails. This is an instance of the difficulties the British engineers have to contend against, at a time when funds are low and materials hard to obtain.

Nevertheless it is expected that the line will be opened right through from Wuchang to Changsha in April or May next year. The prospects of the railway are good. In the single case of the Pinghsiang Colliery, it will most probably have the carriage of 2,000 tons of coke a day from the very first and possibly more.

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**Proposed Extension of Kiukiang-Nanchang Ry.**—According to a report by Mr. W. Russell Brown, H. B. M's Consul, the shareholders of the Kiukiang-Nanchang Railway are anxious to secure the extension of the line from Nanchang to Kan Hsien (late Kanchow) in Southern Kiangsi in the hope that the outlet so given to the rich products of that region may bring increased traffic to the railway and so aid the restoration of its financial position. A suggestion was recently brought forward by the Assistant Director to the effect that a loan of $25,000,000 should be raised from American financiers and, after repayment of the outstanding Japanese and Chinese loans used for the extension to Kanchow.

The following table shows the amount of cargo brought into Kiukiang by the Nanchang-Kiukiang Railway during the nine months ended September 30th, 1916:—

*January to March.*

| *Description.* | *Classifier.* | *1915.* | *1916.* |
|---|---|---|---|
| Tea, seed | Piculs | | 15.59 |
| Tea, black | „ | | 400.87 |
| Tea, leaf | „ | | 62.26 |
| Tea, dust | „ | | 2.41 |
| Tea, stalk | „ | | 124.18 |
| Timber, planks | Fang | | 910. |
| Wood, poles, large | Pieces | | 138. |
| Wood, poles, medium | „ | | 190. |
| Wood, poles, small. | „ | | 195. |
| Wood, poles, miscellaneous | „ | | 117. |

*April to June.*

| | | | |
|---|---|---|---|
| Bamboo | Pieces | 1,060 | 1,816. |
| Tea, black | Piculs | 2,072.92 | 10,008.32 |
| Tea, leaf | „ | 7,543.08 | 9,564.23 |
| Tea, dust | „ | 121.39 | 1.21 |
| Tea, stalk | „ | 17.85 | 109.58 |
| Timber, planks | Fang | 1,109. | 1,067. |
| Wood, poles, large | Pieces | | 167. |
| Wood, poles, medium | „ | 630. | 69. |
| Wood, poles, miscellaneous | „ | 226. | 51. |

*July to September*

| *Description.* | *Classifier.* | *1915.* | *1916.* |
|---|---|---|---|
| Tea, black | Piculs | 2,742 | 1,831 |
| Tea, leaf | „ | 7,276 | 6,615 |
| Tea, dust | „ | 69 | 3,552 |
| Tea, stalk | „ | 461 | 221 |
| Timber, planks | Fang | 1,130 | 965 |
| Junk borne June quarter 1916, Tea, black | Piculs | | 105,447.33 |
| Junk borne June quarter, 1916. Tea, leaf | Piculs | | 12,415.18 |
| Junk borne, Sept. quarter, Tea, black | Piculs | | 11,121 |
| Junk borne Sept. quarter, Tea, leaf | Piculs | | 11,310 |

An examination of the above table of rail-borne cargo shows that no inconsiderable part of the trade of the port—approximately 9 per cent of the junk-borne total in the June quarter—in spite of the heavy handicaps of bad management and railway maintenance taxes levied on all provincial goods travelling by rail. Under efficient management this is merely a matter of time, the volume of rail-borne cargo is certain to increase and the line is likely eventually to carry the bulk of cargo arriving in Kiukiang for export. This must result in a movement of shipping away from the British Concession across the creek to the west in order to be nearer to the railway. This will mean that the business centre of the port will pass from the Concession to the railway river front, and steamers that have facilities to load cargo in the vicinity of the railway will enjoy a marked advantage as compared to their competitors in the Concession. In this connection it should be noted that the Japanese firm of Nisshin Kisen Kaisha has already acquired hulk and shore connections opposite the railway terminus. It is, of course, likely that the railway company may in time build a public wharf, but in view of the strong Japanese influence in the railway Japanese steamers would no doubt be shown preference as compared with those of other nations.

The contemplated removal of the Native Customs and possibly the Maritime Customs to a site above the creek in close proximity to the railway will still further tend to take away cargo from steamers berthing at the Concession. The bridging of the creek and the expansion of the railway along the back of the British concession is absolutely necessary in order to prevent the diversion of the business centre of the port from the Concession in the interest of the resident British firms.

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**Ssupingkai - Chengchiatun - Railway.**—Survey on the route for the proposed Ssupingkai-Chengchiatun Railway having been completed, Mr. Wu, the Superintendent of the Railway, is proceeding to Peking to submit the plan and estimate to the Department of Communications. Mr. Wu recently conferred with the South Manchuria Railway Co.'s authorities in Dairen. Since the price of materials has considerably advanced, it is impossible to build the line with the amount of money originally deemed sufficient for the construction. Therefore, the work will be started with a view of making it serve the purpose for the time being, and gradually replace it with more permanent structures. Expenses required in this way, for railway bed and a temporary bridge across the Liao-Ho, etc., will not be more than $4,000,000, but if a steel bridge is to be built, this alone will cost over $1,800,000, and the total cost will exceed $6,000,000.

A portion of the road-bed has been built. Work on the balance of the route will be started next year, as soon as the ground thaws, with the object of completing a temporary line as far as Sankiangkow by December, 1917. This section between Ssupingkai and Sankiangkow will then be opened to traffic. It is expected that the entire line up to Chengchiatun will be ready for service by August, 1918. After the provisional line comes into existence,

the authorities will set to work to reconstruct it into a permanent road a section at a time and the reconstruction probably will end by 1919. But as this depends upon the financial condition of the Company as well as the facility of those who will supply the required materials, more or less delay may ensue.

The Hanyang Steel Works will furnish rails, the first lot having been shipped on November 30. It will be brought to Ssupingkai and onward by Chinese carts, the only conveyance available and to get a sufficient number of them together will be a painstaking task in itself.

For the present no station will be built at the Ssupingkai end, but the installation of the South Manchuria Railway Co. there will be utilized. Rigid economy will be exercised all around, and yet, about $120,000 per mile is expected to be required for the construction, in view of the difficult nature of ground over which the railway is to run. Great difficulties are especially expected in the bridging of the Liao River, where it is said that even at a depth of 150 feet a solid foundation is still lacking.

**Work on Canton - Szechwan - Hankow Railway.**—According to the *China Advertiser*, translating from Chinese newspapers, the plan of connecting Kwangtung with Szechwan was first mapped out by an American corporation. In view of great national interests involved in the line, however, the late Chang Chih-tang bought back the concession from the corporation with the idea of building it under the auspices of the Government. But strong opposition of the people in the province through which the line was to pass, who wanted it to be constructed as a popular enterprise, prevented the work from being carried out for several years. Later Mr. Sheng Hsuan-hui, thinking it hopeless to see the railway brought into existence if left in the hands of private promoters undertook to have the Canton-Hankow and the Hankow-Szechwan lines nationalized and planned to push the work by obtaining the necessary funds from abroad. But it happened that in Kwangtung and Szechwan shares having been subscribed for, works were about to be started under private management. In consequence, considerable opposition was raised against Sheng's scheme, with the result that the Government had to relinquish the project and commence operations in Hunan and Hupeh, giving permission to Kwangtung and Szechwan to proceed with the work under the supervision of the private companies concerned.

This left the section between Wuchang and Kwangchow on the Canton-Hankow line and the section between Hankow and Kweichow on the Hankow-Szechwan line in the hands of the Government. When the Republic was established the Government appointed Mr. Jeme Tien-yu superintendent of the lines and detailed him to Hankow to carry out the work. The outbreak of the European war, however, soon compelled this able engineer to drop the extension of the line, as the supply of funds was cut off. Thus, the undertaking so far as the work of advancing the railhead is concerned is now almost suspended, but on the section where construction was started gangs of coolies are kept busy. For the present, the Hankow-Szechwan Railway is in the follwing condition. With the exception of the section between Chengtu and Kweichowfu, which is to be built by a private company, the balance of the line belongs to the Government. This Government section is divided into two parts, one between Kweichow and Ichang and Hankow. Each part has its own general office for construction, which is located at Ichang and Hankow respectively. Owing to the very mountainous nature of ground near Ichang, an outlay of a large sum of money was found necessary for construction. But the war having deprived China of the source whence she could obtain her financial supply, work is now abandoned. In the division under the supervision of the Hankow-Ichang General Construction Office, work was going on the 20 li section between Tienmen Hsien and Peishi. Director Jeme however thought it unnecessary to maintain the general office for such a short section and so closed it last year. He is now personally superintending the work. The line between Hankow and Peishi having already been completed Mr. Jeme managed to obtain funds from a foreign bank to push it further westward 37 kilometers beyond Peishi. A survey was made, and the purchase of land has been started.

On the Canton-Hankow line, practically the whole route is owned by the Government, with the exception of a stretch near Kwangchow and theChangsha-Chuchow section, which are in the hands of a private corporation. The latter is in the possession of Hunan people and in working order. For the Government line, a general office was established at Hankow and work was pushed from Wuchang to Hsuchiapeng, when the outbreak of the European war compelled the authorities to suspend operations. Later, however, arrangements having been made between the railway authorities and a foreign bank, funds were procured to push the railhead to Yochow, but when the extension was undertaken it was found that unless Changsha was reached, the line would not pay. With that end in view, therefore, further negotiations were opened between the Communications Department and the bankers, and money was obtained to carry on construction as far as Changsha for a further distance of 300 li. Rails have already been laid for the section between Wuchang and Puchi Hsien for some 200 li, and railway materials are being carried forward over the line. It is expected that the Wuchang-Yochow section will be opened to traffic by the coming spring.

**Karafuto Ry. Expense Curtailed.**—The present Japanese ministry has made a cut of 200,000 yen in the building expenses of the Karafuto railway for the next fiscal year, which, according to the original plan made by the Okuma cabinet, was to be 1,230,000 yen. The railway is to run round the island, and 19 miles in Atei Bay line and 38 miles in the western coast line were decided upon for construction during next fiscal year by the Okuma ministry. The present ministry has lessened the next year's portion in the western coast line to 28 miles.

**Japan's Railway Revenue.**—The revenue of the Imperial Japanese Government Railways from April to November 21 was 41,529,387 yen in passenger fares and 42,647,540 yen in freight charges. Compared with the same period of 1914, there was an increase of 3,676,134 yen in passenger fares and 8,769,781 yen in freight charges, and against the same period of 1915, an increase of 4,446,136 yen in passenger fares and 8,396,573 yen in freight charges, this year.

**Haiphong-Yunnan Railway.**—The gross receipts of the Haiphong-Yunnanfu Railway (859 kilometres) for the first eight months of 1916 amounted to $2,028,904 as against $1,781,962 for the same period in 1915. Although the rainfall this year has, if anything, been less than the average, traffic on the Haiphong-Yunnanfu Railway has been interrupted several times owing to landslides and heavy goods traffic has been stopped for some months. Messrs. Shewan, Tomes and Company have had $60,000 worth of machinery on the line since the beginning of May, which has not yet reached Yunnanfu. The worst break was in the Namti valley, where tunnel No. 20 fell in, fortunately without causing any loss of life; this, in addition to necessitating lengthy and costly repairs, has caused considerable anxiety to the Railway Authorities, as the mountain which this tunnel pierces is constantly moving. It is hoped by the end of October to be able to push goods wagons through this tunnel by hand, but it will probably be some months before it is considered safe for a locomotive to pass.

**Shantung Railway.**—The estimates for the Shantung Railway for the next fiscal year, now under overhauling at the Japanese War Office, are substantially the same as those for the preceding year with an increase of Y100,000 or thereabouts for construction and current expenses. The aggregate amount is put at Y650,000 in round figures.

On the reorganization of the Shantung Railway staff (Mr. T. Fujita, Director-General), M. S. Sakaguchi (Superintendent of the Mining Department) has been created Director, assuming the place of assistant to Mr. Fujita.

The five departments have been increased to eight with their respective superintendents as under:—

Mr. T. Sayeki, Auditing and Statistical; Mr. S. Kitada, Traffic; Mr. Y. Funata, Locomotive; Mr. K. Nakamura, Construction; Mr. K. Kato, Accounting; Mr. S. Kobayashi, Stores; Dr. Y. Homma, Hygienic; Mr. K. Wada, Workshops. The Auditing and Statistical Department is a new creation; the Transportation Department has been resolved into the Traffic and the Locomotives, and the Accounting Department into the Accounting and the Stores. The Railway staff consists of 2[illegible] officials of the *sonin* Rank and 374 of the *hannin* rank.

**Russian Railway Bridge at Habarovsk.**—The Amur Railway bridge over the Amur at Habarovsk was opened to traffic on November 5/18, the nameday of the Czarowitz, in the presence of Gov.-Gen. Gondatti. The new Bridge was christened after His Imperial Highness. Its construction has taken [illegible] years to complete and has cost Roubles 18,000,000. It is 7593 feet long, one of the longest bridges in the world.

**Mengkiang-Linkiang Light Rail Line.**—The Mengkiang-Linkiang light rail line, 2[illegible] miles in length, the construction of which was undertaken by a group of Chinese gentry headed by Mr. Wanglinko, has the Sanch[illegible]-Wangchiatangtzu section (about 17 miles long) completed. Favourable weather being granted, the whole line may be finished before the end of the year. The light rail line is for the conveyance of timber to be put out from the forest lands in the two Prefectures.

**Shanghai Tramways.**—The following is the Traffic Return of the Shanghai Tramways for 12 months ended 31st December, 1916, with figures for the corresponding period last year:—

| | 12 Months ended 31st. December, 1916. | 12 Months ended 31st. December, 1915. |
|---|---|---|
| Gross Receipts | $1,537,577.53 | $1,348,288.[illegible] |
| Loss by currency depreciation | 387,509.61 | 362,368.77 |
| Effective Receipts | Mex.$1,150,067.92 | Mex.$985,919.3[illegible] |
| Percentage of loss by currency depreciation | 26.72 | 28.8[illegible] |
| Car Miles run | 3,803,980 | 3,344,00[illegible] |
| Passengers carried | 69,089,432 | 50,749,71[illegible] |

## MINES

**Tayaokow Coal Mines.**—The coal mines at Tayaokow are located at a point about 3[illegible] miles north-west of Chinchow, north-east of Hsingcheng and due north of Lienshan Wan. The discovery of the deposit was made ages ago, but aside from its being used for domestic purposes by the local Chinese, the public was hardly aware of the existence of such mines in Western Liao Territory. The fact

of the existence of an enormously rich coal-bed in the region was brought to the light of publicity for the first time during the period when the "rights recovery" idea was rampant throughout the country, some years ago. At once a company was organized with a capital of one million dollars, Chang Hsun, Liang Shih-yi, Yeh Liang-hsiang, Lo Yu-ting, Wang Ching-shan and other high officials being among the principal shareholders. As the first step, a coal-depot was established at a place called Yang-Hsin-Tun, 6 miles west of Chinchow on the Ching-Feng Railway. Then a railway was constructed straight to the mine for a distance of 19 miles. Modern mining apparatus was bought and operations were started. This took place in Kwang Hsu's 30th Year.

The company has two pits, the depth of the first measuring 650 feet and the second 380 feet, with an incline of about 20 degrees. Double tracks of light railway are laid in the mines for hauling the output, 1,000 trucks being used for the purpose. 5-600 miners are used, and 400 tons, more or less, of coal are taken out every day. The management and operations are entirely in the hands of Chinese. The mining lots in possession of the company merely amounting to about one-fourth of the extensive coal bed understood to be lying in that region in three distinct coal seams and running in different directions, the management is said to be contemplating to further purchase adjacent coal fields. The quality of the coal will best be learned from the below reproduced analytical table in which it is compared with the Fushun and Kaiping products.

| | *Fushun.* | *Kaiping.* | *Tayaokow.* |
|---|---|---|---|
| Water ... ... | 5.23 | 2.82 | 2.62 |
| Volatiles ... | 36.52 | | 16.16 |
| Fixed Carbon... | 50.71 | 69.36 | 62.09 |
| Ash ... ... | 7.54 | 27.82 | 19.12 |
| Sulphur ... | 0.63 | 0.75 | 0.65 |
| Nitrogen ... | 14.10 | 0.06 | |

At Chinchow and its neighboring towns, the Tayaokow lump coal is sold at $7.20 per ton, while dust coal fetches something like $4.90. Owing to the inexpensiveness of the price, the output is expected to be brought to South Manchuria in large quantities soon, a trial of a 200-ton shipment having already been made to Yingkow in September and distributed to various workshops to try it.

As the mines are located not far from Lienshan Wan, when the port at the latter is constructed the product can be shipped to various directions without experiencing any difficulty. At present, the Kailan coal is supplying the market in the Liaosi region to the extent of 50% of the demand, against 30% of the Fushun and 20% of the Tayaokow coal, but the time will come when the last mentioned will prove to be a formidable rival to the two others not only in the region, but in other ports along the southern coast of China.—*China Advertiser.*

**Anshanchan Iron Mines.**—Mention was made in previous issues of the iron mines at Anshanchan. A Sino-Japanese joint corporation named Chenhsing Kungssu has been organized and the promoters are said now to be in readiness to start mining as soon as the necessary permit is given by the authorities. The ore taken out will be purchased by South Manchuria Railway Company which intends to set up two smelters next year, to be able to produce say 150,000 tons of pig iron per annum. The plant will be gradually extended with a view of manufacturing steel. At a meeting of the Directors of the Railway Co. recently held at Dairen, an organizing Committee was appointed to proceed with the preparatory work. The site of the iron works and other matters will be decided upon by the Committee.

Regarding the project, Mr. Nunome, a Japanese iron expert, says that Japan demands same 1,300,000 tons of iron a year. Against this, her own iron production does not reach more than half a million tons. Thus, a considerable quantity of the metal is annually imported from the United States, Germany and China. In Manchuria, iron was first manufactured at Penhsihu. The present scheme of turning out iron with the ore obtained at Anshanchan is a timely one, not only because it is produced at a place not far from the Government Iron Works at Yawata but because the nature of the iron is such that it can be manufactured into steel most in demand in Japan. Mr. Nunome thought it inopportune to discuss the particulars of the scheme, nor was he able to give a definite statement regarding the kind and quantity of steel to be manufactured at the works, six varieties of steel being in use in Japan. But he was sure that iron works to be established at Anshanchan will not have to go through such great trials as were experienced by the Yawata Government Works during its early stage.

**Shantung Iron Mines Worked by Japanese.**—It has been decided, after all the attempts made by some enterprising private capitalists of Japan, that the experimental borings of the Chinlingchen Iron Mine should be made by the Shantung Railway Administration. There is a wide divergency between the German estimate and an estimate formed on a geological deduction as regards the wealth of the mine, says the "Manchuria Daily News," adding that an approximately accurate estimate as to the extent of the vein and also the quality of the ore is expected to be prepared upon the results of these borings. From Y. 20,000 to Y. 30,000, they say, is thought to be enough for the boring process.

As regards experimental mining, continues the Dairen paper, the Germans carried out the excavation of a pit to the depth of 300 ft. One hundred feet further down the vein is expected to be reached. A few tens of thousands of yen are supposed to suffice for the purpose. All the funds required are being defrayed out of the emergency fund of the War Office. When the mining work is to be inaugurated in good earnest, when the results of the experimental borings warrant such inauguration, at least Y. 500,000 or so will be required. As there is only a light rail service now available between the mine and the Shantung Railway, a branch line on standard gauge will have to be built, and in order to have every detail of the plan realized, an outlay of about Y. 3,000,000 will be wanted. In such event the amount will be asked of the Imperial Diet in the form of a supplementary estimate.—*N. C. Daily News.*

**Seoul Mining Company.**—During the month of November the mills of the Seoul Mining Co. treated 18,754 tons of ore and recovered Yen 285,600. The outlook in the Prospecting Department is most satisfactory, and the testing of the Soctaric Tungsten Ore continues encouraging.

In December, 18,284 tons of ore were crushed from which $136,688.36 U. S. Gold, were recovered in Bullion and Concentrates. December being the end of the Company's Fiscal year, there will be included in the accounts a receipt of $184,000 U. S. Gold, representing Smelter Returns in excess of Mine valuation due to the high price of Copper.

Tong Ahm Tunnel No. 9, located about 1,500 feet from the Main Workings of the Tul Mi Chung Mine, is now developing an average grade ore.

## COMMERCIAL

**Newchwang Export Returns.**—Goods exported from Newchwang to Japan during May, 1916, amounted to 422,809 piculs, including 267,966 pls. bean cake, 4,720 pls. bean oil, 848 pls. castor oil, 41,178 pls. pig iron, etc., besides 1,440 tons Fushun coal. Bean cake decreased by 19,972 pls., but bean oil increased by 1,253 pls., as compared with the corresponding period of last year. Goods destined to China ports during the same period totalled 230,815 pls. in addition to 4,100 tons Fushun coal and 2,800 of Kwantung salt. Compared with the corresponding period of last year, bean cake and beans decreased by 47,080 pls. respectively.

**Japan's Raw Silk Export.**—The export of raw silk has increased greatly during the last few months. For eleven months from July 1, last year, to the end of May, the silk shipped from Yokohama was 185,246 bales—25,852 bales to Europe and 159,394 bales to America. Compared with the figures of corresponding period of the previous year, there was an increase of 2,143 bales to Europe and 35,648 bales to America.

**Calamba to Enlarge Sugar Central.**—A 2,000 ton sugar central at Calamba, Laguna, to be erected as soon as cost of material and freight has gone to normal, is the plan of the Calamba Sugar Estate company, according to an announcement made by Executive Secretary De Veyra upon his return from an inspection trip. This improvement is being considered by the company in view of the continuous extension of the sugar fields which are under cultivation. The sugar company has about 9,000 hectares of land, but only one thousand of these are under sugar cultivation, the other 8,000 being left idle, or in some parts planted with coconuts and other kinds of commercial plants. The company has at present a mill with a capacity of 1,200 tons, which is being turned out every day, working both day and night, without a moment's rest. Next year the company plans to increase the milling capacity of the machine by 500 tons more, as it is forecast that 1917 will see a banner sugar crop. In case freight conditions and cost of material have come down to normal, the company will then undertake to increase its present milling capacity by one thousand tons more.

**China's Cotton in Demand.**—A recent estimate shows a decrease of 1,700,000 bales in the expected yield of American raw cotton, which has caused Japanese mills to turn to China more insistently as a source of supply owing to the recent rise in prices. Affected by the appreciation of American and Indian raw cotton the Chinese raw cotton market also shows activity. Stocks are now decreasing owing to the shortage of output and also to the demand from spinners in Shanghai. Stocks held in Tokyo and Yokohama on September 5, were 2,500 bales of Ningpo and 400-500 bales of Tientsin which will be disposed of in one week's time, while new raw cotton could not be expected before the middle of the month.

New Ningpo raw cotton is now quoted at 34 yen 50 sen, some business for which is expected to be concluded in a few days, whereas Tientsin cotton, which is superior to the Ningpo, is now ruling at 37 yen 50 sen, which is expected to rise to 40 yen in sympathy with the quotation on American and Indian cotton. The difference between Tientsin and American product used to be 12 to 13 yen, and the fact that it now is over 20 yen indicates a further rise in Tientsin cotton. Waste cotton is now being used for making of other larger yarns, to save the cost. The above fact coupled with keen demand from Russia contributed towards brightening the market, which now shows an advance of 1 yen 50 sen to 1 yen 70 sen. With the appreciation of American and Indian cotton, the Chinese cotton is expected to assume an unusual activity and the future of the raw cotton market is now full of interest.

## CANADA CARBIDE COMPANY

Canada has for many years, at least since 1896 up to the outbreak of the war, been studying History. Since the outbreak of the war Canada has been making History. When the account of the Great War comes to be written, Canada will have an honorable place.

The demand for new materials other than those we have been accustomed to produce has awakened the latent energies of our foremost Captains of Industry and as a result Canadians have surprised themselves as much as they have surprised the outside world by coming to the front and producing articles, such as Munitions, which up to two years ago we had never dreamed of manufacturing.

The adjustment of commerce amongst the Allies has drawn heavily on other manufacturing and industries, and possibilities never before dreamed of are now knocking at our door with an inviting voice to come in and possess the land. Among such industries can be mentioned the Canada Carbide Company, Limited, with Works located at Merritton, Ontario, and Shawinigan Falls, Quebec. This Company first doubled their capacity, then trebled it and now have quadrupled their capacity of three years ago and have now the largest Carbide Works in the British Empire.

The demand is increasing so fast that another enlargement is contemplated. This means a great increase in the demand for Canadian Raw Material. It means increased demand for Canadian Labor and Capital. It is also an advertising medium as every package shipped is *plainly* branded "Canadian Carbide" and the quality of the Carbide being *the* very best has enabled the Company to hold old customers and win new ones.

Canadian Carbide is used in all parts of the world, China, India, and the Islands of the Seas, in addition to the British Colonies and the United Kingdom.

The Canada Carbide Company, Limited, is also branching out by making other metallurgical products, of which we are promised a brief account at some future date. This has been brought about by having a large quantity of cheap electrical power, of which Canada has many, the electrical developments at Niagara Falls, Peterboro and Shawinigan Falls being just starters.

The Canada Carbide Company, Limited, is closely allied with the Shawinigan Water & Power Company, from whom they purchase electrical power.

## PLANTATION FILTER PLANT

The Kuala Lumpur Rubber Co. are about to install a Candy Filter Plant for dealing with the water supply to one of their Estates, the water being obtained from a swamp well. The Filter is being supplied by the Candy Filter Co. Ltd. of Westminster, London, England, who are shipping it, together with a Chemical Alumina Plant, and a quantity of the powerful Oxidizing and purifying material "Polarite," which will be used in the Filter, as well as silica sand and grit, to ensure the highest degree of purity.

The Candy Filters have the great and unique advantage of being the *only* Filters in the market that contain the special Oxidizing and purifying material known as "Polarite," in addition to a filtering bed of Silica Sand, etc. Polarite is a specially prepared and granulated black magnetic oxide of iron in a microscopically porous condition—it is rustless and practically everlasting and has proved to be a most powerful oxidizing and purifying material.

The late celebrated Scientists, Professor Sir Henry Roscoe, as also Sir Edward Frankland and others, made exhaustive trials with Polarite and reported it to be a highly valuable material for the purification of water. Many other scientists have also, from practical experience of the material, formed the highest opinion of its purifying powers; the Candy Filter Co. are the sole manufacturers and owners of Polarite (it being the invention of Mr. Frank Candy, the Managing Director of the Company who has had upwards of 20 years practical experience in water purification).

Candy Mechanical Filters therefore, possess one unique and great advantage over all other types of Filters, inasmuch as they alone are the only Mechanical Filters which contain a layer of Polarite, in addition to the layers of silica sand, grit and gravel used in all Mechanical Filters. Silica Sand is an *inert* substance that can only act as a straining material, while Polarite is an active oxidizing agent, possessing intensive purifying as well as filtering properties.

Only recently the Candy Filter Co. shipped a large quantity of Polarite to the West Coast of Africa, at the order of the Crown Agent for the Colonies, for the purification of a water supply in Nigeria. Briefly speaking, Candy Filters can not only do the same work as all other types of Filters, but are able to perform such work in a better, more scientific and economical manner, by reason of the special advantages arising from the use of Polarite, of which the Candy Filter Company possess the sole rights.

## MEDIUM-LIFT CENTRIFUGAL PUMPS

It is not always a simple matter to decide whether a pump for dealing with large quantities of liquid against a comparatively small head should be of the turbine or centrifugal type. The distinction between the two lies in the fact that guide vanes are fitted to turbine pumps but are not included in the centrifugal design. This may not assist potential users to select the more suitable form, and the choice should be left to the makers, but as a general rule, for dealing with quantities up to 1,000 gallons per minute, turbine pumps should be used where the head exceeds 100 ft., and centrifugal pumps for delivering against lower heads. Where the quantity to be dealt with exceeds 1,000 gallons per minute, and this has to be delivered against a head of over 150 ft. turbine pumps are the more suitable, but where the head is less than this, the centrifugal form is the better type.

In view of the fact that Messrs. Mather & Platt, Ltd., Park Works, Manchester, were the original makers of the turbine pump, their name has been identified with that form throughout the world, but it is not generally so well known that they also make centrifugal pumps, which maintain the high standard attained by the type so long associated with their name. Centrifugal pumps for medium lifts are dealt with in an 8pp catalogue that has just been published by this firm, their characteristics and details of construction being described fully. These pumps maintain their efficiency over an unusually wide range, and will not overload the motors driving them beyond a predetermined amount, however much below normal the head against the pumps is reduced. While any required degree of overloading can be provided for, the firm's standard is about 10 to 15% above the power required to drive the pump at its normal rated output.

In the design of these pumps the makers have based their calculation upon recent and exhaustive experiments, in order to secure the most efficient conversion of velocity-head into pressure-head. The casing is so proportioned that it forms a rigid framework for the branches, end-covers and bearing brackets, while solid feet of wide spread support the pump on the baseplate. Without removing the pump from its bedplate or disconnecting either the suction or the delivery pipes, it can be entirely dismantled for repair or examination. Split bearings with split bushes are standard. Pumps used for dealing with wood pulp and semi-liquids generally, are provided with an external clean water seal. The impeller is of the double suction enclosed type, carefully balanced to ensure smooth running, the vanes being filed to template and all the other parts bored, turned or fitted to gauge. No thrustblock is needed, the pump being in perfect hydraulic balance owing to the form of impeller and to the provision of clearance spaces of similar shape on either side. The pumps can be driven by belt or rope or through a flexible rubber-bush and steel pin-type coupling by an electric motor.

## FIREPROOF CONSTRUCTION

Fire prevention is the order of the day. More and more is a study being made of ways and means of fireproofing. In the United States there has been established a Fire Prevention Society—an organization whose name denotes its purpose. And the Underwriters Laboratories of the same country is continually testing devices designed to prevent fire.

But it is in fireproof construction that perhaps the most progress has been made. Any number of building materials now on the market are contributing to lessen fire risk. Conspicuous among them is Kno-Burn Expanded Metal Lath.

It is a well known fact that the great majority of fires start indoors. Most frequently they begin in the walls. An overheated furnace or pipe is often the cause of conflagrations.

Kno-Burn Expanded Metal Lath is greatly decreasing the number of interior fires. It is fireproof and therefore safe. Wood lath is a conductor of fire and therefore is a menace.

But Kno-Burn Expanded Metal Lath is more than fireproof. It is economical. It has the same co-efficient of contraction and expansion as has the surface of plaster or stucco which covers it. Therefore, cracks, falling plaster and the need for repairs are obviated.

## A REVOLUTION IN METAL BEDS

The metal bed, and particularly the iron bed, has for years led the world in metal furniture, but it was never brought to its best usage until the perfection of the light weight cold rolled burnished steel tube bed, which has recently been perfected by the Simmons Company, of Konesho, Wisconsin.

This Company has long enjoyed the largest volume of metal bed business in the world, but for several years they have recognised the imperfections in the old style heavy gaspipe iron bed. They have had their engineers working with a view of perfecting a lighter bed, which at the same time, would give a smooth surface and a solid construction. These years of experiment finally developed the bed which has revolutionized the industry, and has placed such a heavy demand for shipments on The Simmons Company, that they have been forced to work night and day in order to keep pace with the ever increasing business and they have built a six story addition to their factory for the express purpose of caring for this one article. One of the most striking facts about this unprecedented demand is that the orders have come from every corner of the world and the problem before The Simmons Company today is to secure shipping facilities to fill these orders from Archangel to Cape Town and encircling the globe from Panama to the Suez.

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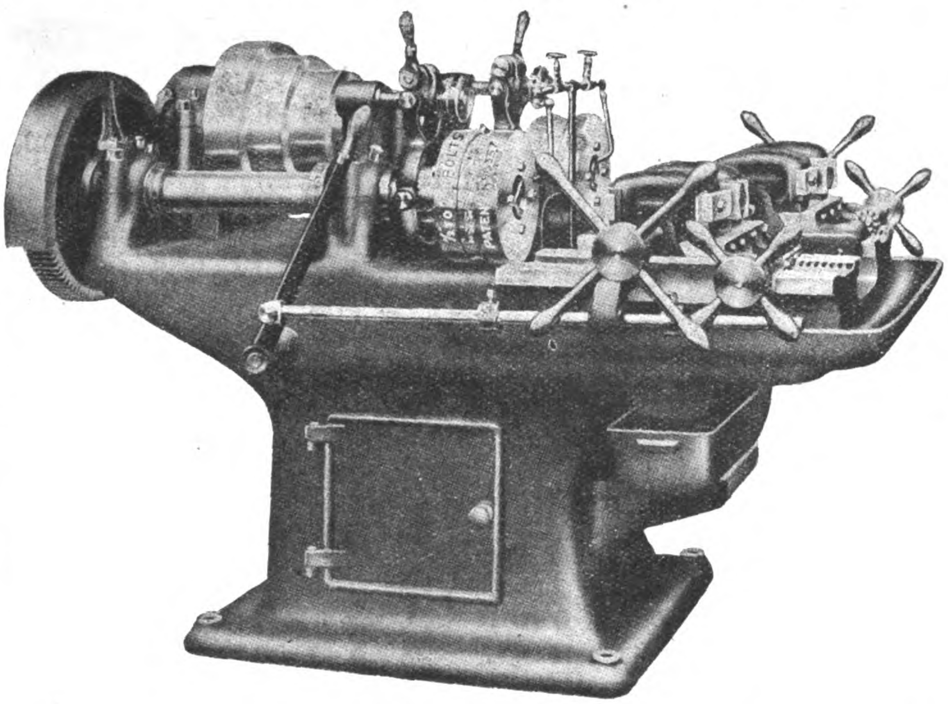

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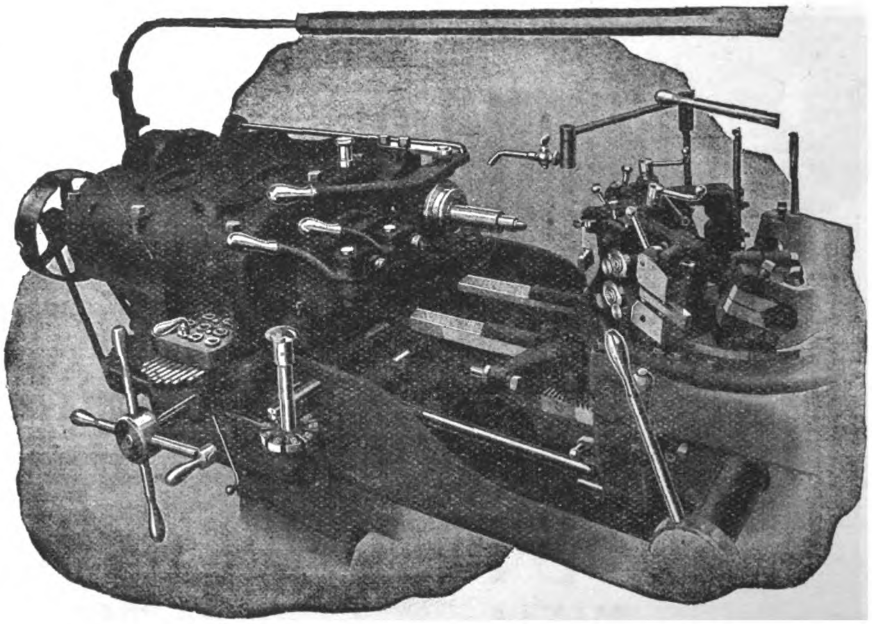

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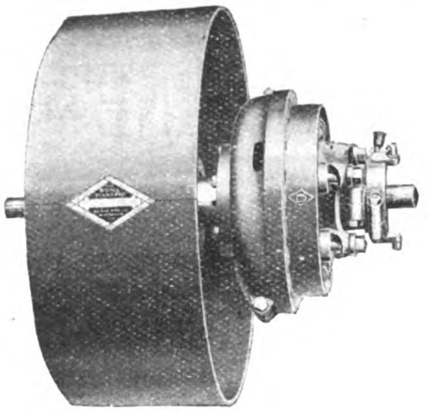

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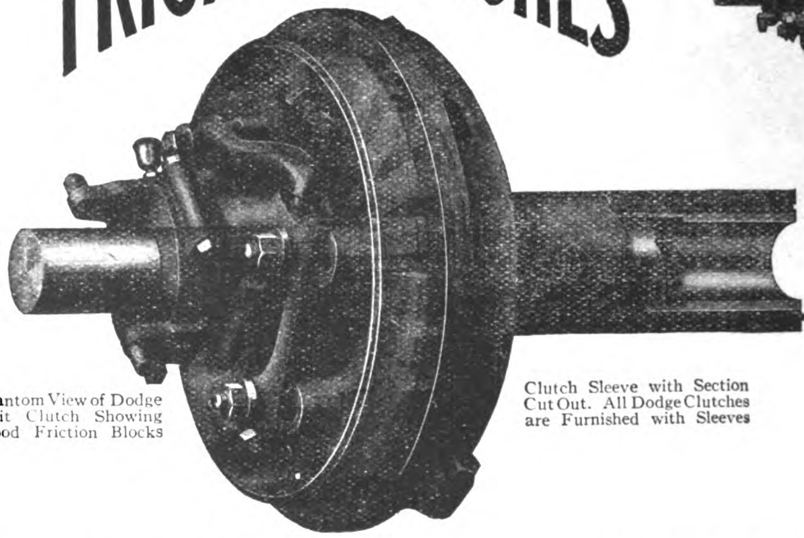
Split Clutch with Dodge Standard Split Pulley Mounted on Clutch Sleeve



Phantom View of Dodge Split Clutch Showing Wood Friction Blocks

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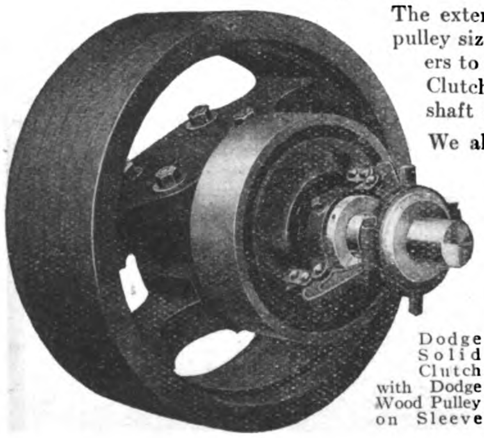

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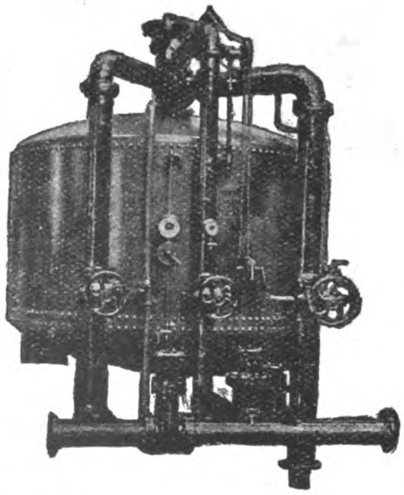

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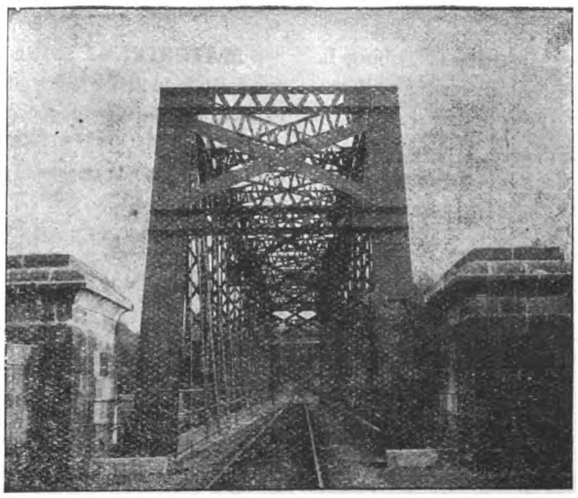

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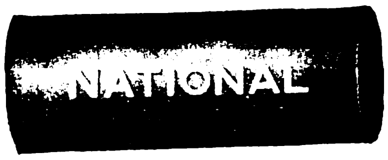


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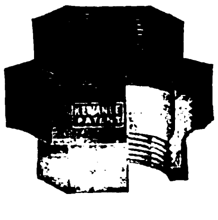

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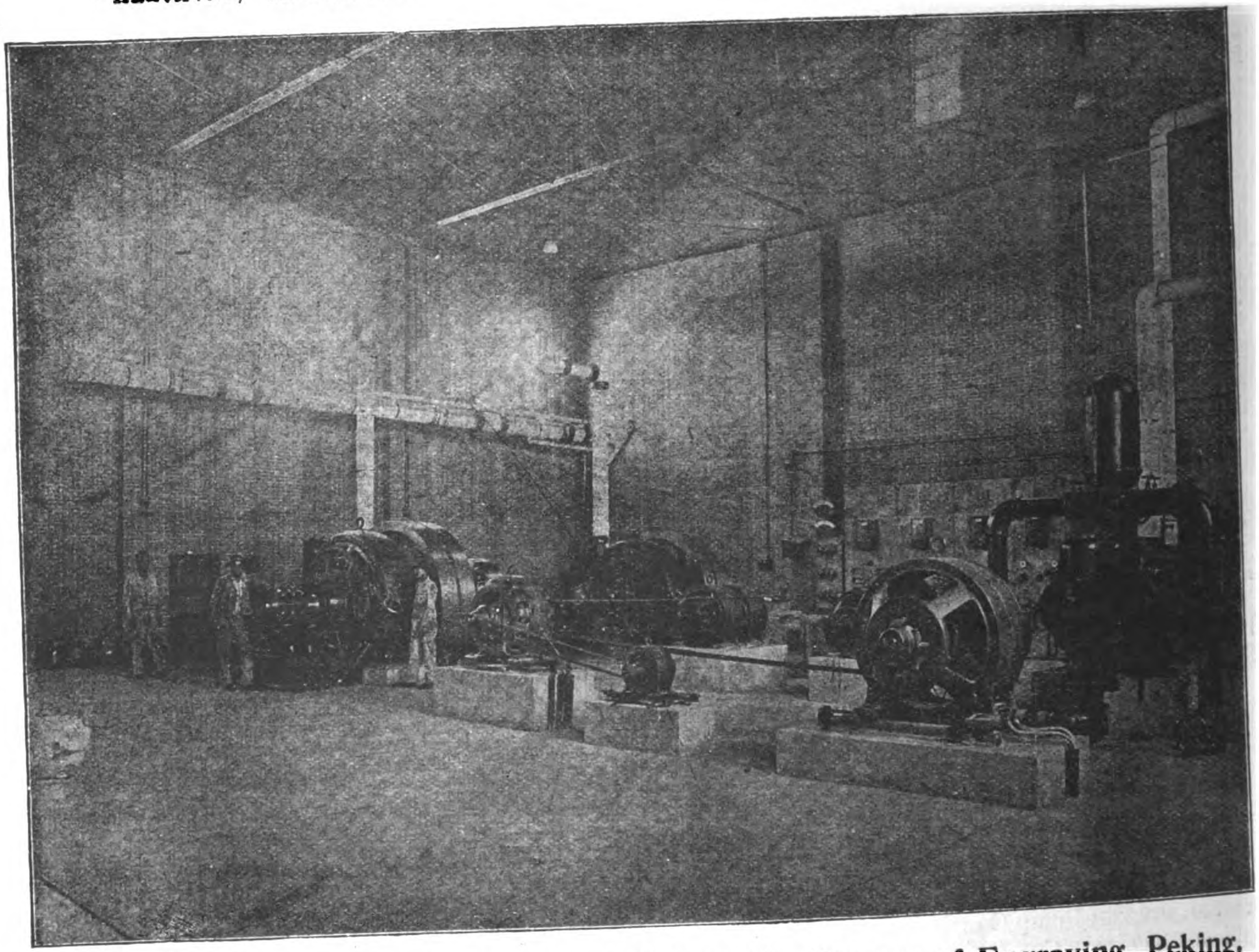

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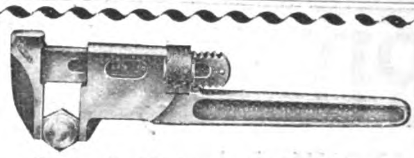

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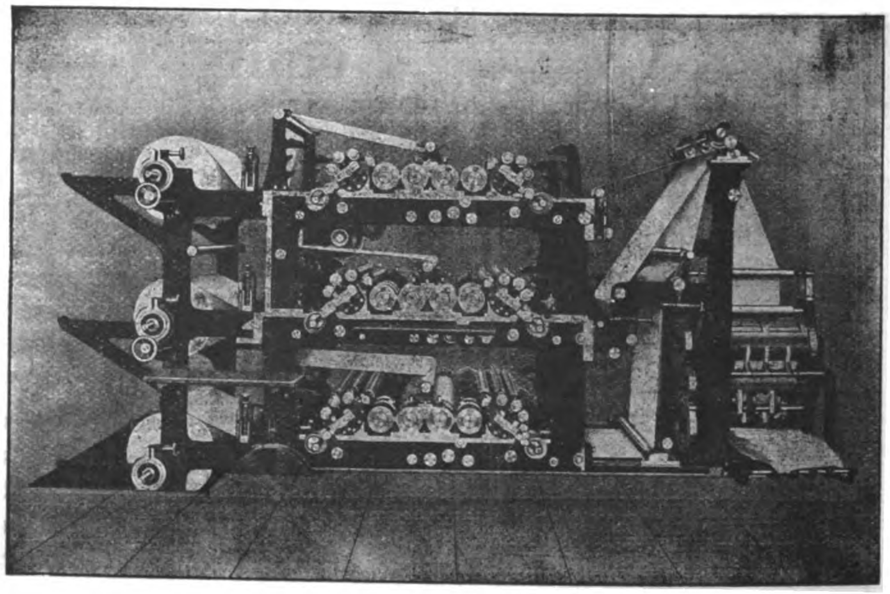

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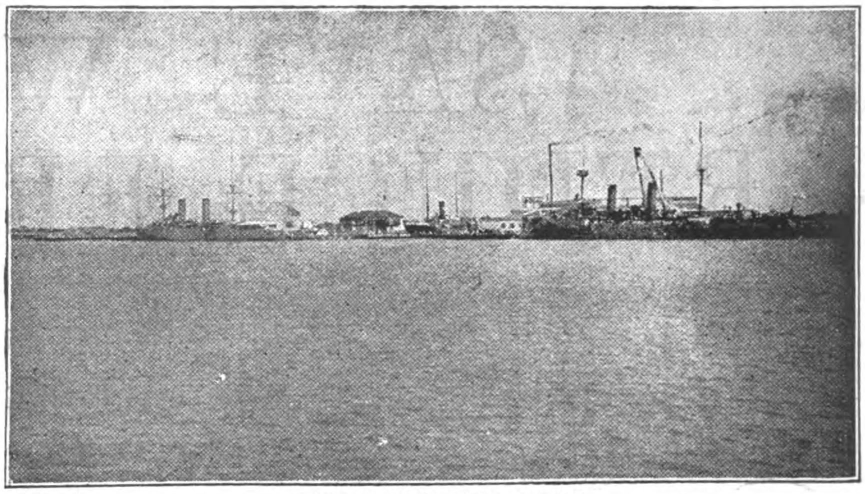

VIEW OF INTERNATIONAL DOCK
showing "M. S. Dollar" in Dock and the Chinese Cruisers "Hai Chi" and "Hai Yung" alongside Dock Co's. Wharf.

## Boilermakers, Dock Proprietors, Shipbuilders, Engineers and Electricians

**FIFTEEN REVENUE CRUISERS BUILT FOR THE QUARTERMASTER'S DEPARTMENT U. S. ARMY—MANILA, P. I.**

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The Sea-going Salvage-vessel "General Weeks" 148 feet long Built for the same Department, in 1910

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The Docks are five in number, ranging in length from 355 feet to 532 feet on the Blocks, and breadth of entrance from 53 feet to 77 feet, with a depth of water on the sill of from 16 feet to 24 feet.

The Dock charges are the most moderate in the Far East

The Company's Yards and Docks cover 96 acres. The Water Frontage is about 1½ miles in length. Wharves and Pontoons are arranged where steamers can moor during repairs; and slips for hauling up small vessels are provided. Sheer legs capable of lifting 65 tons are placed at the various Docks.

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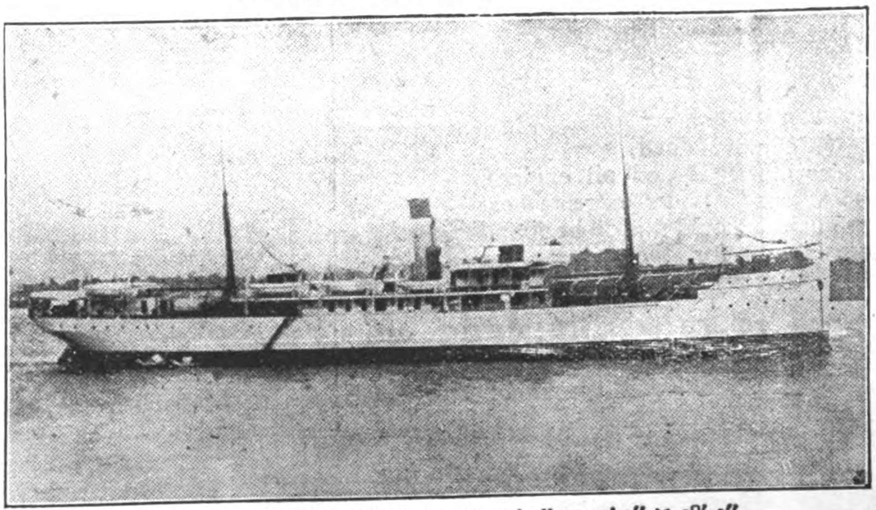

U. S. ARMY TRANSPORT "MERRITT" 300′ 0″ × 45′ 0″ × 28′ 3″
Built for United States Government in 1912.

**PARTICULARS OF DOCKS**

Able to accommodate any vessel that can reach Shanghai

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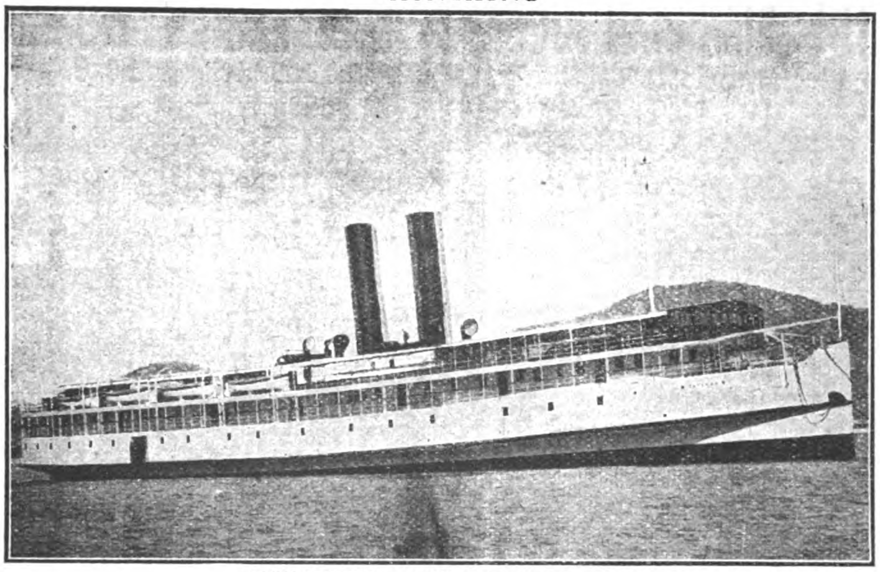

TWIN SCREW RIVER STEAMER "TAI SHAN"

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Built and engined complete by the HONGKONG & WHAMPOA DOCK CO., LTD. for the HONGKONG, CANTON & MACAO STEAMBOAT CO. LTD.

The Dimensions of Docks and Slips are as follows :—

| Name of Dock or Slip | Length on Keel Blocks | Entrance Breadth | Depth Over Sill at Ordinary Spring Tides | Rise of Tide | |
|---|---|---|---|---|---|
| | | | | Springs | Neaps |
| **KOWLOON** | Feet | Feet | Feet | Feet | Feet |
| No. 1 Dock, Kowloon . . . | 700 | 86 ft. top / 70 ft. bottom | 30′ | 7′ 6″ | 3 |
| No. 2 Dock, Kowloon . . . | 371 | 74′ | 18′ 6″ | 7′ 6″ | —— |
| No. 3 Dock, Kowloon . . . | 264 | 49′ 3″ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 1, Kowloon . | 240 | 60′ | 14′ | 7′ 6″ | —— |
| Patent Slip, No. 2, Kowloon . | 220 | 60′ | 12′ | 7′ 6″ | —— |
| **TAI-KOK-TSUI** | | | | | |
| Cosmopolitan Dock . . . . | 466 | 85′ 6″ | 20′ | 7′ 6″ | —— |
| **ABERDEEN** | | | | | |
| Hope Dock . . . . . . . . | 430 | 84′ | 23′ | 7′ 6″ | —— |
| Lamont Dock . . . . . . . | 333 | 64′ | 16′ | 7′ 6″ | —— |

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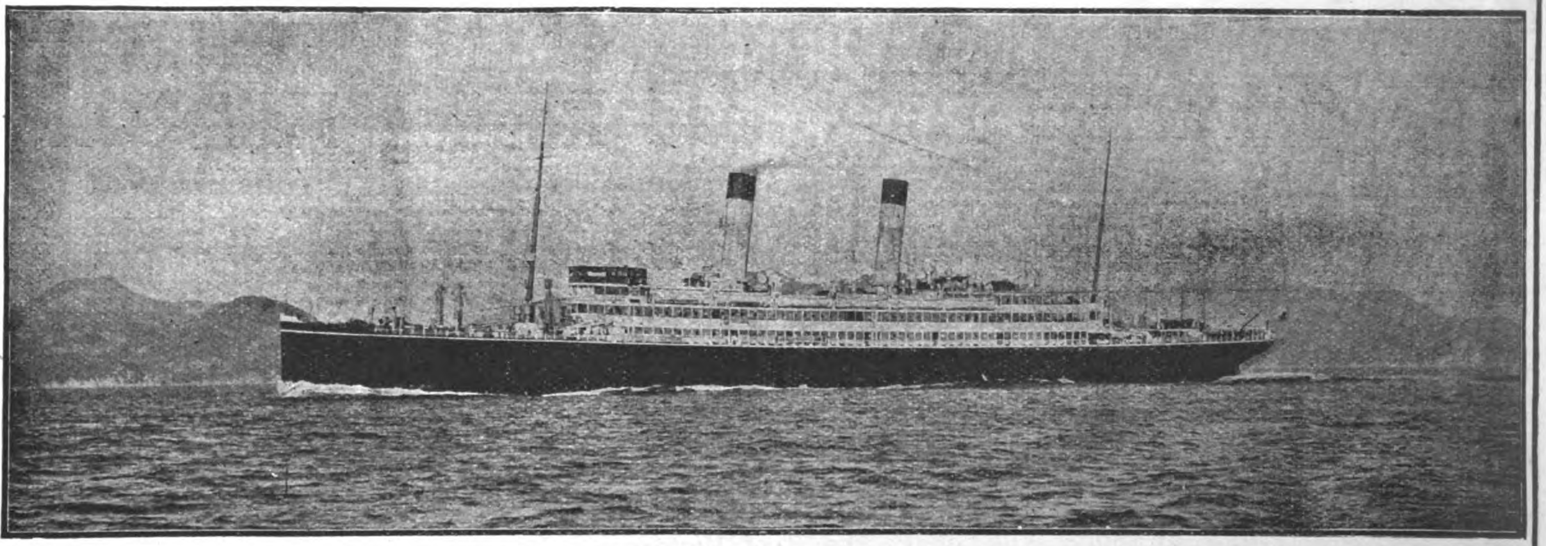

The "Tenyo Maru," built and engined by the Mitsu Bishi Dockyard & Engine Works, Nagasaki.

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| | DOCK No. 1. | | DOCK No. 2. | | DOCK No. 3. | |
|---|---|---|---|---|---|---|
| Extreme Length | 523 | Ft. | 371 | Ft. | 722 | Ft. |
| Length on Blocks | 513 | " | 360 | " | 714 | " |
| Width of Entrance on top | 88 | " | 66 | " | 99½ | " |
| " " " Bottom | 77 | " | 53 | " | 88½ | " |
| Water on Blocks at Spring Tide | 26½ | " | 22 | " | 34½ | " |

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With Special Facilities for Handling the Heaviest Castings and the Repairing or Building of Ships, Engines and Boilers Also Electrical Work.

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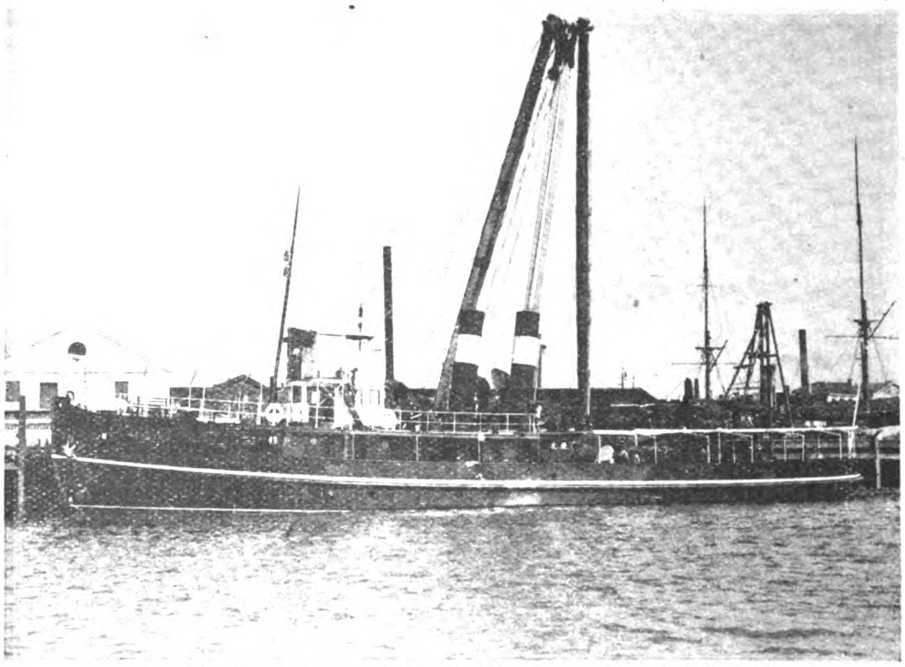
KIANGNAN DOCK

Length over all, 560'; length on blocks, 544'; water on sill, 19'; dock entrance, top, 70', bottom, 60'.

The dock accommodates the largest coasting steamers and is equipped with complete modern facilities for handling work thoroughly and promptly.

The new machine and boiler shops, and the foundry and shipbuilding plant are equal to any this side of Suez.



ICE BREAKER CHING-LING, BUILT FOR THE HAIHO CONSERVANCY BOARD, TIENTSIN, NORTH CHINA.

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Patent slipway for small steamers and launches. Complete boat and launch building shops.



# Galvanized Springhead Roofing Nails

2¼ inch by No. 9 Gauge

2½ inch by No. 9 Gauge

**? Why buy bolts and nuts which become loose when Galvanized Sheets can be fastened to roofs with Special Roofing Nails ?**

They cost much less than the ordinary bolt, nut, and washer.

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SUITABLE FOR ALL INDUSTRIES, AND FOR BURNING ANY KIND OF FUEL

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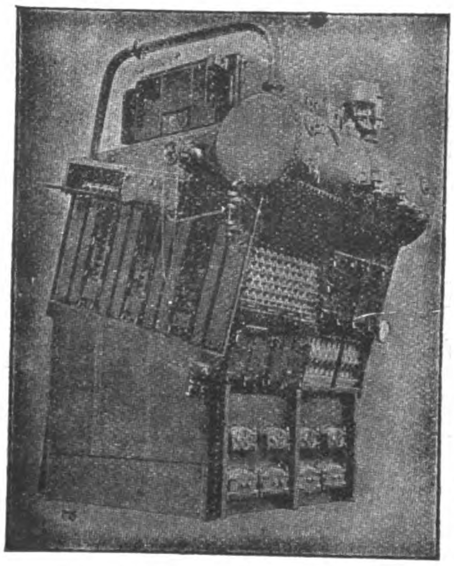

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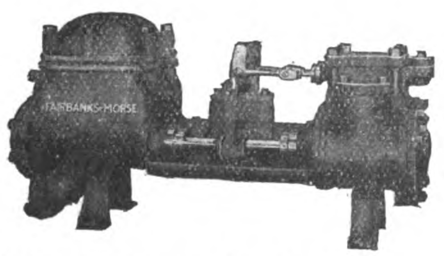

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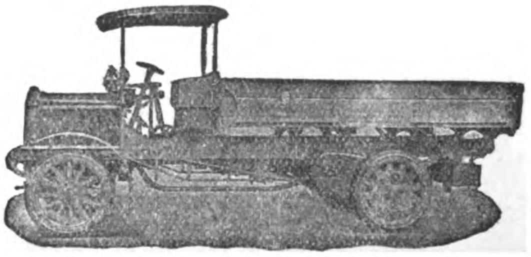

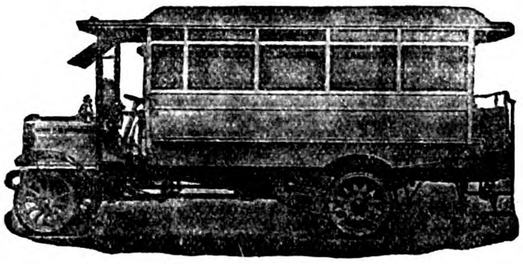

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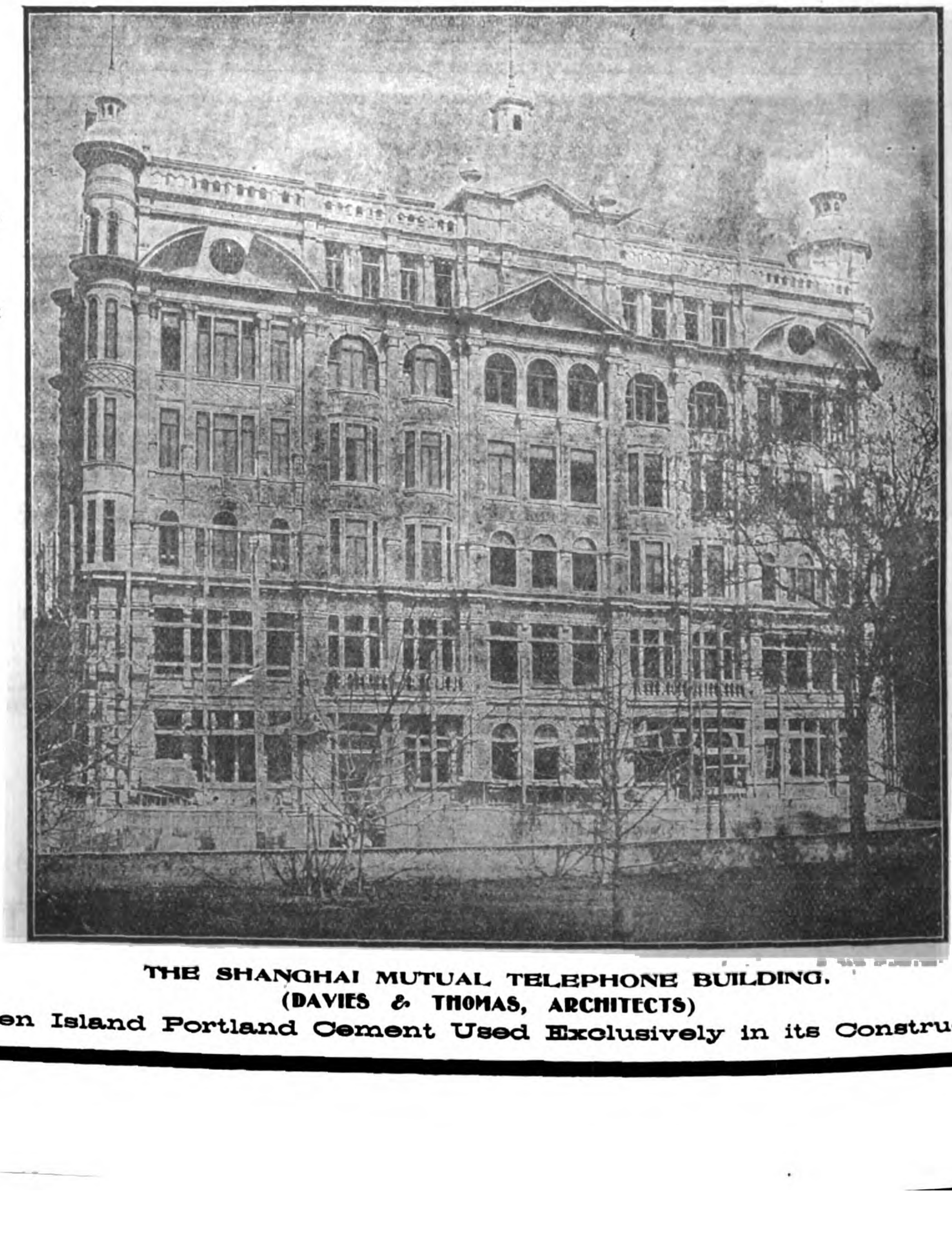

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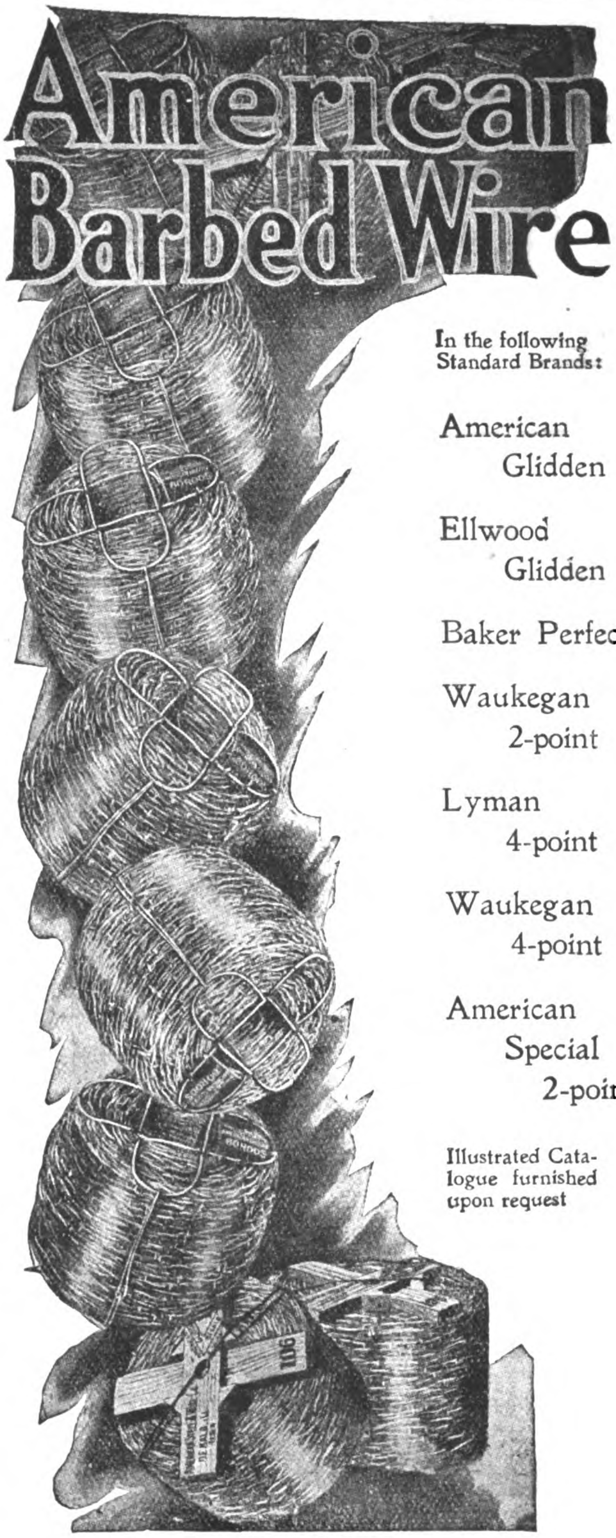


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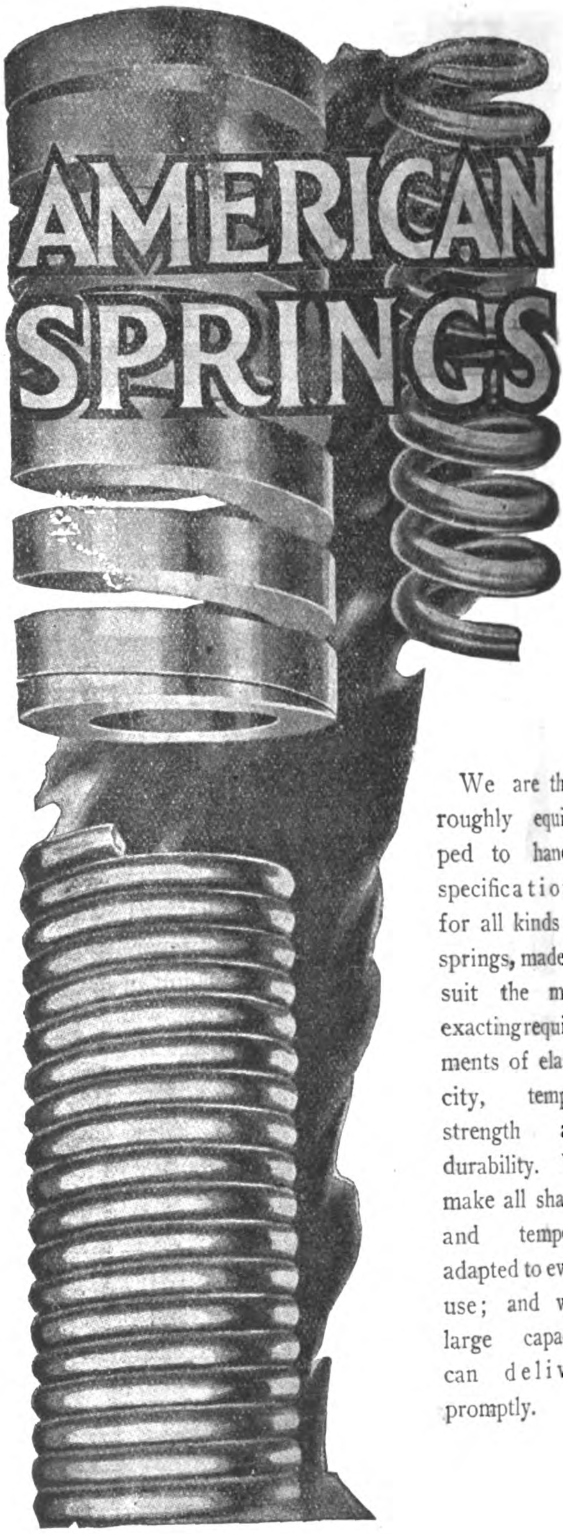


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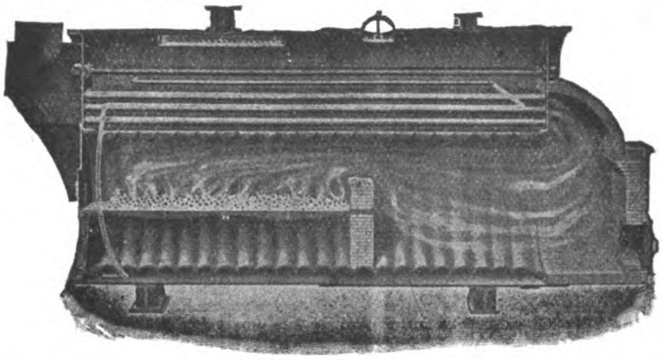

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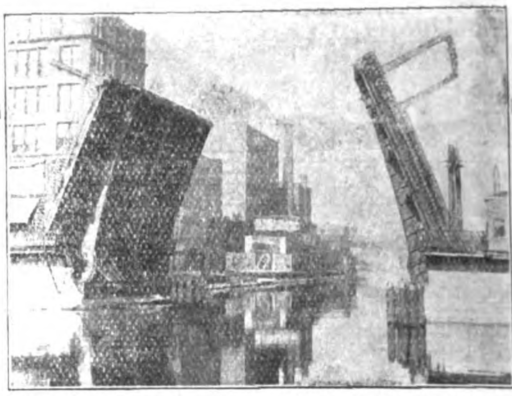

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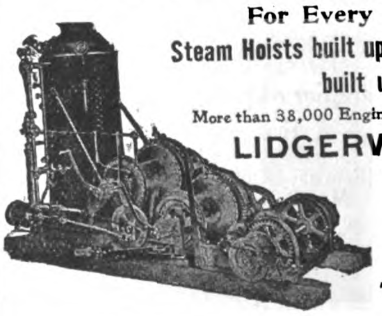

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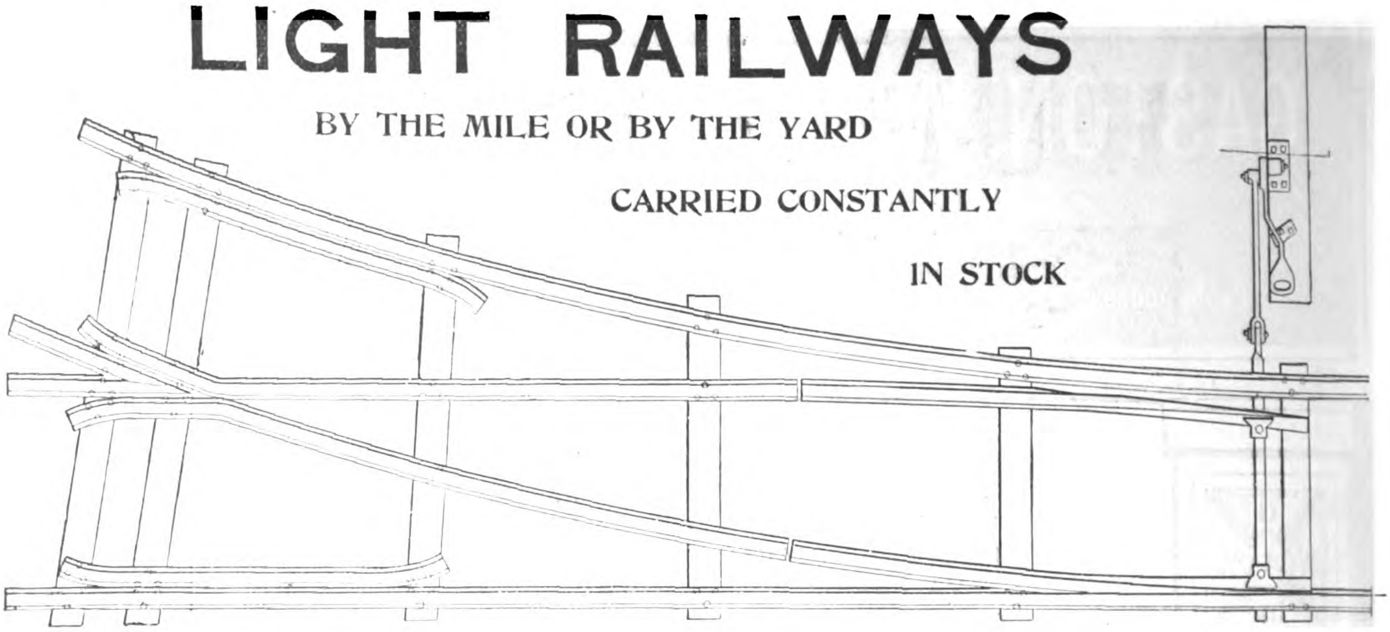

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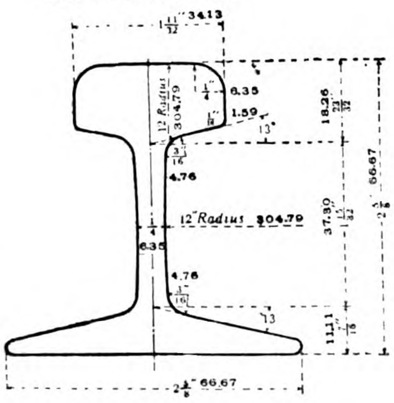

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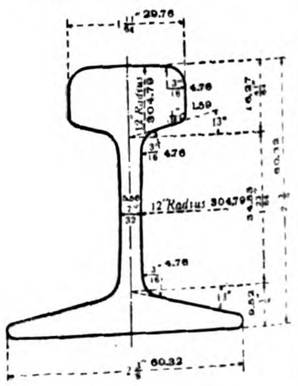

16 lbs. per yard.
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25.14 gross tons of single track per mile.
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210 ft. of single track per gross ton.
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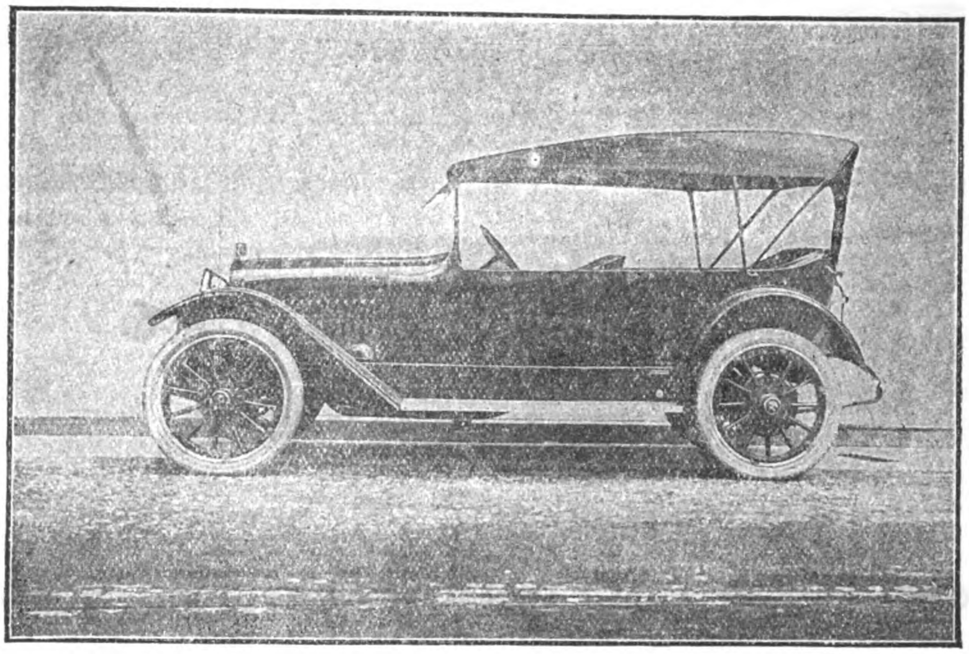

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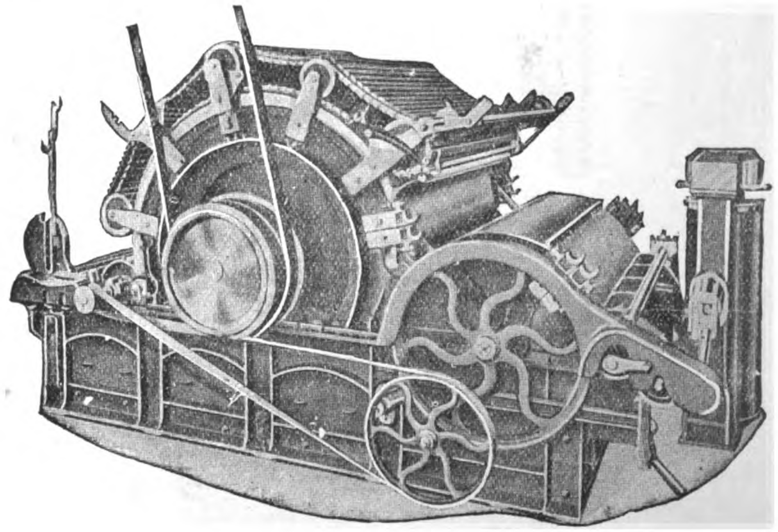

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